While some Canadians become "snow birds" when they retire and others move from one province or country to another, the majority remain in their familiar community, many in the home that they have lived in for many years. This conference explores the range of tenure arrangements, housing forms, and service models currently available and under development for adults 55+ in British Columbia. These include cohousing and the village model popular in the USA; life-lease projects, popular in the prairie provinces; mixed-tenure models and ethno-cultural models currently in operation in the province as well as housing and service options that do not require a person to move from his/her current home. Keynote speakers and expert panels will describe the pros and cons of each housing option, the type of resident for whom person-environment fit is maximized, and “how to do it” if it’s a model that is resident inspired and managed. The objective of the conference is to provide information that will enable people aged 55+ to plan ahead and make informed choices. As well, it provides a forum for developers to learn what current and future seniors are looking for in the way of housing for their later years.

Host organizations: Simon Fraser University Gerontology Research Centre in collaboration with the Lifelong Learning Adult 55+ Program
1. Title: EXPLORING THE POTENTIAL OF INNOVATIVE HOUSING MODELS FOR OLDER ADULTS TO SUPPORT AGING-IN-PLACE

Author: Catherine Bigonnesse, MSW, PhD student, Department of Gerontology, Simon Fraser University

Problem: The limitations of current housing options for older adults in meaningfully supporting older adults’ preference to age-in-place (AIP), have led to the development of multiple innovative housing and service models. However, the potential of these models to support AIP is not well understood, along with a scarcity of empirical research in this area. Objectives: This poster presents a comparative analysis of the AIP potential of three innovative housing models: Naturally Occurring Retirement Community, Cohousing model and the Village movement. Method: This research is based on a review and synthesis of both descriptive and empirical literature identified through specialized academic databases (AgeLine, CINAHL, MedLine, Social Sciences and Web of Science). The selected articles include case studies, program evaluations, conceptual papers and meta-analysis. Relevant grey literature, books and website have been consulted. Results: The three models have common characteristics that include a participatory process, democratic governance, civic engagement, social participation, community-based support services and social capital. However, provision of sustainable home care/support is a challenge in all the housing/service models. The cohousing model alone offers a purpose-built physical environment to foster community engagement. Discussion: The comparative strength and weakness of each model to support AIP is discussed and a comprehensive conceptual framework to support AIP is suggested.

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2. Title: SENIOR COHOUSING AS A SOCIAL INNOVATION FOR SURFING THE SILVER TSUNAMI

Author: Margaret Critchlow, PhD, President, Canadian Senior Cohousing Society

Tsunami means “harbour wave.” Mariners can ride out a tsunami in the open sea without even knowing when it passes under them. The demographic bulge of aging Baby Boomers, or Silver Tsunami, is a wave that will crash upon the harbours of conventional housing and health care if we aren’t bold enough set out to sea and prepare now to ride the wave in new ways.

This poster presentation describes a social innovation to allow Canadian society to ride out the Silver Tsunami and enjoy the process rather than waiting for the wave to crash upon health care and social services as well as on individuals, families, and communities.

The innovation is to adapt senior cohousing, a tried and true housing strategy in Europe but one new to Canada, in order to reframe societal expectations and options for aging. Senior cohousing combines private home ownership with shared amenities, lower energy use, neighbourly cooperation, and an emphasis on flourishing through mutual support.

The poster features the first two senior cohousing prototypes in Canada, Wolf Willow in Saskatoon and Harbourside in Sooke, BC. Given affordability issues and limited development capacity, how can senior cohousing become an option for many more people? We are developing and promoting ways to age well through voluntary mutual support and companionship (co-care), well-designed or adapted housing, and shared costs that improve quality of life and keep elders from being a burden on society, creating old fashioned communities of the future.

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3. Title: HOUSING OPTIONS: FEW AND UNSATISFACTORY, PARTICULARLY FOR OLDER CANADIANS

Author: Henry C. Hightower, PhD, Professor Emeritus, UBC Planning

Restricted options and inadequate information about housing choices particularly affect older people. Three market failures deprive Canadians of housing options many would choose if they had those choices:

1. The 2007 collapse of a US real estate bubble precipitated our ongoing recession, yet a housing price bubble continues unabated in Vancouver.

