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Integrated ageing : an architectural strategy for the ageing baby boomers

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INTEGRATED AGEING:
AN ARCHITECTURAL STRATEGY FOR THE AGEING BABY BOOMERS

by

Jessica Feldman Rotenberg

B. Arch University of Miami, Florida 2006

A design thesis|project

presented to Ryerson University

in partial fulfillment of the

requirements for the degree of

Master of Architecture

Toronto, Ontario, Canada, 2011

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Jessica Feldman Rotenberg

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Master of Architecture
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ABSTRACT

The Baby Boomer generation has exerted significant influence within Canadian society. This power will continue to strengthen as Baby Boomers will redefine their lives in their golden years. The sheer volume of this generation has continuously affected economic and political clout, which constantly alters society. The current model of traditional institutional care, which keeps the elderly apart from their community to receive additional healthcare, will no longer be a suitable option for the Baby Boomers. As such, an investigation into an alternative solution for senior living is needed in order to provide an adequate environment to support this powerful and diverse elderly Baby Boomer generation.

This thesis establishes architectural strategies that address the fundamental theory that encourages ageing in a place within the community, allowing for a “society for all ages.” This thesis also identifies how architecture can reduce the reliance of formal care through providing social connectivity within an intergenerational setting, which promotes independence and community support. The result is an architectural exploration reinterpreting the way we design for the ageing Baby Boomer population by creating unique spatial relationships that provide the opportunity for the community to engage in social activities.

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I would also like to express my sincere gratitude to my family, as without their love and support and belief in me, I probably would have never completed this thesis.

DEDICATION

For my husband, Aaron

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“It is often said that the value and meaning of civilization can be documented from the record it leaves in the form of architecture, and that the true measure of compassion and civility of a society lies in how well it treats frail older people.”

(Regnier, 1994, vi)

1.0 INTRODUCTION

By 2011, the first Baby Boomer cohort will reach age sixty-five, driving them into the senior demographic. This will have a severe impact on the existing senior housing situation. It is not only the sheer number of seniors that will impact society but also the traits of the elderly. On average, the Baby Boomer population will live longer than previous generations, and is expected to remain active and independent for a longer period of time. In the past, Baby Boomers have changed society through their sheer size. Looking toward the future, Baby Boomers will continue this trend, challenging what are acceptable living, work and healthcare arrangements for seniors.

In the last sixty years, the major providers of housing and care for the elderly in North America have focused their energies on emulating two diverse and equally inappropriate models: the retirement housing segment looked for cues within the collegiate model of campus dormitory, while the healthcare component followed the medical model as exemplified by the acute care hospital (Dwight, 2009, 26). "Within the rigid boundaries of such diverse environments, society has tried to develop continua of care, which have historically required the consumers to physically move from living space to healthcare space, depending upon their level of frailty" (Dwight, 2009, 26). Baby Boomers are currently noticing that there needs to be an alternative to this structure as they look for options for their parents as well as their vision for their own life in later years (Perkins, Hogund, Kin, & Cohen, 2003, 3). Future elderly facilities need to address the unique characteristics of the Baby Boomers rather than previous housing models.

The Baby Boomers are unlike previous generations, thus senior life must account for these differences. The Baby Boomers will define a new way of senior living that promotes independence, ageing in place, continuing to work, self-governance and physical well-being. Traditional elderly homes are associated with "getting older," a chapter in life Baby Boomers do not want to identify with. The most difficult issue will be to provide aid to the "Forever Young Boomer Generation," as they age in an inconspicuous manner so that Baby Boomers will accept the services when they require them. The Baby Boomers are projected to live longer than previous generations and will require a full range of services that will be sufficient for their needs, as people age at very different rates and manners. Independent seniors will not want to live alongside people with memory loss or dementia thus architecture must be cognizant of this requirement. Moreover, since seniors prefer not to move as they age, the same services that are required for dependent elders must be available for the healthier ones in the future, if necessary.

While most Baby Boomers are in denial about ageing, one cannot deny that people grow older thus the effects of ageing eventually ensue. When planning for future seniors, it is essential to acknowledge certain characteristics of ageing from the current senior generation's perspective in order to design a facility for them. Healthcare, community, independence, and finance are factors that affect the quality of life of all elderly individuals no matter their generational divides. The combination of these universal factors with the differences of the cohorts will serve as the foundation for a new way of living through the senior years. This thesis will attempt to determine a new type of community facility that will aid the Baby Boomers throughout their transformations in ageing while remaining active participants of society.

1.1 Research Question

Can the built environment enhance independent ageing while allowing residents to remain active participants in the community?

1.2 Thesis Statement

Due to their sheer power in size, Baby Boomers have continued to carve their way through life, transforming the world they live in. Based upon demographic trends, there is a strong need to redevelop facilities that can foster innovative concepts and services for older adults while they remain active participants in a “society of all ages.”

1.3 Background Information

All over the world, the population over age sixty-five is projected to grow significantly as the Baby Boomer generation continues to age. Baby Boomers are identified as those born between 1946 and 1964 when there was a dramatic increase in babies coming out of post-World War II. The resulting population, 32 million (Statistics Canada, 1993) Baby Boomers, has had a profound impact on Canadian society.

Baby Boomers have economic and political power as well as the ability to reject the stereotype of ageism. As this cohort nears retirement, the Baby Boomers' impact on society, consumerism, relationships, culture and the workforce will change the way people age.

The influx of seniors is caused by impacting factors that will change the demographics of the country. Baby Boomers are expected to live longer and continue to remain independent longer than the previous generation. This combined with the already large Baby Boomer population will create a tidal wave of people living into their senior years. There are many discrepancies for a standard definition of the term *elderly* or *senior citizen*. In this study, *elderly* will refer to anyone at a post-retirement age, typically sixty-five and older. Further breakdown of the term will refer to two different categories of ageing: the lower bound elderly ages sixty-five through seventy-four, and upper bound elderly aged seventy-five and older.

The National Framework on Ageing sets out an overall vision: "Canada, a society for all ages, promotes the well-being and contributions of older people in all aspects of life" (Health Canada, 1998). The vision for healthy ageing seeks to specify further how this will play out by providing age-friendly environments and opportunities for older Canadians to make healthy choices, which will enhance their independence and quality of life (Government Canada, 2009). Cities need to be transformed and adapted in order to promote the wellness and wellbeing of all ages, beginning at the level of a single building.

Within the next thirty years, the composition of our neighbourhoods will change completely. We will not view ageing as a time in one's life where a person is placed in a 'grey ghetto,' but rather seniors will be a large and active part of our communities. The new generation of seniors will remain

independent longer, continue to work and age in place. This will end the breakdown of the lifecycle and merge it into an ageless society.

Statistics Canada states that the number of retirement-aged Canadians in the workforce will continue to increase by 2020; one in five people in the workforce will be aged fifty-five to sixty-four (CBC News, 2007). Baby Boomers are expected to work longer and retire later in life, if they retire at all. Retirement to this cohort does not represent leisure time; rather, retirement means starting a new career with more flexible hours with partial time allocated for leisure and travel. Retirement can be a financial burden to many seniors, as well as isolating and non-stimulating; however, Baby Boomers understand the lifestyle changes and prefer to remain an active member of the workforce.

The liberated minds of the Baby Boomers will have some undesirable responses to their ageing. Baby Boomers chose to have fewer children than previous generations. They also paved the way and pushed for equality of men and woman in the workforce. These two factors identify a situation where many Baby Boomers might not have children that are able to help take care of them as they age. Children, especially the eldest female daughter, typically take on the responsibility of taking care of their frail elderly parents. (Novak, Issues in Aging 2009, 82) Consequently, many Baby Boomers will need to rely more on hired aid or alternative relationships to help cope with the effects of ageing.

Baby Boomers will continue to work past their retirement years as well as live longer than previous generations. They will require a flexible, independent and personal way of life that fits their individual needs. This cohort altered the way society functions with their outlook on life, which has had significant changes on the future. Therefore, Baby Boomers will request different options for senior living. With a new position on ageing and their strength in numbers, Baby Boomers will revolutionize the way we build for the elderly community.

1.4 Methodology

The thesis project contains two different sections investigating the future of the Baby Boomer cohort. The first is a review and understanding through research to determine the projected requirements of the ageing population, while the second uses information acquired during the previous phase to conclude with a design that will aid in the prolonged independent period of the approaching elderly population through community support and social integration.

Initial research for the study investigates the major concerns of ageing regarding both the Baby Boomers and current seniors. The collection of primary data will be gathered through a variety of reliable statistics, books and articles about gerontology; furthermore, the information will be broken down to identify specific areas of focus: community, independence, economics and healthcare.

Research continued through meetings with a gerontology specialist to discuss the important aspects of ageing to gain additional knowledge from this profession will ensure that every important critical area of focus will be acknowledged and understood. Using this data, focused metrics, as well as the differences between the Baby Boomers to previous generations, research will continue to support the preliminary areas of concern.

Architectural examples of case studies are analysed through the previous research methods and personal experiences at three Toronto-based retirement homes, and will provide an understanding of the present senior conditions. In tandem, conversations with two professional developers of senior living facilities will identify overlaying similarities and differences of priorities in design and function of current and future facilities. Understanding global case studies of current architectural projects dealing with the increased senior population will continue to aid in both the research component and design phase of this thesis.

An appropriate combination of the critical criteria documented over the progression of the preliminary phase will provide the background knowledge for a proper response to create a new facility for the ageing Baby Boomer population. The relevance of this research will be tested through a design process that highlights the tactics needed to be addressed while identifying the architectural approaches to allow the elderly to live independent longer as active members of their community. This study seeks to develop substantial elements that directly correspond to the primary areas of concern as a way to format conclusions through research and design.

1.5 Outline of Thesis

The contents of this thesis are broken down into four parts. Part 1 is an introduction to the subject of research, the methodology used to develop the research, the statement of the research question, and the background information.

Part 2, A Case for an Alternative, is a look into the social issues, which includes definitions and pertinent descriptions of gerontology, Baby Boomers and their traits for ageing, concluding with the identification of the different aspects needed to be addressed for the future design of seniors.

Part 3, Integrated Architecture, evaluates the different architectural elements and case studies that can be used to design a facility for the future Baby Boomers that fosters independent ageing through community connectives.

Lastly, part 4 of this thesis is the evolution of the final design, site selection, and description and summary of the final design through the objects specified in the previous sections.

2.0 A CASE FOR AN ALTERNATIVE

2.1 Gerontology

One of the challenges of this thesis is how to define the requirements needed for the ageing Baby Boomers. For the purpose of this study, the needs of seniors can be identified through one major requirement: independence. Three subcategories are recognized throughout the thesis in order to remain independent longer: Healthcare, community and economics. This section will identify the basic necessities of the current elderly cohort in order to identify traits that need to be addressed to design a facility for the future.

Figure 1 Requirements for Healthy Ageing

2.1.1 Independence

Independence of an individual cannot be based on age but rather on mental and physical abilities. These determinants can be evaluated based on different models that can identify the different aspects most important to the quality of life for seniors. Healthy ageing is a lifelong process of optimizing opportunities for improving and preserving health and physical, social, and mental wellness, independence, and quality of life, and enhancing successful lifetime transitions (Canada, 2002). A person whose ability to act alone decreases and becomes reliant on others to do everyday tasks is someone who has become dependent. This time in a person's life is typically the most difficult transition, oftentimes causing depression and difficulties adjusting to a new life. It is important to identify a way to allow for people to live as independent as possible, providing a means to create an environment that maximizes a person's abilities and preventing strenuous transitions into elderhood.

The Rowe and Kahn model of ageing and the Lawton Nahemow Ecological Model analyze the best ways to determine quality of life, thus identifying independence. The Rowe and Kahn model states that healthy ageing is composed of the following: 1. Low chance of disease and disability; 2. High mental and physical functionality; and 3. Active engagement in social relations and productive activities. These three factors can determine a person's quality of life. (Novak and Campbell, Aging and Society: A Canadian Perspective 2010, 103) Each of these factors is based on an ability of self-fulfillment to determine healthy ageing. Keeping seniors healthy, active and independent is the key goal to positive ageing. As such, this thesis will continue to identify ways to provide an environment that aids in a beneficial ageing environment.

Another method to identify a way to monitor an independent lifestyle is the Lawton-Nahemow model for ageing. This method finds that the most competent level for people is where they feel secure but still challenged. (Novak and Campbell, Aging and Society: A Canadian Perspective 2010, 103) An environment must adhere to the people with declining independence, as well as mental and physical health. Seniors who receive care though are not challenged actually decrease in health. The most positive situation in this area is where people are encouraged, and feel safe and secure, which allows them to act independently.

According to gerontology professor Pria Nippak, a professor at Ryerson University, the moment a person feels dependent is when they can no longer drive their car (Nippak, 2010). This ability marks the transition where a person's declining health actually impacts their capability to live as they had when they were younger. The current elderly cohort, known as the "Greatest Generation" grew up without relying solely on personal vehicles as transportation. However, most Baby Boomers have been driving since they were able to receive their licence and never lived without their own car. This is going to cause more difficulties for the future ageing population, especially those who live in suburban neighbourhoods without public transportation. In communities with transit programs, about 36% of elders ride transportation programs (Gelfand, 2006, 91).

Figure 2: The Lawton Nahemow Model of Ageing

Many ageing people try to live independent lifestyles by remaining within their home. However, this can have many negative effects such as social isolation, depression, unsafe living conditions, and health issues. An independent lifestyle is not measured by living alone, but the way a person functions with their daily activities. Levels of independence can be increased or decreased based on healthcare monitoring, community involvement and financial situations (Nippak, 2010). The

following sections continue to evaluate the current traits of ageing that impact the elderly ability to act independently.

The figure below diagrams the many different determinants of independent active ageing. There are many different attributes that determine active ageing, but they can be summarized to recognize the important aspects of community, financial and healthcare options available.

Figure 3: Determinants of Active Ageing

(Active Ageing)

2.1.2 Healthcare

For the purpose of this study, healthcare refers to the different services that can be provided. When healthcare is discussed, this does not simply refer to going to see doctors. As a person's health decreases, it can mean a broad range of care activities such as buying groceries and driving to appointments can become difficult. Different types of healthcare can be broken up into three different care models. First, the Social Model looks to keep seniors out of institutions and at home longer. This includes adult day care workers, counsellors and family who support an elderly person. The next model, the Medical Model, focuses on the treatment of diseases and injuries. This type of care relies on the institutional aid from doctors, hospitals and nursing homes. The last model, the Health Promotion Model, identifies the need to remain healthy in order to remain independent and healthier longer through prevention. Wellness and wellbeing are promoted, preventing the fails of ageing through safety, health and fitness. Healthcare professionals have proposed a shift from the medical model to a social one based within the community (Novak & Campbell, , 2010, 236). It has generally been concluded that traditional 'institutional' care, which keeps older people apart and medicated old age, is no longer a desirable option for ageing. (Ageing, Housing and Urban Development, 2000). This is due to the high cost of institutional homes as well as the desire to age within ones home.