2. Often buying one's home is neither wise nor economic in the family's circumstances, yet no suitable, affordable rentals are available.

3. Housing with support for the frail elderly offers new options, but consumer protection may be lacking and minimal regulations unenforced. Those requiring subsidy must often relocate to unfamiliar communities.

Individuals with limited income regularly make compromises among their needs, food, drugs, heating fuel, social contacts, etc., except for shelter. Housing choices and preferences are rarely reconsidered, particularly by those in older structures. New structures cannot be built for the cost of old ones. Services to clients aging in place should cost less than moving them into institutions, and clients would prefer it. Purpose-built market retirement housing with services is either expensive housing, or institutional housing where health authorities and charities centralize their support services, suggesting it is easier to find capital than operating funds. A local program supporting older people facing homelessness used specialized social workers to provide information on housing options to older clients, and advocate for the clients with landlords and others. The key is helping clients to understand their own needs and preferences, the options available to them, respecting their wishes and advocating on their behalf for their choices.

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Fine dust particle concentration has recently emerged as a serious social issue because it has been known to increase the risk of diseases including heart attack, bronchitis, pneumonia and lung cancer (1). Among many other countries, Korea is considered highly severity of the fine dust particles due to those particles coming from China and industrial acceleration (2). Especially the effect of fine dust on physical body is most significant in elderly people upon its concentration(3). The mortality risk in elderly aged 65 or over caused by cardiovascular disease would be doubled if daily average concentration of fine dust is increased to 10 μm/㎡; and this also tended to cause health issues, including dementia, cerebrovascular disease or depression.(4) Elderly people needs to be aware of the severity of fine dust particles, check the concentration of fine dust particles on a regular basis, close the door to block the inflows of fine dust if its concentration is too high, maintain the enough humidity and turn on the air cleaning machine. However, indoor air quality is inadequately being managed due to ageing physical condition, lack of understanding on risk associated with indoor air contamination, and difficult access to equipment such as smart air purifier.(5) With this background, the purpose of this study is to identify the significance of indoor air quality in residential area in which elderly spends their most of daily life to ultimately develop a service automatically manages the indoor air quality with utilization of IoT in absence of user’s handling. **Method:** The effect of fine dust particles on elderly and ventilation system that controls the fine dust particles are to be investigated through the previous study; and the IoT technology is to be utilized which is capable of providing the service in absence of elderly’s special control. Based on this, the IoT-based concept of housing is to be developed.(6) The sensor and equipment required for service are to be proposed; and as well as a service that automatically maintains the fresh air quality is to be proposed through the connection network between the objects. One-to-one individually customized service is oriented for the service. **Results and Discussion:** This study has proposed the service to manage the indoor air quality which may significantly impact the elderly to lead their life constantly. As shown in the figure 1, the result of this study was to propose the methodology to manage the fine dust particles by connecting the sensor wall with inclusion of electric windows and doors, smartphone, particle sensor CO2 sensor and humidity sensor, and smart air conditioner with IoT technology. It would be an effective way for assisted living of elderly people if service, which improves the physical and cognitive limitations of elderly, could be provided by providing such features - air cleaner, humidity control, humidifier/dehumidification and automatic window, to ultimately remove the fine dust particles in residential areas through the sensing and network technologies in absence of a special handling of elderly.

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23rd Annual John K. Friesen conference “Housing Alternatives for an Aging Population”
Vancouver, Canada, May 28-29, 2014

Keywords: Fine dust particles control, IOT, effects of fine dust particles on elderly people, indoor air quality control service

*Figure 1 Configuration to manage the fine dust particles*
5. Title: INVESTIGATE THE RELATIONSHIPS BETWEEN FACILITIES MANAGEMENT AND RISK OF ELDERLY IN CARE AND ATTENTION HOMES

Authors: Mei-yung Leung, Assistant Professor, and Jingyu Yu, Postdoctoral Fellow, Department of Civil and Architectural Engineering, City University of Hong Kong.