Table 1: Formal and Informal Care

(Canada, Statistics, 2010)

Healthcare can additionally be broken down into the types of services required. Formal healthcare refers to institutional care as well as paid aid. This can consist of anyone from a nurse to a home care provider. Much of the basic formal healthcare can be covered by government subsidies. However, it can be very costly to have any additional care that a person might require as they age. Canada's healthcare model has begun to shift from a medical or formal model to a social model of care to try to keep people living at home longer (Ageing in Canada, 2009, 159). Social support refers to the help and assistance we give and receive from others (Novak, Issues in Ageing, 2009, 335). Informal or social support are typically given and received from family or close friends. This model sees personal and family counselling, home care, adult day care, and meals on wheels programs as part of its healthcare system. Within this system, care takes place at the person's own home rather than in an institution. A Healthcare team of nurses, doctors, and physical therapists attend to the patient when needed while they rely on other support methods for additional care options. The table below explains the differences between the two healthcare models. This shift from a medical model to a social one will serve to benefit the economy of Canada as a large percentage of its population require more support. However, it will also face many obstacles as the dependency ratio for social support is decreasing. This concept will be discussed further in the trends of the ageing Baby Boomer population.

Medical Model	Social Model
Patient Acute patients Physicians and hospitals Patient fits organization Rigid system boundaries High priority to short-term need Serves long-term capacity Diagnosis/ treatment/cure model Organizationally inflexible Institutional care Excluded people in the community Institution-centred Makes little use of informal network Medical/physical assessment Meets patients' medical needs Patient accepts professional treatment Hierarchical organization Expensive resources Major share of healthcare budget	Resident, consumer Chronic clients Community settings and home Organization fits client, changes to fit client if necessary Open system boundaries High priority to long-term need Serves long-term care first Assessment of functional capacity, service needs identified, services delivered Organizationally flexible and creative Includes community members and may include institution Person-centred Includes informal support Multi-dimensional assessment (physical, psychological, social needs) Helps clients meet their own needs Client plays role in developing treatment plan Flat-organization, team approach Lower-cost resources Small share of healthcare budget

Table 2: The Medical Model and The Social Model in Long-Term Care

Table adapted from (Havens, 1995)

2.1.3 Community Network

A person's community support can have an extreme impact positive ageing for seniors. Most people who require moving to a seniors' home prefer to move either within their existing community or closer to family. Remaining social and active parts of society greatly increases the quality of life for most seniors. The second strongest predictor of quality of life is family contact and participation in social activities (Sirooska, 1999). Additionally, the environmental impacts of a strong social network can actually increase the health of the elderly by providing emotional, physical and mental support.

Most people associate seniors and retirement with moving away to vacation villages, playing golf and tennis every day, when in reality, the majority of people age in place, within their own social surroundings. The elderly prefer to continue to live in a community they are already a part of. Previously, preferred retirement homes were situated in isolated acres of land in the middle of the

sunbelt; however, now retirees and the elderly prefer either to continue to live in their current community or move closer to relatives. People who change residences actually decrease in age rather than increase (see chart below).

Isolation and disassociation with a person's surroundings can cause depression and reduce the quality of life, as well a reduction in health in the elderly. Senior isolation can be caused from two different housing models. The first, ageing in place, can create a solitary environment due to a lack of mobility and participation within the community as a whole. The second is caused by separation of community ties that is caused by relocating environments away from friends and family. Senior isolation can be avoided without the need to relocate the living environment to an elderly home through strategic planning and community support. A community that is prepared to support its seniors can take advantage of the contributions of the elderly knowledge and create valuable intergenerational relationships and shared knowledge.

Senior isolation due to lack of mobility has a negative impact on the community as a whole. A community that is designed to support senior mobility can take advantage of the talents of their elders. To prevent senior isolation, third spaces throughout history have been used as a way for all ages to interact within the community. An easily accessible quality third place, which allows for seniors to informally interact with a diverse range of ages on a daily basis, will help prevent senior isolation. There are many benefits that occur from intergenerational support within the community.

Table 3: Percentage by Age Group of Persons who Changed Residences
(Statistics Canada 2010)

2.1.4 Financial Impacts

On average, Baby Boomers are a financially successful generation; however, this does not mean they are prepared for the costs of retirement and ageing. One in five Baby Boomers have no retirement savings — though only 5% expect government pension to provide more than half of their retirement income (Sinclair, 2008). There is a large economic divide between the financial incomes of the Baby Boomers, making it difficult to generalize the actual amount of savings and earnings of the generation. Although Baby Boomers have the most economic wealth of any generation, they do not have much saved for retirement. “Baby Boomers are sandwiched between the cost of their kids’ educations and their own mortgage (54% are still paying off their homes), thus they might find it a stretch to afford the Jacuzzi and a view in retirement” (Sinclair, 2008). This can make it difficult for Baby Boomers retire and continue living the life they had made themselves accustomed to.

The large increase of elderly relying on the healthcare system and pension incomes are going to dramatically affect the financial implications of taxpayers. Furthermore, if seniors continue to triple the healthcare spending of those under the age of sixty-five, then by 2025 — with 20% of the population over sixty-five — those late Baby Boomers could end up financing more of their own expenses. They might not have to look at “not so much what they want, but what I can afford” (Sinclair, 2008). Designing the future will require an affordable alternative, decreasing the pressure of relying solely on pensions, the healthcare system and personal savings as the only support systems for taking care of the ageing.

Table 5 evaluates the average income and expenditures of Canadian seniors in order to analyze the amount of money they have to support them post-retirement. The expenditures represent the basic needs of people without luxuries and healthcare. For those who do not have an alternative income besides pension, one can see that after the basic expenditures are removed, seniors are left with about \$3,000 to pay for everything else for the year. This does not include any type of private home care, private healthcare, and other needs and luxuries.

The government retirement fund can be broken down using the following model to determine the average income of seniors.

Percentage of Seniors 65+ Receiving Income in Canada	Men	Women
Investments	25.10%	58.40%
Retirement Income	56.10%	19.70%
OAS/GIS/SPA	93.60%	97.40%
CPP	95.80%	85.80%

Table 4: Average Income from Government Pensions

	Canada							
Average Income	Average 65+		65-74		75+		55-64	
		\$34,566		\$40,820		\$30,144		\$62,800
Gouvernement, Private Pensions, and Social Security	78.80%	\$27,238.01		\$32,166.16		\$23,753.47		\$49,486.40
Work	6.20%	\$2,143.09		\$2,530.84		\$1,868.93		\$3,893.60
Investments	10.70%	\$3,698.56		\$4,367.74		\$3,225.41		\$6,719.60
Other	4.30%	\$1,486.34		\$1,755.26		\$1,296.19		\$2,700.40
Average Expenditures		\$25,950		\$30,200.00		\$21,700		\$43,300
Food	17.95%	\$4,658.03	17.70%	\$5,345.40	18.70%	\$4,057.90	15.40%	\$6,668.20
Residence	39.55%	\$10,263.23	35.60%	\$10,751.20	43.50%	\$9,439.50	43.50%	\$18,835.50
Healthcare	6.15%	\$1,595.93	5.50%	\$1,661.00	6.80%	\$1,475.60	4.30%	\$1,861.90
Entertainment	6.15%	\$1,595.93	7.20%	\$2,174.40	5.10%	\$1,106.70	7.90%	\$3,420.70
Utilities/Household	8.05%	\$2,088.98	6.50%	\$1,963.00	7.60%	\$1,649.20	6.03%	\$2,610.99
Transportation	16.05%	\$4,164.98	19.40%	\$5,858.80	13.60%	\$2,951.20	21.60%	\$9,352.80
Other	6.10%	\$1,582.95	8.10%	\$2,446.20	4.70%	\$1,019.90	1.27%	\$549.91
Net Savings		\$8,616.00		\$10,620.00		\$8,444		\$19,500

	United States							
Average Income	Average 65+		65-74		75+		55-64	
		\$39,341		\$45,232		\$32,886		\$71,826
Gouvernement, Private Pensions, and Social Security	57.90%	\$22,778.44	49.90%	\$22,570.77	65.90%	\$21,671.87	3.20%	\$2,298.43
Work	31.60%	\$12,431.76	42.70%	\$19,314.06	20.50%	\$6,741.63	83.00%	\$59,615.58
Investments	8.65%	\$3,403.00	5.70%	\$2,578.22	11.60%	\$3,814.78	3.20%	\$2,298.43
Other	1.85%	\$727.81	1.70%	\$768.94	2.00%	\$657.72	13.80%	\$9,911.99
Average Expenditures		\$41,443		\$36,844		\$31,692		\$54,786
Food	12.70%	\$5,263.26	12.90%	\$4,752.88	12.40%	\$3,929.81	11.60%	\$6,355.18
Residence	35.30%	\$14,629.38	33.40%	\$12,305.90	33%	\$12,042.96	32%	\$17,531.52
Healthcare	12.50%	\$5,180.38	11.50%	\$4,237.06	13.90%	\$4,405.19	7%	\$3,835.02
Entertainment	5.20%	\$2,155.04	5.80%	\$2,136.95	4.30%	\$1,362.76	5.50%	\$3,013.23
Utilities/Household	9.00%	\$3,729.87	8.50%	\$3,131.74	9.70%	\$3,074.12	7.30%	\$3,999.38
Transportation	15.30%	\$6,340.78	16.30%	\$6,005.57	13.90%	\$4,405.19	17.10%	\$9,368.41
Other	10.00%	\$4,144.30	11.60%	\$4,273.90	7.80%	\$2,471.98	19.50%	\$10,683.27
Net Savings		-\$2,102		\$8,388		\$1,194		\$17,040

Table 5: Income and Expenditures of Canadian and American Seniors

(Novak, Issues in Aging 2009, 237) (Novak and Campbell, Aging and Society: A Canadian Perspective 2010, 187) (Statistics Canada 2003) (Statistics Canada 1982 and 2003)

The cost of living escalates when more care is needed. The average costs (in 2009) are for elderly care list services that are not included in government healthcare and can cause a financial burden on the elderly:

\$198/day for a semi-private room in a nursing home (\$72,270 a year)

\$219/day for a private room in a nursing home (\$79,935 a year)

\$3,131/month for care in an assisted living facility (\$37,572 a year)

\$21/hour for a home health aide

\$19/hour for homemaker services

\$67/day for care in an adult day healthcare centre (24,455 a year)

(U.S. Department of Health Services, 2010)

Living independently longer without the reliance of healthcare or support is obviously the most desired situation amongst the ageing. Elderly people prefer to keep the lifestyle they had before they became unable to care for themselves. Older people might not realize when they do need assistance with their everyday chores, and are often in denial and do not get help. This is fairly common and can often lead to death if assistance is not provided when needed. Memory loss and falls are common, causing all sorts of problems. Furthermore, when independent people are living by themselves in their homes, this can often cause isolation and depression. Homes that are designed specifically for the ageing creates an architectural response to elderly independence; however, one must not rely solely on technology and handrails. There must be an additional and affordable architectural response to help the elderly age in place while still providing the necessary needs such as community and healthcare.

Figure 4 Trends in Ageing

2.2 The Baby Boomers

“We need to avoid generalizations about what can be determined from demography about older people’s needs solely on the basis of the present generation” (Ageing, Housing and Urban Development, 2000, 41).

Baby Boomers are identified as those born between 1946 and 1964–65 when there was a dramatic increase in babies born coming out of post-World War II. The resulting population, thirty-two million strong, has a profound effect on Canadian society and has been accountable for altering the course of modern history (Krotki).

There are major differences between the Baby Boomers and the current elderly population. The current elderly generation shared the experience of the Great Depression, World War II, and the atomic bomb. They are loyal and hardworking and believe in formalities and processes. The current seniors lived before the technological era; computers and Internet might not be used daily or even at all. In the aftermath of the depression and war, this generation lived during an era when everyone pulled together and sacrificed for the greater good. This experience fostered the general characteristics of conservatism, fiscally prudent, and loyal to employers.

Baby Boomers, on the other hand, grew up during a time of prosperity and development. “When they were born, (society) went out and built more schools, more stadiums, they did all kinds of things to accommodate the fact that there was this large group of young people” (CBC News, 2007). They experienced post-war financial growth and became home owners and college grads as a result of the GI Bill. These experiences have defined this generation as ambitious, having a strong work ethic, and loyal to employers. Baby Boomers have less savings, work for constant corporate advancement, and most do not have pensions unlike their loyal parents. Also, gender roles and the family structure create less traditional family households. Baby Boomers have higher education, and many people have secondary and doctorate degrees. Furthermore, Baby Boomers are viewed as “idealist” and “individualistic,” experimental, free-spirited, ambitious and workaholics. (Quinn, 2008)

The priorities of the Baby Boomers are very different from the current generation of elderly and will require different standards of living as they age. They spend more eating out than they give to charity; they spend as much on big screen TVs and stereos as they do on education (Quinn, 2008). This is very different than the current elderly perception of spending. The current elderly cohort grew up during more difficult times and they thought saving was more important than spending on extravagancies. Current senior residences and options for supporting the ageing will not be an acceptable option for Baby Boomers and a new building type will need to be discovered.

2.2.1 Future Trends in Ageing

The United Nations, as well as other organizations, has concluded that the best way to deal with the increasing elderly population is to rely on a “society of all ages.” (UNESCO, 2002). A society of all ages is a world goal aimed to keep seniors as valuable parts of the community rather than place them in isolated “golden ghettos.” This goal is continuously discussed as the main focus to help the

world with the dramatic increase in the amount of people that are entering their senior years. An intergenerational approach fosters the purposeful and ongoing exchange of resources and learning among older and younger generations for both individual and social benefits (UNESCO, 2002).

In Canada, the International Year of Older Persons (1999) introduced the theme "A society for all ages," which was endorsed by the Federal/Provincial/Territorial Ministers Responsible for Seniors. This intergenerational approach addresses the growing tendency to isolate different age groups, particularly at the beginning and later stages of life, and encourages intergenerational programs, practices and policies (Government Canada, 2009). Thus, it must be a goal, as an architect, to design based on a society of all ages rather than isolate the diverse experience and knowledge of others into separate institutions.

A society of all ages must create a way for Baby Boomers to remain active parts of the community. The traits of the Baby Boomer generation will shape the way a community functions as the population ages. We can only speculate on what will happen as the largest generation continues to mature and needs to adapt to these projections. This chapter looks into prospective trends that will affect the way Baby Boomers live during their retirement and the factors that relate directly to them that will affect the way we design within an ageless society. Therefore, the most important trend in ageing is for the elderly to remain active parts of the community and not segregate based on age. Additional trends will give way, aiding in the design that responds to the future desires for elderly facilities specifically for a society of all ages.

"The problem of ageing in our society will intensify in the future, because it has at its core a dual cause: Not only are more and more people becoming older, but there are ever fewer young people. In the future very many old people will be alone, without any younger family members to care for them, as they have today. Quality medical care not only allows people to become older, they also remain active longer. The elderly want to lead self-determined and independent lives as possible. Sometimes a number of measures directed at their support suffice: simple services, care by mobile attendants, improved products for household or, indeed even accessible housing and a housing environment that allows integration" (Ebner, 2007, 12).

2.2.2 The New Retirement

The current North American retirement system rests largely on a tacit contract between generations that has been in place since World War II. This contract is based upon the principle of a division of the lifecycle into three phases.

"Firstly the phase when youths are educated; another when adults and young adults work, and finally when the elderly have the right to retirement. In this framework, the essence of the phase of 'compensated inactivity' has been granted to the elderly in the form of retirement. The main issue in post-war industrial society was to build a universal right to retirement for the elderly. In return for this right to leisure in old age, youths and adults take on stable and durable jobs. However, this division of the life cycle into three phases is no longer operational. We have entered into a knowledge-based society, in the post-industrial

era and we are witnessing a real revolution in the social organization of time. Traditional patterns of the social organization of ages and time are challenged in our new society of mobility and longevity. Consequently, the question of retirement cannot be posed independently of the question of work and organization of stages of life" (Stone, 2005).

A study conducted by Merrill Lynch looked into the plans of the Baby Boomers and their desires for retirement. They concluded that Baby Boomers are creating an alternative to typical retirement, called "The New Retirement". Instead of simply retiring, many Baby Boomers are planning to take up a second career in this new space of time. Forty-two percent of Baby Boomers have expressed their ideal retirement to be a continuous rotation between work and leisure (Merrill, 2006). Most Boomers prefer to continue working post-retirement for the following reasons: contribution to society, money, healthcare coverage, social connections and to keep their minds sharp. Only 17% of Baby Boomers said they prefer retirement to be completely recreational.

With technology, it is becoming easier for people to continue to work out of the office and on their own schedules. This work schedule will only become more popular as the Baby Boomers reach their retirement years, allowing them to create these flexible lifestyles. Generations will also continue to follow in this lifestyle pre-retirement age, thus creating a new office environment. Below is a chart that identifies the New Retirement balance and how the younger part of the cohort plans to continue working.

According to the study, most Baby Boomers prefer a new career choice using the skills and knowledge they have acquired over the years. They do not plan to work in the same field as they did before. The majority of Baby Boomers prefer a consultant position where they can work for themselves and choose the amount of work and time they would like to put in.

The "New Retirement" choice will change the way people work not only for the Baby Boomers but also for the generations to follow. Telecommuting and new technology will make it easier for people to work on their own time and from any location. Avoiding the long commutes to work, people will choose this new retirement, accomplishing their work on their schedule. This is an important concept to address while designing for the future. The current structure of retirement homes focuses on leisure rather than post-retirement careers. Where are the Baby Boomers going to begin their second careers? Architecture will need to adapt to the changing work schedules.

There is a need to change the way architects design for senior housing and remove the concept of a "retirement home." Since civilization went from an industrial society to a more knowledge-based society, people are able to work longer in life, blurring the need for retirement. People are living longer, are more mobile, and healthier. As such, seniors will continue to work longer and continue their education. Baby Boomers also have a sense of denial about ageing and will have difficulty considering themselves in the older cohort even when they reach the age category. The arrangement of the life cycle into three stages of age is falling apart, blurring of the social ages, the erasure of thresholds, thus we need a new organization of the cycles of life. Traditional patterns of the social organization of ages and time are challenged in our new society of mobility, longevity and flexibility (Stone, 2005). We need to evaluate how we can design for all cycles of life, allowing for seniors to choose the way they prefer to live in the later part of their lives.

Figure 5: Current and Future Life Cycles

2.2.3 Institutional Care

Most countries are committed to lowering the number of people living in institutions. Countries are finding that institutional homes is not the desired choice for the elderly due to poor conditions and lack of personal autonomy. Some have deliberate policies to this end while others have programs to replace them with shelters and other forms of housing and care. The decline of institutional living is likely to require more services in the community yet dispersed service may be more expensive (Ageing, Housing and Urban Development, 2000). Although many older people are benefiting from positive change in terms of incomes and services, some are still marginalized, excluded and poor. This situation gives an opportunity to develop a building type that can be afforded by all and would allow for people to remain in their community.

Currently in Canada, older people who are able to stay in their own homes can be supported by state-funded home care services, with additional financial support to assist with home maintenance and with the costs of adapting the home if necessary. However, the next step for many people is institutional care in a nursing home, and there are growing concerns about the availability of nursing homes, as well as the costs and quality of care. Canadian government policy documents (Golant, 2001; National Advisory Council on Ageing, 2002; Canada Mortgage and Housing Corporation, 2003) highlights “the relative lack of supportive housing options for older Canadians, and the requirement for federal and provincial government to address this shortfall to meet the needs and changing expectations of the growing numbers of this group, thereby reducing unnecessary admissions to nursing homes” (Karen Croucher, 2006). There is currently a move in Canada to promote ageing in place through home renovations and home healthcare in order to reduce the amount of seniors who move into institutions.

In comparison with traditional group housing, the researchers found that the most highly distinguishing variable was in fact psychological: people living in independent dwellings felt at home and had a much more positive self-image than those who were institutionalized. The researchers also looked at the range of activities that help make the stay-at-home option as satisfactory as possible. They drew a distinction between two types of coordination. The first aims to harmonize the policies and practices of institutions that encourage the elderly to remain at home. The institutions in question encompass social work, healthcare and housing. The researchers noted the magnitude of

difficulties involved in ensuring that organizations with different ways of planning and operating complemented each other properly. The second form of co-ordination involves interaction with older people themselves. The activity of care managers make them what could be described as “personalised social workers”. (Ageing, Housing and Urban Development, 2000). The second form shows the importance of social interaction and conversation as ageing. Their role is to be effective yet remain in the background, so that seniors can live as independently as possible. (Ageing, Housing and Urban Development, 2000).

There is also a decline in people moving to retirement communities throughout North America. People prefer to remain connected to their family or friends by remaining in their community. When seniors do relocate for old age, it is not to places like the Sunbelt; in fact, two-thirds of older movers relocate within their urban or rural setting (Novak & Campbell, Ageing and Society: A Canadian Perspective, 2010).

Figure 6: Vacancy Rates continue to decline for Retirement Homes

(CMMC Ontario Retirement Homes Survey, 2009)

Out dated models have to be replaced to adapt to change. For many years, the alternative to independent living was either an institution or family care at home. We now have an opportunity to create a situation where the elderly can choose the level of care and not have to move to receive it.

Older people are tending to “age in place.” In fact, more elderly people want to stay in their own homes to be near known facilities and services, as well as family and friends. Therefore, they can avoid the problems and expenses associated with moving. Ageing in place can also encompass “mainstream” housing nearby, or moving to specialized housing that allows independent living (Ageing, Housing and Urban Development, 2000).

Most seniors live alone and not in institutions. Thus, why should one design homes for people who would rather age independently (Novak & Campbell, Ageing and Society: A Canadian Perspective, 2010, 265) The defining elements of supportive housing include accommodation that is residential in character with private living spaces; a supportive physical environment to encourage socialisation

and mutual support as well as reduce risks of accidents; access to necessary support services including meals, housekeeping, transport, personal care, and social and recreational activities; involving residents in decisions and promoting realistic expectations of what can be provided; and affordability and choice for upper-, medium- and lower-income seniors (Karen Croucher, 2006).

Remaining in one's home throughout the later part of life is a desire for most Canadians, however, ageing in place has many benefits and disadvantages. Negative effects of ageing at home include isolation causing depression, safety and financial obligations; however, there are also many benefits to ageing in place such as independence and remaining in one's community. A study looking into the patient rehabilitation and success post a geriatric day hospital visit found that independent patients — those with less risk of falling — were those who lived alone and those who got around without an assistive device. Someone who received formal care tended to decline in health post-visit (Novak, 2009, 335). Therefore, senior isolation due to lack of mobility has a negative impact and should be avoided.

Living Arrangements for people 65 +

93% of older Canadians live in a private dwelling

7% live in institutions

58% live in houses

41% live in apartments

3% live with relatives or friends

3-generation household make up for 3% of all households

34% of seniors live alone without a spouse, friend (Novak, 2009, 274)

70% of people aged 55–93 wanted to age in place for the following reasons:

1. Security and safety.
2. Independence and control being near family.
3. Familiarity with their surroundings.

They reported reasons to move to a home are as follows:

1. Illness
2. Inability to maintain the property.
3. Inadequate finances. (Novak, 2009, 271)

The vast majority of Baby Boomers want to age in homes and communities for as long as possible. However, the ageing population will pose new challenges for the delivery of local services such as healthcare, exercise and recreation, housing, transportation, public safety, employment and education (Smith & Smith, 2008). In Canada, a major focus of public policy is to respect and support the desire of most seniors to remain in their present home as long as possible through measures such as income support, subsidies to reduce cost of shelter, access to home equity, physical adaptations and repairs to the home, and on-site personal support and care services (Ageing, Housing and Urban Development, 2000).

Retirement and institutional homes provide opportunities for social interaction as well as healthcare support. A positive third space, which is a public space to gather outside of the home or office, can

help fill the void lacking in ageing in place by giving a location for constant social interactions. The elderly of the future prefer not to go to these housing models, thus the community must fill those voids as people age in place. Since the Canadian government is moving from an institutional model to a community model, there is opportunity to provide additional community care within a local setting rather than a segregated elderly home. The importance of continuing to develop new relationships and connections with all ages can benefit the ageing, providing both informal care and social support. Therefore, community support and relationships can serve to replace the social and informal care model current seniors' housing provides.

2.2.4 Dependency Ratio

Three-generation households make up only 3% of all households in Canada (Novak & Campbell, 2010, 319). Baby Boomers are currently dealing with decisions that need to be made regarding their own elderly parents and deciding the best way to support them as they age. Elderly people say they prefer not to live with their children and prefer intimacy at a distance. Previously, it was a global normality that multiple generations live within one household and take care of each other. Multigenerational relationships rely on the concept of "interdependence" and how this can be maintained in family and society as the proportions of old and young change. Because of this decline, there is a decrease in the understanding, mentorship, teachings and benefits of intergeneration exchanges that can cause age discrimination and generalizations on both sides.

There is a shift from the previous three-generation household regarding the family structure of a household. Most families consisted of two parents, grandparents and children. The Baby Boomers have a larger percentage of single individuals who live alone or consider their friends as their immediate family. The family is the first and most intimate level of a multi-generational relationship, where all tend to invest in one another and share in the fruits of that investment; it has been termed the "first resource and last resort" for its members. "Families, however, are experiencing demographic, cultural and socio-economic changes with implications for intra-familial relationships, including in care-giving. As such, the changes both challenge and bring opportunities to multi-generational relationships" (United Nations, 2007).

The pattern of family life is now changing from the number of small households and growing number of households from different backgrounds. These homes are possibly comprised of people who are not related but wish to grow old together. The Baby Boomers and generations to follow are choosing not to have children, which causes a decline in the dependency ratio. This means that many Baby Boomers may wish to age with unrelated adults, for example, older women (Ageing, Housing and Urban Development, 2000). The change in the intergenerational households creates a separation of knowledge shared from generation to generation within the family setting. In order to allow for these benefits to be carried to society, this shift must be acknowledged and supported by a new intergenerational community setting that fosters these relationships.

Figure 7 is a good illustration of a change in the dependency ratio. Where once there was a pyramid of many children and increasingly fewer adults and older persons, now the inverse pyramid family is possible, consisting of one child, two parents, four grandparents and possibly eight great-grandparents. For the first time ever in Canada's history, seniors will outnumber the amount of

children (Novak & Campbell, , 2010). There also seem to be changing patterns of family life: the number of non-traditional families are growing while the number of households from different backgrounds, possibly people who are not related but wish to grow old together, are also increasing.

Figure 7: Inverse Family Structure

Researchers have found that changes in family demographics will limit the informal care-giving for the future; for example, geographic mobility, women in the workforce, caregiver burnout, and lower birth rates. Currently, one in five seniors live with their children or grandchildren (Novak & Campbell, , 2010, 235) This will make it difficult for seniors to get support from their families. Therefore, they will need to turn to other types of support such as friends, neighbours and their community, or costly formal healthcare services.

Elderly people living alone make more use of health services than those sharing a household with others. Calculations indicate that elderly people over the age of eighty, who live alone, use health services twice as often and spend more time in institutions than people living together with others. (Novak, Issues in Aging 2009, 337) The financial cost of services for the elderly is going to substantially escalate in the years to come with the increasing amount of seniors and cost of services. At the same time, there is a decline in the dependency ratio; with more people relying on formal and costly care. Thus, there is a new challenge that occurs: how will we be able to provide health and social care for the increasing elderly while simultaneously there is a decrease in the number of people to depend on for help? With the current elderly facility models, the only alternative to the lower dependency rate would be to move to a retirement or nursing home and rely on formal care. However, the solution must be found through shifting the paradigm of the dependency ratio from a family level to one of informal community care. Therefore, the new model for elderly care designed for the Baby Boomers must rely on community support rather than institutional care, which promotes ageing in place as well as meeting the demand for an independent lifestyle.

The community network's value will become increasingly important as the dependency ratio decreases. Baby Boomers will need to rely on friends, neighbours, and their surrounding community for more support rather than their children and family. A facility for the future must provide a way to

remain active within the community and continue to develop and build neighbourly relationships that can reduce the dependence on family or formal care.

2.2.5 Technology

Technological advances are making it easier for people to age in place longer and more independently. Better forms of home-based communication should result in a better informed elderly population able to access advice and be monitored for health status, etc., with less need to make journeys for social, business or emergency reasons. On the other hand, technological advances may hasten the closure of local banks and shops leading to a decline in social integration and adverse social consequences for those without access to computers (Ageing, Housing and Urban Development, 2000). One can only imagine the incredible advances that will be designed over the next thirty years that will continue to allow seniors to age in place with less institutional and informal care. Japan is currently leading the way in technological care with their networked appliances, creating an interactive environment where people can regulate themselves. There are also wheelchair robotics that move easily through the barrier-free environment of the collaborative homes. (Rosenfeld 2008, 243)

With time, one can only imagine that technology will help ease any worries one has of loved ones living independently. A facility that helps the ageing should adapt to meet the evolving technological needs of today and tomorrow. One can be assured, however, that people will be able to live within their own homes safely and more independently in the near future compared to the home of today. However, the built environment cannot rely on technology alone as a solution for ageing. Keeping one connected to their environment and has real relationships with people, and not relying solely on “cyber communication” is an important aspect of positive ageing. Technology will allow for people to rely less on others; however there is still a need for people to physically interact with their surrounding environment. Designing for a society of all ages with the support of technology allows for people to remain independent longer.

2.3 Current Elderly Facilities

North America separates its senior housing models into two separate classifications: institutional and independent housing. If a person falls between these two categories or if a spouse is in a different category, there is a lack of suitable options. This separation causes seniors to move from space to space, facility to facility, depending on the level of care needed. The average length of stay in a retirement home is three to four years before moving to assisted living (Richardson, 2010). Furthermore, the average length of stay in an assisted living facility is two years (Novak, 2009, 330). Seniors prefer to age in place and not move when more care is needed; therefore, current housing models need to be adapted to allow people to remain in their homes as they require more care.