The aging population is expected to reach 26.5% in Hong Kong (1) and 22.8% in Canada in 2031 (2). To tackle the rapidly aging problem, the government encourages the development of care and attention (C&A) homes to achieve active aging. Most of elderly depend on facilities in the C&A homes to compensate their physical and psychological problems and reduce risks and accidents (3,4). However, few studies have been conducted to investigate facilities management (FM) in C&A homes from the elderly perspective. This poster presentation aims to investigate critical FM components influencing elderly risks in the C&A homes. **Method:** A questionnaire survey was conducted with elderly residents in C&A homes to investigate the relationships between critical FM components and elderly risks. Post-occupancy evaluation method was used to evaluate the satisfaction level for the FM components in C&A homes. The data were analyzed using reliability analysis and Pearson correlation. **Results:** Based on extensive literature, 16 FM components have been identified including space planning, privacy, decoration, furniture, signage, finishes, lighting, temperature, ventilation, noise, safety, security, staff, hygiene, recreational facilities and catering. Four common elderly risks are also identified in terms of physical injury (e.g., falling, collision, twisted) scalding, behavior disorder and fire risk. The results of correlation analysis and comparison show that (1) physical injury is negatively related to space planning and noise; (2) behavior disorder was negatively associated with space planning, privacy, and catering; and (3) different types of elderly risks were inter-related. **Conclusion:** Based on detailed investigation for the impact of FM components on elderly risks, a number of recommendations are made for designing and managing C&A homes. Long distance between the living and activity areas should be avoid for reducing falling and collision risk. Chairs and flexible bench can be placed or fixed in the middle of a long corridor. Easily accessed bathrooms without curbs are suggested to be located close to living/dining rooms and bedrooms. It is necessary to add protection to any sharp angles to furniture, fixtures and walls in C&A homes.

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**Keywords:** Care and Attention Homes, Elderly, Facility Management, Post Occupation Evaluation

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6. Title: IMPROVE THE QUALITY OF LIFE FOR ELDERLY IN PUBLIC HOUSING THROUGH INDOOR FACILITIES MANAGEMENT

Authors: Mei-yung Leung, Assistant Professor, and Jingyu Yu, Postdoctoral Fellow, Department of Civil and Architectural Engineering, City University of Hong Kong.

The proportion of elderly aged 65 and over is currently 13.3% and expected to reach 26.5% in 2031 in Hong Kong (1), while the aging population in Canada numbered nearly 5 million in 2011 constituting 14.1% of the population (2). Due to decreasing health, most of elders prefer staying at home. Their quality of life (QoL) heavily relies on the indoor facilities in public housing (3,4). Previous studies have focused on the building design for elderly, but little research has investigated the impact of facilities management (FM) in public housing on the QoL of elderly. This presentation aims to investigate the relationship between FM of public housing and the QoL of elderly, and give some suggestions for improving the QoL of elders in the public housing.

Method: a questionnaire survey was designed to investigate the relationships between FM of public housing and QoL of elderly by using post-occupancy evaluation method. Considering the decline of cognitive competence, a five-point Likert scale was employed in the questionnaire. In the end, 60 elderly living in public housing for more than 3 months returned their survey. In order to understand the complicated relationships among FM and elders QoL, reliability analysis and correlation analysis were adopted by using the software SPSS version 20.0.

Results: Based on the extensive literatures, 18 FM components have been identified and classified into three main categories, which are space management (i.e. bathroom, kitchen, distance and allocation), building services (electrical appliance, toilet, power source, light, ventilation, temperature, noise, window, entrance, safety and security) and supporting facilities (decoration, barrier-free access and railing). On the other hand, four QoL factors have been identified, including biological health, psychological health, physical environment and social environment. The results of correlation indicate that (1) FM components are inter-related basically; and (2) FM components, including toilet, light, ventilation, entrance, barrier-free access and safety, are significantly related to the QoL of elderly.