Current senior housing facilities are divided into institutional and dependent models. The list below identifies the current housing models that are available today. Each model offers positive and negative traits that are valued at different levels for each resident dependent on their abilities. However, as levels of health constantly change, so do the living environments of the elderly and their surrounding community. It becomes even more of a challenge for couples and friends that would like to age together but have different health problems. Many options are out there though most are not suitable for the future elderly population. They prefer not to live in 'grey ghettos' and would rather age in place and continue living as they did when they were younger.

In recent decades, the direct impact of design on the ageing has become more widely recognized by both the general public and design professionals. Prior to this time, the frail and elderly who could no longer live in their own homes had few, if any, good alternatives (Perkins, Hogund, Kin, & Cohen, 2003, 3). "By 1980, there was a growing demand for more attractive operations that would meet health and support within more residential settings. Lifestyle options for retirement have had to adapt to a changing clientele who are older with more needs but expect higher-quality housing and activities than even a decade ago" (Perkins, Hogund, Kin, & Cohen, 2003, 4). The future of elderly facilities will once again change with the ageing Baby Boomer generation, thus current senior housing models will need to adapt.

Senior Housing Models:

Independent Housing:

Ageing in Place: Ageing in place refers to the ability to remain in a home even as more assistance is needed. Currently ageing in place elderly, rely mostly on the assistance from family members, formal care workers such as nurses, and the help of friends and their community. There are services that have been developed to aid in the ability to remain at home including meal delivery services, technological advances and transportation services. Ageing in place is the desire of the majority of the elderly community but can be difficult without a supportive community and financial capabilities.

Active Adult Community Centres and Senior Apartments: Active Adult Community Centres (AACC) are typically larger rental, condo, coop, or single-family homes that do not offer services in home

healthcare. They are independent living conditions for seniors fifty-five years and older that offer services with lifestyle amenities such as golf courses, club houses and walking trails that appeal to senior home owners. Residents of AACC live in a variety of apartment sizes from studios to large two-bedroom units. While the majority of retirement communities cater to individual residents, more and more communities are designing larger apartments and town homes for retiring couples (Nursing Homes and Senior Living, 2010; Nursing Homes and Senior Living, 2010). Senior apartments are typically lower-income rental housing and are characteristically larger multi-unit facilities.

Independent Living Facilities (ILF): ILF offer a multi-family design to less active seniors requiring extra help in housekeeping. These facilities are also typically rental properties and similar to senior apartments; however, offers additional services such as housekeeping, transportation, meals and organized group activities. Usually, these ILF are more expensive than typical Active Adult Community Centres and Senior Apartments due to the amenities offered.

Institutional Care:

Assisted Living Facilities (ALF): These are designed to cater to individuals who need assistance with daily activities. They are multi-family properties with personalized support for daily activities; however, they do not require nursing care. The units and common areas are designed for a large amount of support staff while still providing independent characteristics of a residential apartment. Typically, ALF provide a lower cost alternative to in-home care. ALF often specialize in particular resident needs such as diabetes, memory care, residents with special diets, residents who speak a particular language, residents of a particular religion or cultural background, as well as other needs.

Skilled Nursing Facilities (SNF): These provide the highest level of care in a hospital-like environment. In return, to the amount of care, it is the most expensive type of senior housing. Many SNF focus on rehabilitation therapy for post-hospitalization; therefore, they typically require state licenses. Government and Medicare cover a portion of these expenses, which reimburse partial cost for these facilities. Today in the United States, there are over 16,000 nursing homes (Novak, 2009).

Both Institutional and Independent Living models:

Continuing Care Retirement Communities (CCRC): These combine attractive residential living designed with high levels of service designed to address the comfort, wellness, security and developing needs for seniors. It offers comprehensive continuing care and is regulated by skilled nursing as well as independent living amenities. Residents of CCRC can obtain medical care onsite. Many of the CCRC are affiliated with not-for-profits or religious organizations. These are less popular due to the cost to build from the regulatory process and time intensity to develop. It is the smallest segment of Senior Housing due to its high operating and building costs.

These housing models are becoming increasingly outdated. Baby Boomers are upsetting the spectrum of housing elderly residential models once again as they look for options for their parents as well as their vision for their own later life (Perkins, Hogund, Kin, & Cohen, 2003, 3) Today's only alternative — independent living versus retirement home — can no longer serve as a model for the future. "New lifestyles are thus less a phenomenon of the young, despite the impression imparted

by the site-style-adoring media, so tailored to a young audience, while on the contrary, they are a phenomenon of the elderly” (Ebner, 2007, 12).

While older people want to remain connected to the wider community, others are choosing exclusive and exclusionary housing arrangements (Ageing, 2000, 50). The OECD (The Organization of Economic Co-ordination and Development) at their conference on “Ageing, Housing and Urban Development” states that the only solution for the difficulties due to the large ageing population is that exclusionary elderly housing models will need to be reconsidered. Furthermore, the conference concluded that, cities should avoid “luxury geriatric parks” that sideline older people from urban life to the detriment of all. Housing provisions should aim to meet heterogeneous needs that represent “communities of interest” around ethnicity, occupation, and cultural values and preferences, and promote social mix and diversity. The conclusion is the need to avoid further segregation of older people using comprehensive strategic approaches aimed at achieving consistency and social inclusion from the level of the separate dwelling to the urban region. There was an agreed need to shift away from large-scale institutional care and an increasing need for small-scale housing at least some of which should be integrated into the urban fabric. Generally, care should come to people rather than people having to move to care (Ageing, 2000, 50).

Interviews with gerontology professor Pria Nippak, Developer Paul Richardson from Diversacare, as well as developer Even Miller from Spectrum REIT, aided to provide understanding of diverse perceptions of senior living. Figure 8 describes the conclusions reached based on the topics discussed with each interview. These conclusions provide comprehension to the initiatives that are currently evaluated for the development of future elderly home models as well as the preferred models based on a perspective of gerontology rather than building. Further details are available in Appendix 1.

Topics Discussed	Conclusion
Healthcare	<ul style="list-style-type: none"> - There are many difficulties providing healthcare for the diverse needs of the elderly - Everyone has different needs - No one wants an institutional living environment - Discreet care desired - Cost of institutional care is expensive - People's needs for care continuously evolve and change requiring different levels at different intervals
Economics	<ul style="list-style-type: none"> - The cost of care as you age is expensive - There is a separation of classes between wealthier private care ageing and people who can not afford any type of extended care - The future of ageing is through independent care on an as needed bases rather than institutional aid
Community	<ul style="list-style-type: none"> - Transportation is a key issue with the ageing and losing independence - Continuing contact with the community and relationships promotes quality in ageing - One of the benefits of a seniors home is to create a community setting - Religion is important as people age - Urban environments are easier to offer more community links
Independence	<ul style="list-style-type: none"> - Independence is closely related to safety and security - Freedom to make decisions and to have decisions to make is independence
Work	<ul style="list-style-type: none"> - People will continue to work well into old age, even as they need higher levels of care
Diversity	<ul style="list-style-type: none"> - People prefer to remain surrounded by people they feel comfortable around - It will continue to be a challenge to remove segregated communities regardless of diversity
Ageing in Place	<ul style="list-style-type: none"> - Developers believe people should age in "their" places - There is a need for an alternative to prevent people from moving from place to place as they need more care
Religion	<ul style="list-style-type: none"> - Religion is still an important factor in society even though the Baby Boomers are more separated from religion than previous generations
Ideal dream scenario for seniors	<ul style="list-style-type: none"> - Provide a large range of care in a non invasive way - Connection to the community and shared services - Allow people to age in place and not have to move for more care - Live independently in an environment where there is access to healthcare in an integrated way - Transportation is one of the important considerations of ageing - FUN! Make it fun and attractive for people to want to go to a seniors facility, otherwise they will not go
Future needs of the Baby Boomers	<ul style="list-style-type: none"> - More choices - More Independence - Ageing in Place
Developments for an increased population	<ul style="list-style-type: none"> - Different options for Diverse people
Differences in building from past to present	<ul style="list-style-type: none"> - Institutional to a homelike setting

Figure 8: Interview Conclusions

(Nippak, 2010; Miller, 2010; Richardson, 2010)

	Independence		Community		Healthcare		Work	
	Idea	Why	Idea	Why	Idea	Why	Idea	Why
Strategy	To design a solution for seniors to live independently while still receiving the support they require as they age. Providing a way to live independently for as long as possible in order to reduce economic and social burdens.	<ul style="list-style-type: none"> - 46% of Boomers ages 50-59 would like to stay in their current residence; 62% between the ages of 60-69 prefer to stay in their homes. The numbers are expected to grow as Boomers grown older and find their desired home to age in. (Rosenfeld) - 13% of seniors live with other family members (Rosenfeld) - Assisted Living is largely unaffordable for moderate and low income older people. 2/3 older persons could not afford even the most common monthly price of assisted living. (i.e. almost \$19,000 a year),or the most common monthly rate in even the low privacy/low service facilities (i.e. \$16,500)." (SeniorCareCanada.com) - Baby Boomers are in denial about their ageing and will continue to act independently when they will need support being more prone to accidents 	To create a place for social interactions for elderly as they become less independent. Design a facility that will allow seniors to receive the care they require within their desired community and not have to move to another network for those services. Shared amenity spaces between the community and seniors will allow for lower cost of living, interactions with the community, and increase in the quality and amount of spaces provided.	<ul style="list-style-type: none"> - Depression is found in 1/3 of nursing home residents. (International Journal of Geriatric Psychiatry) Social isolation is one of the leading causes of depression of the elderly. - 3/4 people 55 and older say they never expect to move (Novak) - The strongest predictor of quality of life was family contact and participation in social activities. (The Gerontologist:1999, vol. 39. No. 4 pp450) 	The increased amount of seniors in the next few decades will require alternatives to healthcare. There is a need to provide healthcare for larger numbers as well as people who do not believe they require medical assistance.	<ul style="list-style-type: none"> - Canada is planning on decreasing its reliance on nursing homes and increase support for other supportive housing options. (Gaudet) - With the number of people entering their senior years, healthcare must grow and transform in order to aid growing population with daily activities. - Alzheimer's is projected to strike 1/8 Baby Boomers, it also suggests the amount of time Canadians spend caring for parents and spouses with dementia will triple in the next three decades, to 756 million hours a year. (Duffy, Canada.com) 	To allow for retirees to gain financial independence by supporting themselves through working flexible hours and work locations without compromising the value of office production. Providing the utilities required to facilitate a career close to home. This allows for the new retirement standard with a balance of work and play.	<ul style="list-style-type: none"> - 18% of older Baby Boomers are not doing anything this year to secure their financial future compared to 11% of younger boomers. (Merrill Lynch) - Boomer are expecting to spend a significant part of their retirement working. (Merrill Lynch) - Baby Boomers are projected to live more than a decade longer than there parents.
Tactic	<ul style="list-style-type: none"> - Pedestrian friendly connections with readable signs for elderly to independently walk to the site - Universal Design for the facilities - Drop off areas for shuttles and carpools providing alternatives and selection of transportation alternatives that are easily accessible. 	<ul style="list-style-type: none"> - Design a facility that seniors can come do during the day to do their errands and appointments that can allow for them to live longer independently. - A facility that keep allow for seniors to act independently and monitor them to insure their health and safety. - The location should be somewhere close enough to walk to or a quick drive/shuttle. - Allow seniors to age in place while still receiving a balance of both their personal needs as well as their healthcare needs without interrupting their lifestyle. 	<ul style="list-style-type: none"> - Public Park - Gym/ workout facility - Amenity space for public meetings - Mixed-use spaces such as coffee shop, cafes, work space - Using clusters to create small communities within the space for the assisted living. - Display areas for artwork - Living facility that can be transformed for diverse cultural identity. - Office uses to bring people to the site from within the community 	<ul style="list-style-type: none"> - Provide spaces for ageing within the community that will also attract all ages. healthcare, work - Design a place for assisted living within the community. - Prevent independent seniors from living in isolation by designing an accessible place for people to interact. - Create a place for Seniors to entertain their children and grandchildren while living in assisted living. - To showcase the diverse cultures living within the area to create a sense of identity. 	<ul style="list-style-type: none"> - Appropriate medical facilities for seniors - Dementia and Alzheimer's offices - Winding paths and gardens for Dementia patients - Rehabilitation centre - Assisted living facilities for those who can not live independently anymore - Nursing and Doctors staff offices - Accessible for emergency vehicles - Relatable architecture 	<ul style="list-style-type: none"> - Dementia and Alzheimer's patients will require a different type of extensive care then other seniors. - Helping seniors relax in a non intimidating, easily navigable, relaxing environment makes seniors feel secure and increase their abilities and reducing their need for healthcare. - Architecture that is relatable to seniors aids in bringing back memory loss - Nurses require their own spaces to serve as a hub for community health specialists available 24-7. - Seniors will require a variety of medical services ranging from chiropractic, cardiac, arthritis, rehabilitation and family doctors. 	<ul style="list-style-type: none"> - Technology used in offices - Spaces for Telecommuters to work - Meeting rooms - Video conference rooms - Acoustics to keep a quiet environment - Lecture spaces - Technology rentals such as computers, projectors, scanners, etc. - Technology Help center - Comfortable and various seating arrangements for seniors as well as non-seniors - Places for people to socially interact and ask for advice 	<ul style="list-style-type: none"> - Boomers are projected to have a new type of retirement with flexible schedules as well as working at home. - Future trends in telecommuting as well as following in the steps of the boomers mean increased people working from mobile offices. - Provide a variety of services that will enhance work production - Lectures and classes on new business information, technology, and seminars to keep people updated - provide technology services that would otherwise not be accessible toe people working at home due to financial or space reasons.

Table 6: Strategy and Tactics

Although there are a variety of housing options available for the different types of care needed as one ages, people prefer to age in place within their own homes. Eighty-three percent of seniors prefer to stay in their homes and age in place (Rosenfeld & Chapman, 2008, 18). This number is expected to grow with the next generation of elders due to their denial of ageing and decline of the retirement phase. In Canada, a major focus of public policy is to respect and support most seniors to remain in their present home as long as possible through measures such as income support (Ageing, Housing and Urban Development, 2000, 40). The government finds it more cost efficient and beneficial to provide at-home care rather than institutional care. The current housing models do not allow people to age in place but rather, they force people to move to receive additional care. These housing models are becoming a less desired option for the ageing with more people ageing in place. North America must adapt a new facility that caters to the independent of the elderly, specifically designed for the future elderly cohort while allowing them to age in place.

The conclusion drawn from the chapter, A Case for Alternative, was the fundamental importance of the encouragement mutual support and care through a strengthening of community. Based on the research provided, Table 7 illustrates the initial tactics and strategies from the preliminary gerontology research. It is important to allow for elderly to age within their communities and remain active parts of society, otherwise we would continue to build the same type of 'grey ghettos' that already exist. Cities should not be built of independent buildings that separate the elderly from their surroundings but rather, one that incorporate the elderly into the fabric of their already existing environments. The community network will play a more important role in the future with the increased reliance on informal healthcare as well as from the changes in the dependency ratio. More people will rely on the relationships they create within their local community setting; therefore, communities need to be designed for all generations to interact and build relationships regardless of age.

There is a need to re-evaluate the way one designs, allowing for all generations to interact within the community, creating a society for all ages. "The future needs to be designed where it is a utopia in which the "other" and the "alien" are seen not as a threat, but rather as a benefit, and where monostructural concepts like race, class or the dichotomies of sex are finally abandoned in favour of real diversity in our society" (Ebner, 2007, 12). It is important to avoid creating dedicated areas for older people that are too exclusionary. Cities need to be places where all kinds of people can meet and interact. Sharing and exchange are vital to mutual empowerment and acculturation. For many years, the alternative to independent living was either institution or family care at home (Ageing, 2000).

The strategy to move forward must be to enable older people to continue to live independently for as long as possible. They must also participate in the community to make use of care and support only where absolutely necessary. In order to foster self-organized arrangements and integrate forms of mutual assistance, it will be necessary to develop a variety of different offerings so that people with different needs can find suitable options. In northern European countries that already have a large elderly population, there is a reliance on different types of community care rather than the North American institutional model. European housing experiments provide new models that address affordability, resident satisfaction and community. Their premise is that housing does not need to separate the elderly from society. The elderly can remain valuable parts of the community instead of separating them into seniors only housing. The focus is on strengthening communities by

supporting ageing in place, fostering connections to the wider community and engaging residents in informal networks for friendship and mutual help (Fromm, 2003).

This thesis now situates itself as proposing an alternative strategy for the senior housing model that is appropriate to the demographic of the ageing Baby Boomer. It investigates how architecture can provide a platform for social connection within a community and residential facility that allows in equal measure both independence without isolation, and informal community with safety and security.

3.0 INTEGRATED ARCHITECTURE

3.1 Case Studies

“Canada is still one of the youngest countries in the G8” (CBC News, 2007). There are many values one can learn from countries that are already dealing with an ageing society. Canada should look to the examples in Europe where solutions have been made to allow for ageing at home to take place. This can be done through the built environment, making it possible for seniors to remain in the community and participate in the urban network. Urban governance should encourage intergenerational approaches and family ties so that wherever they live older people feel that they are respected and useful. Local initiatives should allow different generations to mingle, in education, in the neighbourhood and in the city to cement bonds between generations (Ageing, Housing and Urban Development, 2000, 51).

One can only speculate about the future desires of the ageing Baby Boomers. An examination of Canadian and European projects that deal with the notions of “community” and “ageing” can help contextualize a strategy used for the design project by extrapolating specific traits to integrate a senior’s facility into the community fabric. The case studies are broken down into two categories: 1) Those that are isolated only to senior housing but are successfully incorporated into the community fabric, and 2) Multigenerational and community housing whose architectural design is based on the concept of social integration. The case studies are crucial to understanding how different architectural designs can create a setting that allows for independent ageing within a community setting.

Many overlapping similarities between the different housing projects were identified while analyzing the case studies. Each case study was evaluated based on its design of the entrances and foyer, open space or public space, community gathering areas, as well as circulation. This gives a clear understanding to the unique characteristics that are used to create spaces that are designed to build relationships within a society of all ages.

3.1.1 Senior Housing

Looking into examples from northern Europe, one of the more popular ideas is to untie housing from services. There is no need to have them under the same roof; services can come to the home or be available in a nearby centre. Swedish municipalities provide home help that includes accident protection assistance available to the neighbouring areas. Furthermore, “northern European government studies show that the cost of staying at home to be half of an institutional setting” (Fromm, 2003). Learning from European countries that have positive returns in options for servicing an elderly community that prefers to age in place can provide knowledge toward an alternative solution for Canada.

3.1.2 Rock ‘n’ Roll Apartments, 2006

Plussenbergh, Netherlands

Architect: Arons en Gelorff

Arons en Gelorff won a design competition where he had to design adult apartments while still preserving the view of a canal from the pre-existing nursing home. The building was part of a government subsidized Rotterdam Senior Citizens development that was designed and built specifically for the Baby Boomers. The building design embraces the “Protest Generation,” as the Europeans call them, and their denial about ageing. “Think about Keith Richards falling out of a palm tree,” Arons en Gelorff says with amusement. “That’s the generation we built this for.” This project proves the point that the Baby Boomer generation requires a new approach to senior housing that represents their character.

The building has two main volumes with a 9.6m span that allows for flexible design of its 104 universally designed units. One horizontal element of the building is an elevated slab, raised 11m over the water in order to preserve the views of the nursing home. The other section is a tower that is decorated with panels of colour glass pixelated to depict upon close examination a women’s bikini top. The apartment building connects to the nursing home through an inconspicuous elevator shaft that brings residents down who require medical aid, dining or therapy. Connecting all the parts of the senior residence together is a lavish garden, exterior courtyard and walking trails concentrated around the buildings as well as the canal.

Rock ‘n’ Roll Apartments is an example of a seniors’ facility built directly for the Baby Boomer generation. Its modern, fun and unique architecture lends its way to conquer a more difficult task of having Baby Boomers age in place while unobtrusively providing the care they need.

Figure: 9 Rock 'N' Roll Apartments

(Easing into retirement housing, 2010)

Figure 10: Rock 'N' Roll Apartment Study

3.1.3 Humanitas-Berweg

Rotterdam, Holland

Developer: Humanitas

The concept of the Berweg facility utilizes the “Apartments for Life” concept the Netherlands used for senior facilities. The idea is there is an apartment building that can increase its service to a nursing home level as the residents require it. The sixty nursing home apartments, and the 180 lifetime apartments, are built over an ambulatory healthcare facility. The homes are not restricted to the fifty-five and older crowd; rather, they welcome senior residents to invite family members, a younger spouse and pets to stay with them in order to give a more personal and home-like experience.

The healthcare facility caters to the residents and community, providing a range of rehabilitation, dental offices and therapies along with a day care facility for the elderly. The healthcare offices are

situated to allow pedestrians to access the offices from the street and invite them into the complex. Connecting this facility to the apartments is an atrium space with a 20,000 sq.ft. shopping mall, which is the centre for activity. The landscaped atrium invites the community to share the space with retail amenities including restaurants, hairdresser salon, kiosks and stores. Many apartment units have circulation balconies and entryways that face into the interior courtyard space.

The Berweg facility carefully combines healthcare, apartments, as well as amenities that are available for its residents as well as the neighbouring community. Although there is a clear separation within the building, it provides a way for independent and dependent people to acquire the amount of service they need and the ability to increase this service at any time. For example, dementia patients can live at home in their apartments and enjoy an adult care centre during the day. The balance of healthcare, independence and community present an alternative to a typical senior home.

Figure 11: Hunanitas Berweg study

3.1.4 Im Der Wiesen Generation Housing

Vienna, Austria

Architect: Ullman and Peter Ebner

Recent experiments mixing housing types, ownerships, rentals and ages are used as a solution to Austria's ageing population. Im Der Wiesen Generation Housing embodies the main concept for this housing, integrating shopping, housing and working to create a community focal point. The ground level contains shops and an assisted living office, which are available to residents as well as the rest of the neighbourhood. The community is welcomed into the large courtyard space to participate in many of the activities on site from exercise classes, youth groups, health information and day care. A Red Cross medical centre is available for anyone who needs help, making it easier for the

elderly to age independently with assistance available when they need it. This healthcare service provides aid to the residents as well as the surrounding community. The building also contains a variety of housing types: thirty handicapped accessible units for seniors with low windows, twelve mini-lofts for young people, six maisonettes and thirty-nine apartments. Circulation throughout the building views onto the interior courtyard allow residents to view the activities within the atrium.

The combination of ages and functions brings all types of people to the facility to interact with each other around the centralized courtyard. Examples of intergenerational relationships and community development from this facility can be learned from this study, as well as how one site can serve as a hub for community development.

Figure 12: Im Der Wiesen

(Fromm, 2003)

Figure 13: Im Der Wiesen Study

3.2 Intergenerational Housing

With many mothers now absent from home, it is regrettable that the family is so weakly connected to the other people in the neighbourhood. “Where third places exist within residential neighbourhoods, and are claimed by all, they remain among the very few places where generations can still enjoy one another’s company” (Oldenburg, 1999, xx). Communities can facilitate multi-generational relationships, both within neighbourhoods and between special interest groups. Though undergoing change, the neighbourhood community is usually age-integrated, making interactions between its younger and older members a matter of daily routine. Communities of special interest, such as organizations of elders or youth, can establish new relationships in addressing community concerns such as safety, environmental protection, cultural enrichment, income-generation and others. Communities can also facilitate communications between younger and older generations, particularly in the exchange of new and old technologies and new and traditional lifestyles (Nations, 2007). In Germany, where 20% of the population is currently over sixty-five, multi-generational neighbourhood centres called “mehregenerationenhauser” combine the services of a senior centre, youth group, health clinic and pre-school, promoting ageing in place and intergenerational support. Multi-generational housing villages are growing in popularity in northern Europe where there is already a significant amount of elderly people (Fromm, 2003).

Intergenerational housing falls under Peter Ebner's concept of integrated living, which is to encourage different groups of people who can mutually support each other to live together. The long-acknowledged desire to live in a residential environment that allows in equal measure both independence without isolation and informal community with safety and security is shared by the elderly and the disabled with other groups of residents; for instance, single parents or parents of large families. (Ebner, 2007, 12)

3.2.1 City Loggia

Stuttgart, Germany

Architect: Kohlhoff and Kohlhoff

Located in one of Stuttgart’s most densely populated areas, this multigenerational community has a green space in the midst of urban development. Apart from an advisory centre and public café, a child care centre and apartments for seniors have been incorporated into this scheme, with the goal of enhancing interaction between the various user groups and counteract social isolation (Schittich, 2007, 33). Marking the entrance to the multigenerational building is a “city loggia,” while the glazed portico leads into the open foyer. From the foyer, there are visual connections with both the upper levels and the garden, thus revealing the transparency of the building. The public spaces — café, advisory centre and event spaces — are all located on the ground floor (Schittich, 2007, 33). The first floor is given over to a child care centre that caters to over 120 children. Each unit benefits from full access to the garden. This unique intergenerational response to an urban environment connects the community to the site through the green space and diverse building program.

Figure 14: City Loggia Intergenerational Housing

Figure 15: City Loggia Study

3.2.2 Miss Sargafabrik

Vienna

Architect: BKK-3

Miss Sargabrik, in its bright orange facade, brings together a large range of people in a socially integrated community. The building houses traditional family units, single parents, singles, young people, retirees, refugees and people with various disabilities. There is a combination of single-storey wheelchair-friendly units, marionettes and larger dwellings that are situated on the top three stories of the building. Internal ramps and stairs connect the various floors thereby allowing for even the smallest spaces to benefit from interesting spatial sequences (Schittich, 2007, 26).

Design features of the multigenerational housing project promote a focus on the community relationships. Although apartments do not have private balconies, they are interconnected by communal access balconies, which can also function as outdoor seating where areas are widened. Communal facilities further assist in enhancing communication — a library, media room, laundry and club room for the younger generations. The ground floor has several home offices on the lower floor of the larger housing units, creating a live/work environment (Schittich, 2007, 26). The unique design in the centre of downtown Vienna combines interesting architecture with community support.

Figure 16: Miss Sargafabrik Public Space

Left: Figure 17: Miss Sargafabrik Interaction within Space

(BKK-3)

Figure 18: Miss Sargafabrik Study

3.2.3 Mirador

Sanchinarro, Spain

Architect: MVRDV

Located outside of Madrid, the twenty-two-storey building tower was designed with the concept of containing nine 'neighbourhoods' within one vertical tower. Each neighbourhood contains groups of similar dwellings — duplex, triplex, with or without solarium, etc. — that are arranged to make up a larger autonomous unit. These smaller units are seen both on the exterior and the interior of the volume of the building expressing itself in the facade of the building. The colour and materials as well as the modulation and composition of the windows identify each one of these 'communities.' The slits in between the blocks act as access zones; they are conceived as small vertical streets along which the housing typologies transform to form small suburbs; these alleyways lead to a vertical sequencing of stairs, halls, platforms and streets, creating a vertical neighbourhood (Maas, 2006, 145). The main social space designed is a large raised plaza of the Mirador, which is located on the twelfth floor offering views of the city.

Although the project has a unique approach to creating a sense of a different community in a vertical setting, the building lacks any connection to the surrounding neighbourhoods outside of the site. The experience of artificial urban living is all but interiorized within a single building shell. The idea of a social network and community spaces can aid to provide an example of how to use connectivity for the elderly and the rest of the community through social spaces. Although it is not a seniors home, the idea of social connectivity through design can aid to develop a building for the ageing population

Figure 19: Mirador Study

Figure adapted from (Zahedi, 2009)

Right: Figure 20: Mirador Interior Circulation Spaces

Left: Figure 21: Raised Plaza of the Mirador

(Zanchi, 2005)

3.2.4 The New College Student Residence

Saucier + Perrotte

Toronto, Ontario

The new college residence at the University of Toronto was designed “in the spirit of communal interaction, attempting to transcend a type that has become mechanically utilitarian in recent manifestations” (Kapusta, 2001, 24). The main circulation of the building is centralized by hanging gardens, which link stairs that run through the centre of the building core. Two more gardens relate to the street, the laneway from the second-floor garden and the fifth-floor garden to Spadina Avenue.

With a focus on the circulation of the building, the design creates a three-dimensional matrix both horizontally and vertically within the building. The conceptual organizational framework can inform strategies for designing a space for an ageing population through spatial connectivity. The student residence focuses on the idea of community and interdependence which can aid to inform strategies for a model for a seniors’ facility.

Figure 22: Second-floor Garden Space NCSR

(Saieh, 2005)

Figure 23: Vertical and Horizontal Connectivity Sketch NCSR
(Saieh, 2005)

- Foyer
- Atrium / Garden / Plaza
- Circulation
- Social Space / Retail / Shops
- Health Care

Figure 24 New Student Residence Study

3.3 Socio-Spatial Qualities

All of the case studies mentioned vary in the amount and type of community and social space they provide and how those spaces connect to the surrounding environments. Further research, is now needed to understand how to make successful spaces for social integration.

Third spaces are considered to be the places visited between work and home, the place to go for desired interaction. Among the noblest of third-place functions, rarely realized anywhere anymore is bringing the youth and adults together in relaxed enjoyment (Oldenburg, 1999, xxi). However, for the elderly when there is a missing space, work, a third place will provide a means for retired people to remain in contact with those still working, and in best instances, for the oldest generation to associate with the youngest (Oldenburg, 1999, xxi). Third places occur organically, however, creating a successful place where intergenerational exchanges can occur will be a valuable part of designing a place for the elderly. When these social exchanges occur, it can be considered a third place.