Conclusion: The study innovatively investigates the impact of different FM components on the QoL of elderly with the post-occupancy evaluation method. Based on the findings, several practical recommendations are proposed, including a wide entrance with barrier-free access, the reposition of sockets to seating or table level and a low-speed air-conditioning machine for sufficient ventilation.

References

Keywords: Elders; facilities management; public housing; quality of life

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7. Title: A STUDY ON RELIEVING THE LONELINESS OF THE ELDERLY LIVING ALONE THROUGH LIGHTING

Authors: J.H. Lim, H.S. Lee, D.Y. Kim, H.W. Yoon, Yonsei University, Republic of Korea

In the book “Aging, Death, and Human Longevity - A Philosophical Inquiry” Christine Overall, a Canadian philosopher, discusses new types of conflicts and controversies that can appear as the life expectancy of people rises to 120, thanks to advanced medical technology. It demonstrates the fact that maintaining a high quality of life is crucial beyond extending the life expectancy of people. In particular, seniors living alone feel more depressed than seniors living with other people and suffer from a low quality of life, due to their physical challenges, rare interaction with others and a sense of solitude. To solve the issues of solitary death and suicide of the elderly population, which are social issues beyond personal issues, it is necessary to offer services that can relieve their loneliness in their homes, where they spend most of their time. **Method:** The causes of loneliness of the elderly living alone and the linkage to their physical and emotional characteristics were explored through preceding studies published at home and abroad. The purpose is to create methods of relieving the sense of solitude and loneliness of the elderly and apply them to their homes. Based on the results, indoor plan for relieving the loneliness of seniors were presented, as a light therapy using residential lighting. **Results and Discussion:** In living spaces, lighting is a critical medium that forms a relation between people and the environment; it also has a tremendous impact on the physical and mental health of residents. Most existing guidelines and standards for seniors appeared to have focused on illumination requirements for specific tasks. This study explains why the elderly population living alone feels lonely, as the population rises around the world, and presents a unique residential lighting plan accordingly. This study explains the method of controlling light that affects the depression, sleep disorder, and behavioral disorder of the elderly from psychological and physiological aspects by properly mixing natural daylight and artificial lighting, as therapeutic lighting. Such lighting system that takes into account the individual needs of residents could effectively reduce the sense of solitude and loneliness of the elderly living alone.

**References**


**Keywords:** The elderly living alone, loneliness, lighting

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8. Title: REAWAKENING THE CONNECTION: A POSTER PRESENTATION ON TECHNOLOGY AND PERSON-CENTERED CARE

Author: Coreena Robertson, BHK, Director of Recreation and Communications, Fraserview Care Lodge

With the touch of a button we can now open up the world to our seniors facing memory challenges, reawaking them to what they have lived, cherished and loved. Fraserview Care Lodge, the first complex care facility built in Richmond over 40 years ago is successfully implementing a ‘media room’ to improve the delivery of person-centered care. Several forms of technology are successfully being used, documented and recorded. These include:

- A touchscreen desktop with an adapted Skype program specifically designed for seniors
- Boomerang MIND by Intellicare - Content created to intellectually stimulate Alzheimer’s and dementia clients
- An apple TV / Wi-Fi connection for live viewing of photos, videos and specifically designed intellectual content for Alzheimer’s and dementia clients
- A swivel head laptop for portable use
- Main computer for setting up email and using the internet with family members, staff and volunteers
- Apple iPads for viewing intellectual content and communicating with larger TV areas that are connected to the Apple TV

Using the various forms of technology we are increasing both the quality and the quantity of visits with our seniors. We are effectively using our media room and specifically created content to reduce challenging behaviors and isolation, stimulate intellectual activity and provide emotional connection with a person-centered approach. Taking a 360-degrees approach, technology is being used to improve the connection between care givers and residents. Producing 2-min digital biographies we are pioneering a way to revolutionize the delivery of person-centered care, improving quality care with minimal outlay. In terms of future housing concerns, technology considerations are key to creating an optimum quality of life for the aging. Even in the existing structures, adaptations can be made that can significantly impact the experiences of those who are facing cognitive decline and who now require additional care. Are we ready to press the button and improve their lives?