When designing third places, one cannot look solely to the building itself but rather to the relationship to the community as a whole. "Third places thrive best in local community, where walking takes people to more destinations than does the automobile, and where the interesting diversity of the neighbourhood reduces one's reliance on television" (Oldenburg, 1999, 210). In these habitats, the street is an extension of the home. Attachment to the area and the sense of place that it imparts expand with the individual's walking familiarity with it. In such locales, parents and their children range freely. The streets are not only safe, but they invite human connection (Oldenburg, 1999, 210). The physical form of urban environments does not exist in isolation. People influence and are influenced by their environment; therefore, environments can be more than a stage for people to play out complex and interrelated activities of life: they can enrich these activities and people's experience of them (Lewis, 2005, xv). The creation of an environment that allows for the elderly to interact with all ages in a safe environment and enables them to function as independently as possible is the key to success for this thesis.

How can we build an environment that successfully integrates the elderly with the rest of the community?

In the end, the question of place hinges on the relationship between spatiality and sociality (Dovey, 2009). Sociability can be used qualitatively to evaluate a space. A social place is one where people want to go to observe the passing scene, meet friends and celebrate interaction with a wide range of people that are different from themselves (Project for Public Spaces, 2008, 7). Sociability might also be addressed when looking at specific functions for programs. Creating activities involves multiple people working together, while sociability is when people share and are involved in meaningful interactions.

Third places must attract people into the spaces in order to become successful. Once people occupy the space, the next step is to have a place where people have mutual activities to share experiences together. It is clear that in today's world, community is neither easily designed nor necessarily place-based, but rather by actions of people over time. What inspires people to join

together seems to be mutual interests rather than geographic location (Lewis, 2005, 40). Places, however, can be built, and it is the role of designers to ensure that these places are not designed for single communities but encourage neighbourliness and support (Lewis, 2005, 42). Bringing these interests together in a way that fosters people to feel comfortable and participate within a space is the ideal third space that needs to be created.

Figure 25: Four Key Qualities of a Successful Place

The goal is to create a space that is designed to build these relationships. As Jane Jacobs says, “You can’t make people use streets they have no reason to use, you can’t make people watch streets they do not want to watch” (Jacobs, 1992, 36). People will not interact when they don’t have a reason to communicate. Using this concept of third place and sociability, the development of several design elements taken from urban design features that specifically relate to sociability are identified below. The following set of architectural design elements are partially extrapolated from a combination of sources. Books written by Jane Jacobs and Jan Gehl provide explanation to principles of urban design and ways to create a social syntax within the larger urban framework. On a smaller scale, Kim Dovey and Sally Lewis give insight to elements needed at an architectural level and the spatial movements within a building. A combination of these resources as well as the projects examined earlier result in the pragmatic synthesis of design elements mentioned below. These elements can be used when designing for third spaces to support intergenerational relationships.

1. Conviviality.
2. Transitioning.
3. Reasonable density at a pedestrian scale.
4. Areas of interaction and repose.

3.3.1 Conviviality

Conviviality is important to creating a place where people would like to visit, a safe and inviting environment. The basic requisite for such surveillance is a substantial quality of retail and other public spaces that are used in the evening and night. First, they give people — both residents and strangers — concrete reasons to use the sidewalks on which these enterprises face. Second, they draw people along the sidewalks past places that have no attractions to public use in themselves, which become traveled (Jacobs, 1992, 36). Lastly, the activity generated by people on errands, or people aiming for food or drink, is itself an attraction to other people. People need to have a reason to visit the site and feel comfortable entering when they might not have a specific purpose for coming. The developed welcoming environment should serve as an icebreaker to develop comfort and familiarity within the facility.

The design of the building must attract people to the site. The entrances to the building are part of the public spaces because it is seen by the overall community. This is the first transitioning space from public to private. Entrances from semi public to spaces within the building are also important transition points and the fronts act as a front yard or area to interact with people before entering the program itself. Conviviality occurs when everyone, all ages, feel welcome and comfortable within the site.

Producing an urban design strategy and developing new buildings with public realms clearly requires considerable organizational, financial, and professional resources from the community (Sin, 2008, 62). But when a building is designed correctly to provide conviviality from the community and through the site, one can begin to provide a positive third place.

Places with a positive physical environment allow for visitors to come who do not necessarily have a specific activity to do. Rather, they come to the site for both the optional and social activities available within a convivial environment. Retired elderly have more time available for leisure, and they need a large array of optional and social activities to keep them entertained throughout the day. Therefore, careful consideration of a welcoming environment must be designed.

Figure 26: Physical Environment and Activity Participation

(Gehl, 2008, 21)

3.3.2 Transitioning

Architecture is about creating a place and the context that place has within the overall framework of the locale. A successful cohesive design between the site and its surroundings can impact the success of the building, especially when it relates to community involvement. Transitioning from public to private, from the site to inside the building and from space to space within the structure means allowing for fluidity to occur around and inside the spaces.

"First, there must be a clear demarcation between what is public space and what is private space. Public space and private spaces cannot ooze into each other as they do typically in suburban settings or in projects (Jacobs, 1992, 34). There needs to be a barrier area or transition in between public and private zones; a positive distinction between public and private space (Lewis, 2005, 42). "When talking about place-making, it is acceptable to limit options about the way buildings and space relate to each other in order to create a safe and attractive place. It is, however, less reasonable to be deterministic about the style and architectural expression. Too much prescription leads to sterility and a lack of variety and 'quirk' that makes our most appreciated places what they are" (Lewis, 2005, xvi). This architectural expression mentioned by Lewis and the distinction of spaces explained by Jacobs will aid to benefit the quality of social spaces throughout the site. This transition from private to public can serve to make a positive space for interactions.

This transition is defined as a soft edge, and is a smooth transition between public and private areas (Gehl, 2008, 115). Permeability from the edge, distinguishing between public and private, encourages the flow of the site and the way people move and interact between spaces. Visitors can experience the site not by the program but through the spaces between the building programs. "Circulation is not just moving from point "a" to point "b," but the occurrences and situations that are encountered along the path. A space becomes a place when spatial solutions affect social action by setting constraints, providing opportunities and fostering activities" (Lewis, 2005, 28). By making the circulation spaces the ideal spaces for interaction, one will not have to have a specific purpose to come to the building. Visitors can move throughout the building, developing relationships with other members of the community, in an informal environment. Transition spaces can serve as these ideal places for interaction.

3.3.3 Reasonable Density at a Pedestrian Scale

Allowing for functions to work together that are accessible to all ages increases the potential for intergeneration exchanges. Several factors can achieve this arrangement based on case studies and urban guidelines. First is a series of pedestrian paths and squares in diverse scales for different groupings of intimate people. Second are specific transitioning zones that allow for areas of informal gathering. Also, each scale of the site should respond to the specific function and transition zone it is occupying. Therefore, safety and comfort will provide for a desired space. Lastly, within the overall landscape of the site, the building needs to reflect the residential scale of the neighbourhood keeping with the rhythm of the streets.

Every space must be designed with the appropriate scale, design, and daylight to make a place where people would want to live. Third places must adhere to the familiar criteria of existing culture of the twenty-first century. A welcoming friendly environment should comfortably accommodate patrons when they are free from work, school, and home (Sin, 2008, 80).

Figure 27 diagrams how different paths can assemble visitors while others disperse. Careful considerations of spatial spaces must be evaluated in order to create spaces that gather visitors rather than reflect people to the spaces. It is important to enhance a visitor's experience along a given path. Seen in the diagram, it is important to create an environment where people can have their choice of options of spaces. A variety of spaces, private, public, semi-private, social, and segregated, in order for visitors to find the spaces they are looking for. Each space must be designed appropriately depending on the specific use of the space.

Figure 27: To Assemble or Disperse

(Gehl, 2008, 233)

3.3.4 The Generators of Diversity

The goal of the third place is to design a situation where diverse people can come and interact with each other in a comfortable environment. Diversity of people can only be brought from building programs that incorporate different ages, and people to interact with each other. The great urbanist Jane Jacobs was among the first to identify cities diverse economic and social structures as the true engines of growth. Jacobs argued that the jostling of many different professions and different types of people, all in a dense environment, is essential spur to innovation — to the creation of things that are truly new. This innovation, in the long run, is what keeps cities vital and relevant (Florida, 2009). Jacobs describes the four conditions that are indispensable for diversity in a city's streets and districts, which can also be used and referred to when designing a single building

1. The district, and indeed as many of its internal parts as possible, must serve more than one primary function; preferably more than two. These must ensure the presence of people who go outdoors on different schedules and are in the place for different purposes, but who are able to use many facilities in common.
2. Most blocks must be short; that is, streets and opportunities to turn corners must be frequent.

3. The district must mingle buildings that vary in age and condition, including a good proportion of old ones so that they vary in the economic yield they must produce. This mingling must be fairly close-grained.

4. There must be a sufficiently dense concentration of people, for whatever purposes they may be there (Jacobs, 1992, 36).

A building designed for a diverse mix of people has the same four characteristics to building diversity within a city. It must serve a variety of programs and people, as well as easily visible change in building structure, representing the different activities that are occurring simultaneously. The building must also provide different perspectives and arrangements of architecture to mingle the varied programs. Lastly, concentrations of people to the site must be created by providing diversity through a mixed-use environment and mixing of regular residents and visitors. This, in turn, allows for the site to remain active when it would otherwise remain closed. Designing the building with a variety of programs that invite a mix of people will bring a mix of generations, cultures, and range of activities to participate and interact with.

4.1.2 Areas of Interaction and Repose

When designing the building program and structure, there should be many different kinds of activities to give people reasons for crisscrossing paths (Jacobs, 1992, 36). It is important to evaluate the proper programs that offer a full range of interaction and repose. Association of spaces and their positioning to each other can dramatically change the spatial relationship of the facility. As such, a building needs to provide a full range of services that allow for the elderly to live independent longer within an informal and discreet care setting while still attracting younger people to participate in the building functions. Furthermore, a site must be a non-inclusive, the relaxed atmosphere should be open daily and host a variety of activities that support communication and interaction while maintaining a discreet air of novelty (Sin, 2008, 80).

Designing a building's program in a successful way will encourage support from the surrounding environment. Neighbourliness and community are realized through a series of socio spatial qualities, which include permeability, legibility, adaptability, variety, activity or vitality, and privacy. These qualities are not exhausted nor are they mutually exclusive; rather, they are interwoven with a complexity that reflects the subtle relationships between social issues and physical form (Lewis, 2005, 42). The idea of this woven structure must also been seen through design and the arrangement of building programs so that the people take part of the threading of the facility. The element transitioning mentions how it is the movement from place to place that creates a socio spatial environment. Areas of interaction and repose explores the actual movements around a building that creates an ideal environment for community connectivity.

Along an area of activity, people are more likely to stop if there is a place to do so, especially the elderly. Elderly people can only walk limited distances before they need a rest. It is important to create valuable resting places in areas where people can rest, lean, chat and watch others. People's love of watching activity and other people is constantly evident in cities everywhere

(Jacobs, 1992, 37). The spatial design and transition areas which occur within a new senior's facility should consider rest stops that provide inclusion and interaction within the building.

The diagram below compares the different spatial movements around a site. Linear movements move one from point A to point B in a single direction. The fan allows for multiple options to a specific destination. And the net connects all destinations to each other. The proposed interwoven diagram allows for multiple destinations to be connected by multiple pathways. This creates an interwoven three-dimensional matrix of movement through the site, allowing for optimal social encounters and the most diversity within a given environment.

Figure 28: Spatial Syntax Diagram

The difference between a retirement residence and a condo is more subtle than the buildings age minimum. While the morning fight to work may leave a condo virtually empty, at the retirement residence, "Life just starts at 9 a.m.: aquatic classes, farmers market, brain fitness, bone density exercises. It's more social" (Sinclair, 2008). Third places are typically places of business and their slower periods benefit from retired people who can fill booths and chairs while others are at work or in school. Throughout the day, the uses of the building will allow diverse opportunities of different ages to intermingle at different points of time.

Figure 29 Age-Friendly City

(Active Ageing)

4.1.3 Case Study Chart

The objectives of sociability as described previously encompass the goals of designing for integrated ageing. These five objectives will be the bases for comparison of the case studies in order to understand and illustrate the necessary design parameters better. Table 8 outlines the design elements that each project uses to produce a successful building that incorporates both the elderly and all other generations into a communal environment that foster relationships and connectivity to their surroundings. Several patterns reoccur within each case study. First, central open space, atrium or courtyards are open to the public to bring the community into the building. There is also a diversity of functions for all ages that provide diversity within the site. Next, all major circulation is located around social spaces. And lastly, vertical and horizontal connectivity serves as a prime source for social interaction within the site.

Case Study	Type	Additional Facilities	Conviviality	Transition	Diversity	Areas of Interaction and Repose	Scale
Rock 'n' Roll Apartments Plussebergh, Netherlands	- Adult-Only universal design apartments	- Nursing Home attached and lake	- Interesting Architecture in an environment that makes them feel comfortable - Large open area for paths for mobility impaired	- Spaces between buildings that offer discreet care - Asphalt pathway gardens connect the public to nursing and apartment.	- Adult-Only allowing to age in place	- Corridors join and widen to become mutual communication areas - Community room is located under the horizontal element with views of the park	Large open area for paths for mobility impaired
Miss Sargfabrik Vienna, Austria	- Multigenerational Housing	- Live and working places - Shared accommodations available	- Generously glazed entrance leads into a sunken courtyard	- Irregular party walls and sloping ceilings create points of interest	- Wide range of occupants and live/work	- Communal access balconies serve as outdoor seating - Communal kitchen, library, media room, club room, laundry	- Over-the-top scale and orange façade intrigues and overwhelms visitors
Humanitas-Berweg Rotterdam, Holland	- Seniors	- Medical /dental offices - Shops, café, atrium	- Public Atrium	- Atrium space serves as main circulation - Water feature attracts to other end of the building - Retail and office face the street to transition from outside to in	- Adult-Only allowing ageing in place; however, public invited for medical and retail uses in the atrium	- Large atrium space - Corridors to private space face the interior atrium	- Large scale in an urban environment - Three-storey atrium space and mid-rise attached - Relates to public environment
City Loggia Stuttgart, Germany	Multigenerational Housing	- Apartments for seniors - Gymnastic room - Child Care Centre - Cafeteria	- Public zones on ground floor to attract the community - Publically accessible garden area transition from outside to in	- Enter through a generously proportioned ramp - Three visual connections are made from foyer to garden and upper levels	- Mix of children services and senior	- Glazed portico to open garden	- Open areas and double height are used for major transition spaces
Im Der Wiesen Generational Housing Vienna, Austria	- Multigenerational Housing	- Medical practice/healthcare unit - Lofts, maisonettes, apartments, assisted living apartments - Café, offices, shops	- Public courtyard surrounded by shops, café, welcome public to enter the area - Shops face the busy street - Plaza serves as commencement to district - Bright colours of white, yellow and orange	- Single-loaded corridors are external viewing the courtyard - Public and semi-public courtyard separated by medical centre	- Shops open to the public - Community services for neighbourhood - Care workers service people living at home	- Stairwells used as viewing and ventilation - Lookout balconies on upper floor - Corner windows provide views of interconnected walkways	- Open-air courtyard provides light into the area - Entrance to courtyard has two-storey opening
The New College Student Residence Toronto Ontario	- University Housing	- University offices - Housing - Public space	- Ground floor becomes a gathering place for the community at large	- Sunlight and atrium spaces serve as the transition spaces - Common areas are located in the central circulation area connecting the building	- Mix of office services and residential student housing	- Flexible ground floor plaza along with quiet study halls with views to plaza - Three-story space serves as an exterior community room	- Attention made to open up spaces for circulation - Communal activities along the communal spaces - Scale along street opens to make an observation deck
Mirador Sanchinarro, Spain	- Apartments	- Nine blocks of housing into one tower	- The colour and façade identify each one of these 'communities' - Three-dimensional street alleyways lead to a vertical sequencing of stairs, halls, platforms and streets, creating a vertical neighbourhood	- Circulation goes around the building and expands at certain points to become community courtyards - Colours are coded for different uses; for instance, red is used for the corridors	- Diverse apartment units; however, only residential community	- Central void cut out to view the city on 12 th floor serves as main community space - Small lowered circular nooks for less wind spaces - Community courtyards created by merging landing spaces and corridors	- Oversized scale gives an exaggerated reality of form

Table 7: Case Study and Design Elements Chart

5.0 DESIGN

5.1 Application

The concept for the design facility is to create a space that fosters the Baby Boomers' independence as they age in place while maintaining a connection to the surrounding community, social and gerontological requirements for the ageing population. However, through research, it is clear that the design must be open to all ages in the surrounding community otherwise it only creates another segregated elderly facility. The conclusion is to redesign how we build within the existing neighbourhood, to create a mix-use building type that works together to achieve independent ageing through community support. This thesis looks for new building typologies to how we should design for an ageless society. The goal is to allow residents of the community to live on site or in the surrounding neighbourhood and receive almost all the requirements they need as they age within their community centre. The design intent will serve as a prototype of how we can build for a large ageing population within the existing urban framework.

The Baby Boomers will define a new way of senior living that promotes independent living, ageing in place, continuing to work, and physical well-being. They want a place that has unique architecture that they can experience and want to visit. The facility for the Boomers must be able to evolve with time and adapt to technology. The future design for the ageing generation will result in a hybridization of typologies in response to the Boomer demands.

The result is an architectural exploration reinterpreting the way we design within the city block so that buildings are not independent of one another but rather an opportunity to share functions within a "society of all ages" through safe and secure environments. The design is to create four buildings — healthcare, wellness, communication and residential — which form around each other, blending the separation of servicing diverse ages that make up the community fabric building interwoven relationships. These services are tied to each other through a network of common spaces that provide opportunity for the community to engage in social activities. These common spaces serve as hubs for social integration and development of relationships maintaining a safe and social context. The elderly will then be able to live independent longer while relying less on formal care due to a large community care network of developed relationships and safe environments.

5.1.2 Design Strategy

The section "Integrated Architecture" gave insight to design elements and examples that can be used for the design. Based on this research, a set of design strategies were developed that exclusively relate to the ageing Baby Boomers, providing independence without isolation in an informal community setting that offers safety and security.

Figure 30: Intersection of Research

Table 8, Design Strategies, evaluates the goals and principles that will be used to create a facility that focuses primarily on the needs of the ageing Baby Boomers but still caters to the community as a whole. The community center will provide opportunities for the elderly to interact with all generations within an informal environment. It is not necessarily the program or activities within the building that offer the greatest chance for building relationships, but it is the interstitial spaces between each elements that offers the most diversity and interaction.

Strategy	Intent Accomplished	Innovations/Insights Applied	Improvement this Serves to Provide over Status Quo
Provide a place for people to work post-retirement	Slow integration into a facility designed for independent ageing while meeting the demands of the retired Baby Boomers and younger telecommuters.	Providing a place for people to work outside the home and work will support post-retirement careers as well as bring younger telecommuters to the site. Offering a range of services open to the public that would be typically available within an office setting.	Community centres are designed for all ages focused on wellness and social activities. By incorporating these unique aspects of the elderly, the facility will be prepared to meet the demands of the large ageing Baby Boomer population.
Healthcare services available for all ages within an informal setting	Providing healthcare for all ages slowly integrates the Baby Boomer population to senior healthcare when they are in denial about ageing. All ages in the surrounding community, including those ageing in place, are supported by formal healthcare services when needed.	Placing healthcare offices in an informal and non-institutional setting will provide discreet and accessible care to the ageing.	Baby Boomers who are in denial about ageing will receive care in an environment that is comfortable to them rather than one that is exclusionary to the elderly. Currently, there is a separation of informal and formal care where one has to move to receive more care as they age. By allowing flexible options for healthcare within a non-institutional setting, Baby Boomers will be able to receive the care they need when they need it, either at home or on site.
Open the facility to all ages in the surrounding community	Neighbourly support between different generations with different needs.	Create opportunities for different ages to interact, help each other and build intergenerational relationships not only in the building activities but in the public spaces as well.	Remove the concept of “Grey Ghettos” and allow for seniors to remain active parts of the community.
Rest stops that present opportunities for social engagement	Opportunities for multigenerational interaction.	Provide the pause spaces in locations between building programs that offer a visual and social diversity. Located between diverse programs in the transition spaces will give way for intergenerational relationships.	North American retirement homes provide rest stops throughout their facilities; however, social diversity is limited to the elderly occupants. The pause spaces will allow for the elderly to interact and remain connected to all ages.
Interstitial spaces act as prime locations for social interactions	Diverse social experiences as one travels through the site.	Spatial design of program oriented around common spaces that reduce the use of the corridor. This will create an opportunity for diverse paths to cross within a mutual space.	Current seniors’ facility focus primarily on the program and its accessibility. Focusing on the spaces between programs give opportunity to intermingle with diverse generations as they move around the site.

Table 8: Design Strategies

5.1.3 Site

With the densification of Toronto and the increase of development of the last few decades, it is difficult to formulate a location within an already existing community. Simultaneously with the increase of the senior population, lower fertility rates have depreciated the amount of students entering elementary and secular schools in Toronto. The Toronto District School Board has been closing down and selling off schools that have had low enrolment over the last few years. The Toronto Lands Corporation (TLC) has already sold 22 non-operating school sites across the city over the past two years, and it expects to finalize sales for another 10 surplus properties. Schools were designed to be the heart of the community not only to educate the neighbouring children but also to foster community development. An appropriate solution for the increasing elderly population would benefit from the difficulties of the student enrolment while still maintaining a community network within the neighbourhood.

Careful consideration was taken when choosing the site for this thesis study. Saint David’s Catholic School located at 486 Shaw Street, Toronto, was chosen as the location for creating a facility that caters to the proposed elderly facility. Saint David’s was built in 1924 and has functioned as an elementary school for seventy-eight years. When enrolment declined, it was and transformed into a children’s day care until 2010. The day care recently closed when the TLC sold the land to a private developer. The 1.7-acre site near Little Italy was chosen due it its large Baby Boomer population. The diverse range of incomes as well as cultures increases the need to provide a facility that is affordable to the entire community. Across the street from the site is a secondary school, playing fields and a traditional public library, which can all benefit from a central community hub as well as an elderly facility. These dynamic relationships can advance a community network, promoting intergenerational relationships through the proposed facility and making it an ideal environment for the Baby Boomers to age.

Age demographics for Ward 19 are slightly lower for the Baby Boomers versus all of Toronto. However, there is even more reason to integrate them within the community framework. A successful design should work in any neighbourhood that has a diverse mix of people.

Table 9: Age Demographics for Toronto Table 10: Age Demographics for Ward 19

(City of Toronto, 2006)

Figure 31: St. David's School, view from Shaw St.

Figure 32: St. David's School, view from Dewson St.

5.1.4 486 Shaw Street Site Analysis

Figure 33: Existing Site Plan

(Circle represents ¼ mile walking circle or a five-minute walk from the site.)

Places and transportation within walking distance are important for those who are ageing in place. Without options and public transportation service, older seniors will continue to drive to meet their transportation needs, even if driving is stressful. Appropriate site selection must include the understanding and provision of inclusive transportation strategies, mitigating the need for seniors to drive. The site is not situated directly on a transit station; however, the building is situated between three modes of public transportation and can serve as a hub for those who need help getting to the transportation points or other locations. Looking at the pedestrian movement in and around the site, there is an opportunity for the community centre to be central to the accessibility around the neighbourhood. People coming from the public transit stations or retail strips must pass alongside or through the site on their journey. Therefore, the facility has an opportunity to serve as place to visit on the way to or from any destination travelled. The buildings in the surrounding areas vary

from retail strips to residential homes. There are elementary, middle school, high school students and neighbours that can benefit from increased community activities within their surrounding area.

The surrounding schools as well as neighbourhood can share the facilities that the building has to offer and vice versa. For example, the swimming pool in the senior's facility can be used by the swim team at a neighbouring school. Similarly, the Baby Boomers can share the gymnasium with the high school across the street. Additionally, the market place can either become a destination for a senior who will eat lunch at the site or can be a convenient place to shop as a person crosses through on the way from the subway or from picking up their child from daycare. With the proper design for community connectivity, the facility can become a part of the community's daily activity bringing in a diverse range of activities and people to the site while keeping the elderly engaged with the community.

Figure 34Surrounding Buildings

Figure 35 Transit and Pedestrian Movement Throughout and Around the Site

(Circle represents ¼ mile walking circle or a five-minute walk from the site.)

5.2 Program Analysis

A mixed-use community centre and senior housing will facilitate a design that allows for seniors to age independently while remain active parts of their community. The design methods used to explore the creation mentioned in the design strategies table will be covered as the design unfolds itself. As the design is directly derived from the design strategies, design tools and the case studies, it is possible to conclude with the following initiatives for the design:

1. To provide a place for people to work post-retirement.
2. Healthcare services available for all ages within an informal setting.
3. Open the facility to all ages in the surrounding community.
4. Rest stops that present opportunities for social engagement.
5. Interstitial spaces act as prime locations for social interactions.

This section will explain the basic configuration of the building and the design as it pertains to the reuse and adaptation of the existing building and the design concepts incorporated.

The floor plans of the building are based on the premise of connectivity spaces as the hub of all activity. The “Living Room” is intended to be the main area of connectivity, inviting the public into and through the site. The “Living Room” interwoven connectivity from the streets through and around the building providing ideal opportunities for social interactions. This space serves as the hub of all public activity. It is intended to be a flexible open spatial relationship that provides fluid movement through the site to the building programs. Along this path, interstitial spaces are designed to provide both rest opportunities as well as create social spaces. These spaces provide a unique space for interaction as well as a visual perspective to watch activities occur around the site. The elevational plane allows for easy access from street level on both the ground level and level one, making access easier for the less mobile. All other vertical circulation is located in the centre of the building.

Apart from the “Living Room” space, the building program is broken down into five additional parts: Healthcare, Wellness, Communication, Community and Housing. Each program responds directly to the needs of the Baby Boomers as they age in place. The focus of the thesis does not pertain directly to the program design but the interstitial spaces between the programs that has the most opportunity for social interaction. Further focus is made to the way different programs are related to each other within these spaces in order to provide a diverse background for social support. Figure 34 diagrams the relationships needed between the different programs and how they relate to the public environment. Further information on the relationship diagrams is available in Appendix 2.

Figure 36 Program Relationship Analysis

Healthcare: The healthcare wing provides a full range of institutional care services to the community. People have the opportunity to age within their home and have a local team of medical experts come to them when more care is needed. The healthcare section of the building consists of offices, exam rooms, blood labs, nursing stations and adult day care. By having healthcare for all ages rather than only the elderly brings a mix of generations and people to the site to come for medical needs.

Wellness centre: This centre is focused on the prevention of illness of residents in the neighbourhood. The wellness centre offers workout rooms and swimming pool, therapy pool, locker rooms, weight rooms, physical therapy rooms that can also be used as fitness rooms, and offices for staff. The wellness centre is available to the entire community, which is different from the current retirement home model. This allows for multiple generations to use the facilities and can create positive generational integration. Also, not all people use the facilities at the same time. Elderly people or the retired would more likely come during the day, professionals would come after work around six p.m. and students can come after school.

Communication centre: The communication centre is a new concept that provides the necessary office productivity for people who work out of their office. This includes places social spaces that allow for the sharing of knowledge design to prosper informal relationships. People who work at home might not have the necessary technology or spaces that offices provide. The centre presents

spaces for conference rooms, copy centre, computer labs and technicians. The communication centre will also give way to social opportunities where people can interact and ask other people who are working at the centre for advice or even develop new business connections. Currently, the working environment is changing to one that is global thus the need to report to an office is diminishing. The communication centre can provide that office environment to all that need it.

Community space: Spaces that provide extra services that support the residents are available within this section. The programs are not clustered together but rather arranged throughout the site based on their relationship to the building. Functions include children day care, marketplace, as well as a variety of flexible spaces. These flexible spaces can serve the rest of the building program when needed, which includes places for worship, lectures, and a community kitchen and dining room.

Seniors Housing: Seniors Housing is available on the top three levels for those who prefer to move to the site. Diverse unit layouts accommodate universal design for ageing in place while still providing the size of apartments Baby Boomers are accustomed to. Residential units are designed around an atrium space that connects them to the community centre. The site is designed to allow for the privacy of the residential units but also to share the amenities of the site. Private suites do not have their own balconies but are able to use the communal balconies on each floor or the rooftop community garden. Figure 37 demonstrates how the senior housing models have changed from phase one to an institutional home in phase 3, a design for the Baby Boomers.

The combination of these design elements and programs develops into a hybridization of a community centre and a seniors facility creating a new way of ageing in place. The case studies mentioned earlier provided examples of ways to incorporate the elderly into the urban framework. Using those examples, while combining them with the design elements identified provides a new evolution of a senior's facility. A design for the ageing Baby Boomer population is one in which the program of the building does not drive the community relationships, it is the spaces between them, the interstitial public areas, that provides the ideal public spaces for intergenerational discourse. This new way of designing becomes part of the community fabric rather than a segregated building placed within a neighbourhood setting.

Figure 37: Evolution of Senior Housing Suites

Small Single Room 133 sq.ft.

2 Person Room 150 sq.ft.

Large Single Room 150 sq.ft.

Phase 1 Senior Housing

Institutional - like apartments

Small Rooms

Low Ceilings

Bachelor 325 sq.ft.

1 Bedroom 435-550 sq.ft.

2 Bedroom 675-800 sq.ft.

Phase 2 Senior Housing

Home - like apartments

Kitchenette

Larger Units

Higher Ceilings

Bachelor 350 sq.ft.