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Metro Vancouver is experiencing an ageing population at a time of rapidly rising market rents and little increase in fixed incomes. In the City of Richmond, 19% of senior-led economic family renter households are considered hidden homeless due to their risk of ‘economic eviction’ (United Way, 2011). This situation threatens the right of older citizens to age-in-place and puts them at risk for isolation and displacement from community. Regional policy has advocated for affordable housing as a potential solution to provide secure housing for older adults (City of Richmond, 2007). The provision of affordable housing in its built form is not sufficient to create a viable environment for aging: affordable housing needs to meet the sense of place needs of seniors, articulated through access to supports for active participation, opportunities to build and sustain social networks, and assuming a meaningful role in the community. **Method:** This poster presentation reports on the methodology design for a participatory, community-based project funded by the Vancouver Foundation, the aims of which are to (i) understand how sense of place is experienced by older people relocating into an affordable housing development (ii) translate these experiences into supports that generate and preserve meaningful aspects of place, and (iii) better articulate the role of older people and others as active ‘placemakers’ by bringing together older adults, planners and developers, service providers and local government.

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10. Title: A SMART ASSISTED LIVING HOUSE FOR RESOLVING LONELY EMOTION OF ELDERLY

Authors: Heui Won Yoon, H.S. LEE, D.Y. Kim, J.H. Lim, Yonsei University, Republic of Korea

We tend to heal our life challenges through memories of the past, and the reliance becomes stronger as we get older. In particular, we feel more nostalgic in our mid-life and old age than any other time of our lives, a rising phenomenon amid the rapid aging in recent years. Meanwhile, development of numerous digital technologies including IT-based home technology has facilitated communication between objects. In particular, IoT (Internet of Things) can create 'smart relationships' based on such unmanned interactions. However, such technologies are shunned by seniors who are accustomed to old, familiar things. They prefer things that hold their memories and those they have used for a long time. The rising elderly population age 65 and over and the elderly population living alone are associated with increasing loneliness and depression of the elderly. Although there are various causes of such loneliness, it is always related to the psychological aspects of the elderly. This study is aimed at incorporating the 'nostalgia' of seniors into their living space by considering their strong reliance on 'memories of the past' to relieve their loneliness. It uses IoT technology, an IT-based technology, to deliver spatial and physical records to seniors to relieve their loneliness. **Method.** In this study, the concept of 'nostalgia marketing' was adopted to relieve the loneliness of seniors. Nostalgic individuals miss the times that left them favorable memories. The tendency to rely on such memories becomes stronger as the current circumstances become more challenging and agonizing. Since nostalgia marketing is based on the common emotions of humans revolving around memories and nostalgia, rather than a passing trend, it is highly convincing and can create a great ripple effect. To spark up nostalgia among seniors, this study uses IoT technology, which stands for 'Internet of Things.' It is an effective tool for relieving the loneliness of seniors, since it pursues interaction with individuals as they access information conveniently. And study uses an imaginary scenario to proved it. **Results and discussion.** 'Nostalgia' can boost the self-esteem of seniors and make them feel as if they are connected to the society. Among the various causes of their loneliness, the greatest one is their personal situations where they have no one to rely on. Therefore, if they form social or personal ties with other people, their feelings of loneliness decrease, as their desires are satisfied. Also, seniors feel a greater sense of satisfaction when they feel valued and feel a sense of belonging. Thus, the imaginary scenario of this study was focused on boosting their satisfaction by using their 'memories of the past,' an element related to their nostalgia. ‘Nostalgia,’ a strong psychological tool, and IoT technology can effectively relieve the loneliness of seniors. The significance of this study is as follows. First, it can appeal to the elderly population through 'nostalgia marketing,' even though they tend to frown on new technologies. Second, it relieves the loneliness of seniors by reducing their sense of solitude, through nostalgia marketing and IoT technology. Third, this study presents an imaginary scenario to see whether nostalgia marketing and IoT technology can actually be applied in real life.

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