1 Bedroom aprox. 550 sq.ft.

2 Bedroom aprox. 800 sq.ft.

Phase 3 Proposed Senior Housing

Full Scale Condominium Suite Layouts

Full Size Kitchen

Washer / Dryer

Technology Enhanced Safety Features

5.3 Final Design

5.3.2 Floor Plans, Sections, and Elevations

Figure 38 Site Plan

Figure 39 Ground Floor Plan on Shaw St. and Dewson St.

Figure40 Ground Floor Plan on Roxton Rd.

Figure 41 Third Floor Plan

Figure 41 Fourth Floor Plan

Figure 42 Fifth Floor Plan

Figure 43 Section A | North South Section

Figure 44 Section B | East West Section

Figure 45 Section C | East West Section

Figure 46 East Elevation

Figure 47 West Elevation

Figure 48 South Elevation

Figure 49 North Elevation

5.3.3 Diagrams and Renderings

Figure 51 Circulation and Program Diagram

Figure 52 Hierarchy of Ages

Figure 53 Interstitial Public Spaces

Figure 54 Programmed Public Space | Communication Centre

Figure 55 Public Space | Seating area and Atrium

Figure 56 Secondary Public Space | Residential Floor

1. View from Shaw St. entrance
2. Large public interstitial atrium space.
3. Elevator waiting areas can serve as public gathering spaces
4. Rest stops every 25 feet
5. Circulation through the medical section of the building
6. Secondary interstitial public space located near the Dewson St. entrance, with views towards the atrium and market areas
7. Circulation through the wellness section of the building
8. Glass handrails creating more connectivity to the spaces below
9. Skylight over the stairs
10. Easily visible stairs for vertical circulation and connectivity to the floor above
11. Light well through the residential floors to the lower levels
12. Entrance from Dewson St. through public courtyard
13. Additional seating areas that can serve the marketplace as well as the public
14. Skylight above the large atrium space

Figure 57 Diagram | View on ground Floor from Shaw Street Entrance

Figure 58 Image | View on Ground Floor from Shaw St. Entrance

1. Circulation path between the healthcare section and wellness part of the building
2. Open to above: skylight
3. Fitness/multipurpose rooms can be shared between the wellness, healthcare, and the rest of the facility
4. Daycare centre
5. Open to above: residential floors
6. Glass handrails for connectivity and openness
7. Reuse of the existing exterior school walls as part of the interior spine of the building
8. Narrowing of the circulation path by placing a water feature creates an interstitial space
9. Public interstitial between two areas, wellness and healthcare
10. Community pool
11. Light wells above the pool provide natural light to the lowest floor atrium space

Figure 59 Diagram | View of Ground Floor Interstitial Space Between the Healthcare and Wellness Areas

Figure 60 Image | View of Ground Floor Interstitial Space Between the Healthcare and Wellness Areas

Figure 61 Image | View of Courtyard from Roxton Rd.

Figure 62 Image | View of Ground Floor Interstitial Space Between the Healthcare and Wellness Areas

Figure 63 Image | View of Living Room Circulation on Second Level

Figure 64 Image | View of Living Room Circulation on Second Level

Figure 65 Image | View n Dewson St.

5.4 Conclusion

The goal of this thesis was to create an architectural design for the ageing Baby Boomers, providing independence without isolation, and safety and security through community connectivity. It has been concluded that the built environment can facilitate or influence independent ageing in place through diverse social interactions. Exploration from the research and case studies previously found that it is important to create an environment where multigenerational connectivity is encouraged. The elements of design explored identified ways to foster those relationships within the interstitial spaces of the built environment. As a result, design strategies were developed and a design was formed as an alternative to the current senior housing model.

The maturation of the Baby Boom generation will ultimately challenge our established perceptions and routines. They will also present a major opportunity to re-examine and question the conventional patterns of how we build for our elderly. The ageing population should be viewed as a positive force that can serve as a catalyst for community renewal and redevelopment. Fifty years ago, the family needs of the Baby Boomers created suburbia. Twenty years from now, the geriatric needs of this same generation may well be responsible for equally dramatic changes in society; changes that could bring community development, healthy ageing, longer independence for the elderly, and strong intergenerational relationships within a society for all age

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APPENDIX

Appendix 1

Interview Chart

Topics Discussed	Pria Nippak (Gerontologist)	Evan Miller (Spectrum REIT)	Paul Richardson (Diversicare)
Healthcare	<ul style="list-style-type: none"> - Live independently in an environment to access healthcare in an integrated way - Institution setting is not set up for all patients; example, dementia 	<ul style="list-style-type: none"> - Need a balance between healthcare and independence; healthier people do not want to live somewhere people need a lot of care. - Need to offer more long-term care options - Government pays to lease out rooms in ALF rather than building their own facilities - Each faculty has a wellness centre with a doctor and nurses available by appointment 	<ul style="list-style-type: none"> - The more Healthcare you bring into the home, the more it changes the type of home it is - Most places have 2 levels of care and hope people do not realize it - Try not to keep Healthcare behind closed doors and not in your face - Most people stay an average of 3-4 years before they move to assisted living or other - Not interested in adding more care to the facilities, some homes have dementia wings - Government cannot afford to expand its build long-term care facilities and there will be a large demand for it. There is always a need for more care
Economics	<ul style="list-style-type: none"> - Higher income elderly join clubs They can also afford to age in place within their homes - There are less alternatives for middle and lower incomes, which is due to the 3-tier economic system - High-income people prefer to remain separate from lower income - Lower-income government subsidiary is only about \$1500 a month; it cannot pay for much - Women will have more money than before 	<ul style="list-style-type: none"> - There needs to be a balance between cost of living and cost of building - Salaries pay for 50% of senior residences - You need to design for the majority and have packages for people who have more money and prefer to pay a premium for the things they want - Need a reasonability factor to the way things are built. Children don't want to see their parents spending all their money when they do not have enough to pay bills 	<ul style="list-style-type: none"> - Canadian disability tax credit can pay for care in a seniors residence up to \$10,000, which helps residents afford homes - Activities such as stretching and aerobics can be paid for by the government
Community	<ul style="list-style-type: none"> - Transportation is a key factor dealing with connecting to the community. When the car is taken away, people get depressed because they lose community relationships - Religion brings people together when they are older 	<ul style="list-style-type: none"> - The main determinant factor for choosing a seniors home is close to family - Amenity areas designed for community feel. Not too large of an overwhelming space - Country kitchen - Lounges on each floor for small gathering - Want people to spend as much time out of their rooms 	<ul style="list-style-type: none"> - One of the main benefits of moving into a seniors residence is for social interactions - Events are arranged for community on site, most activities are geared for seniors as a marketing tactic - The buddy system within the building helps in introducing new residents to others - Church either brings people to the site for prayer or takes residents to the local church - Urban homes have more freedom to interact with the community' they can use the local pharmacy, bank, shops, etc.

Independence	<ul style="list-style-type: none"> - Independent setting where people can feel safe - Architecture can enhance the quality of independence by paying attention to everyday activities 	<ul style="list-style-type: none"> - People who live in the building live independent longer because they are reassured that if something goes wrong, there is someone who can help them 	<ul style="list-style-type: none"> - When you get older, your world shrinks so much. When you do not have a car, your world shrinks. You must give people the opportunity to do what they want and not have everything regiment. Let them feel like they have freedom and the ability to make decisions
Work	<ul style="list-style-type: none"> - Agreed, Baby Boomers will prefer to work well into their retirement years with a mix balance of work and leisure 	<ul style="list-style-type: none"> - People who move into senior homes typically won't be working. Most people in their 80s are not working 	<ul style="list-style-type: none"> - Believes men will still work while living in retirement homes. Men will move in when spouses cannot take care of them anymore and continue to live their lives as before
Diversity	<ul style="list-style-type: none"> - Although Toronto is a very diverse city, there is still a demand for segregated ageing communities 	<ul style="list-style-type: none"> - Diversity is based on background - Jewish people and Italians live in the same home but click to people of their same ethnicity - Asians do not like to mix with others 	<ul style="list-style-type: none"> - Diversity is not an issue - The only issue are Asians because they like to take care of themselves and not allow for outsiders to help - There was a deliberate policy in the 1980s by the government to push for segregated long-term care facilities, which created many segregated communities
Ageing in Place	<ul style="list-style-type: none"> - Ageing in place is a term used loosely; it can mean in their homes, in ALF or anywhere else 	<ul style="list-style-type: none"> - People in their 70s and 80s do not want to move - Need to service people from 65+ without people needing to move to get more or less care - You can age in place but you do not have social interactions - Most people say they wish they moved sooner - People who age in place cannot rely on a level of care; people feel safe and confident in seniors residents. 	<ul style="list-style-type: none"> - People should not age in their homes; they should move to seniors facilities in order to have social interactions, eat better and exercise more
Religion	<ul style="list-style-type: none"> - "Everyone goes back to religion as they age" - Believes that Baby Boomers will turn to religion as they age even though they are not as religious as their parents - Health insecurity and desire for socialization increases interest in religion 	<ul style="list-style-type: none"> - Different provinces have different religious perspective - In Quebec, places of worship are built into facilities - In Ontario, the use of a place of worship is an amenity space used for multi-functions 	<ul style="list-style-type: none"> - Designs homes with a designated non-denominational chapel inside - Religion plays a large role in the lives of seniors - Seniors like to leave the premises and go to the actual place of worship
Ideal dream scenario for seniors	<ul style="list-style-type: none"> - Live independently in an environment to access healthcare in an integrated way - Care in a non-invasive way - Transportation is one of the important considerations of ageing - FUN! Make it fun and 	<ul style="list-style-type: none"> - The facilities built are the ideal scenario - More care packages to allow for longer stays of seniors - Separate but integrated wing for dementia without discrimination 	<ul style="list-style-type: none"> - Would like to live in his facilities - More emphasis on green building and energy savings only if it is cost beneficial - Would like a pool in his facility; the ideal scenario is in the Chelsea Park facility where they built a pool in the seniors centre and thought it was not cost beneficial to keep it

	attractive for people to want to go to a senior facility otherwise they will not go		running on its own and incorporated a health centre for the community to share <ul style="list-style-type: none"> - Have more assisted living wings for people to move to when they need more help
Future needs of the Baby Boomers	<ul style="list-style-type: none"> - More independent models of living - Ageing in place - Active living environments that promote healthy ageing - Mind, body, spirit - Cognitive learning – life institute - “What you do in your 50’s you do for the rest of your life” pg. 150 in Issues of Ageing 	<ul style="list-style-type: none"> - Not many changes from now to Baby Boomers - More technology features, Skype with family - Cannot make it more luxurious without it costing too much - Require a higher level of service - More units owned to allow for customization 	<ul style="list-style-type: none"> - Does not think there will be many changes - Suite sizes larger - Baby Boomers are used to nice things and would want luxurious facilities - More choices is everything; Baby Boomers are used to making decisions and like to have things their way. More dining and activity options - Want things done their way on their time and need to allow for this. They will be less regimented than current seniors
Developments for the increased population	<ul style="list-style-type: none"> - People will be living in their homes longer 	<ul style="list-style-type: none"> - Buildings are now being designed with a garden space that can be developed later - More specialized care - Government and developer mix of ALF facilities 	<ul style="list-style-type: none"> - Older facilities are being turned from independent living to assisted living or lower income seniors residents
Transportation	<ul style="list-style-type: none"> - There are no modes of transportation for ageing in Toronto - Transportation is one of the important considerations of ageing 	<ul style="list-style-type: none"> - Most people at that age do not have cars - Electric scooter charging stations - Buses are available for excursions - Less parking spaces needed from previous building standards 	<ul style="list-style-type: none"> - Van rentals and private services transport seniors where they have to go - Electric scooters can only be used outside - Urban settings are ideal because they are centrally located - Private services are popular to keep independence
Important factors for building for seniors	<ul style="list-style-type: none"> - Separation - Institutional setting is not set up for all patients - Different patients need different types of facilities to have the best quality of care and improve their conditions - Disease-Specific Adaptations <ul style="list-style-type: none"> - Dementia Wings - Independence - Allow for seniors to live as independently as possible with any condition - Sense of security either in a facility or at home is important 	<ul style="list-style-type: none"> - Dining room standards need to be comparable to a nice restaurant (industrial kitchen) - Aerobic exercise areas need to be large to accommodate everyone - Kitchenette - Open-air stairwell - Guest rooms - Must be designed for a specific site Different sites have different needs - Building codes for handicap rooms over 3rd floor - Rooms that are comfortable to live in with amenities that will keep people out of their rooms and in a social 	<ul style="list-style-type: none"> - Laminate floors great for walkers - Separate breakfast/multipurpose room rather than one dining hall - Spa offering choice of services such as foot therapy and massage - Washer/dryer on lower level not in unit - Computer tutoring services as well as special computer for the elderly and computer illiterate - Fully licensed bar - Sizes of units: studio-

		environment	<p>400sqft, 1B-600sqft, 1B-800sqft, 2 B-1100 sqft</p> <ul style="list-style-type: none"> - Shelves outside of units that were designed to hold purses are used to show off ornaments - Hair Salon, Billiard Room, Movie Room
Differences in building from past to present	N/A	<ul style="list-style-type: none"> - The size of residential spaces have increased from aprx. 325sqft to 500sqft - Kitchenettes - No longer hospital-like corridors - Higher ceilings 	<ul style="list-style-type: none"> - Currently on 3rd generation of senior facilities. The first one was a long-term care model, 2 p/p per room for the lower, middle class. Second generation, 1980-1990s became more luxurious with private rooms with little amenity space. Third generation and current there is more amenity and storage space and more selections of room types

(Nippak, 2010) (Miller, 2010) (Richardson, 2010)

Appendix 2

Spatial Relationship Diagram

The reduction of the building footprint was made possible by creating a relationship diagram with all the programming used in independent and dependent senior housing, then by removing the overlapping or unnecessary functions for the purpose of this thesis.

- 1 Recreation gathering area
- 2 Reception adult day care
- 3 Therapy Gym
- 4 Hydrotherapy
- 5 Dining
- 6 Private Library
- 7 Multipurpose large activity
- 8 Special Activity Room
- 9 Beauty/Barber Shop
- 10 Country Kitchen
- 11 Workroom
- 12 Conference Room
- 13 Staff lounge / lockers
- 14 Commercial kitchen
- 15 Housekeeping storage
- 16 Loading/receiving
- 17 Wellness Centre
- 18 Exercise/meeting room
- 19 Theatre/multipurpose
- 20 Cafe
- 21 Pool/lap pool/spa
- 22 Fitness Room
- 23 Changing rooms
- 24 Game room
- 25 Card room / club room
- 26 Computer room
- 27 Wellness Coordinator
- 28 Art room
- 29 Community room with stage
- 30 Small Community room
- 31 Small Bank
- 32 Small dining
- 33 Trash rooms
- 34 "Library" (overall space needed)
- 35 Library office copy centre
- 36 Children's Day Care

Key:
 Shared Spaces +
 Adjacent Spaces <
 Separation by distance or barrier §
 Indifferent O