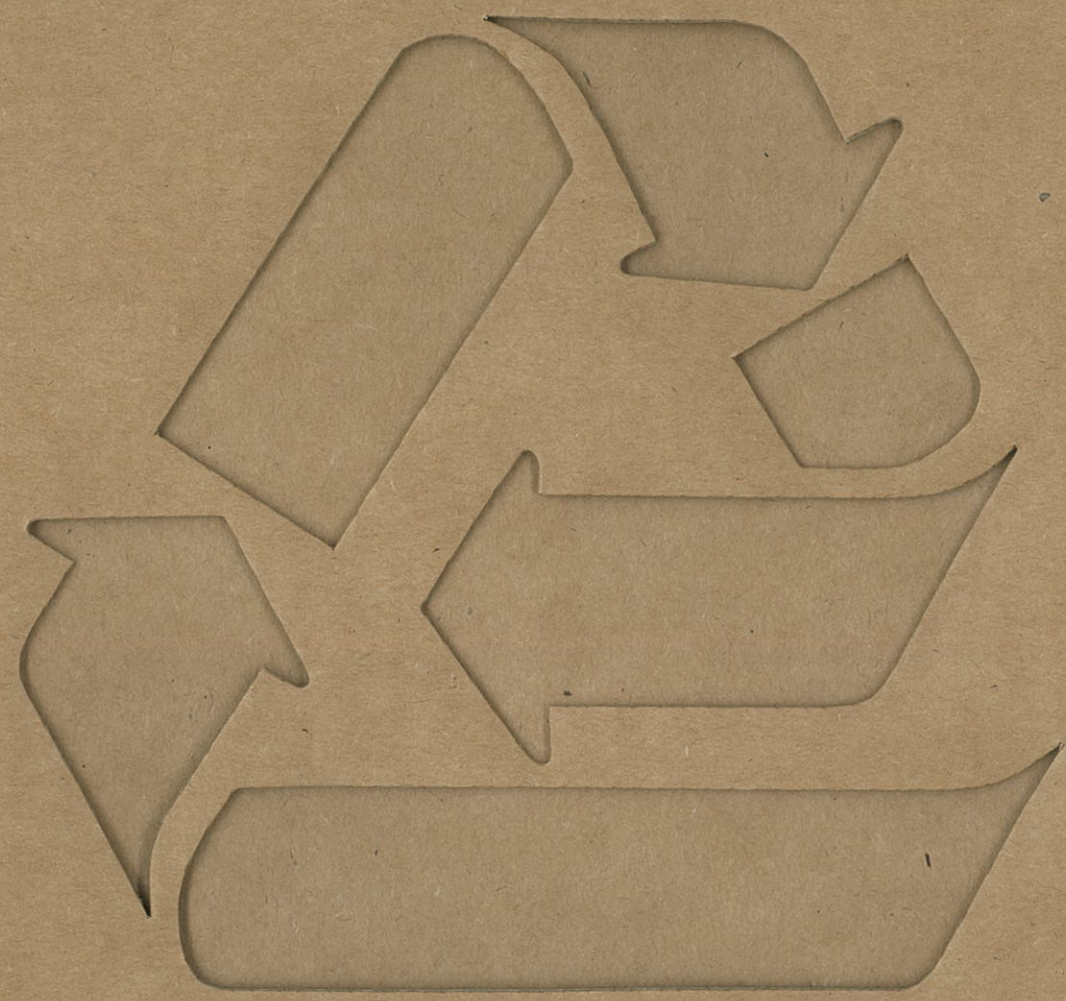


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Eco

## Eco

“We have but one explicit model of the world and that is built upon economics. The present face of the land of the free is its clearest testimony, even as the Gross National Product is the proof of its success. Money is our measure, convenience is its cohort, the short term is its span, and the devil may take the hindmost is the morality.” —Ian L. McHarg, *Design with Nature*

# The Making of Elderly-Friendly Places:

Investigating Urban Design, Ageing Population, and Social Sustainability

By CHONG KENG HUA

fig. 5a



## Introduction

Social sustainability has been gradually gaining global attention in recent years. Beyond environmental responses and economic reforms, social issues in cities such as liveability, quality of life, accessibility, equity, health, happiness, social capital, civic participation, etc. have since become important topics of urban development in many parts of the world. With the recent discourse and reconceptualization of social sustainability<sup>1</sup>, it is timely and important to revisit the existing urban development framework, to bring in a more people-centric approach towards designing and managing cities. Especially in a high-density urban context, where people face the constant challenges of negotiating diversity and difference in close proximity, how spatial design and social programmes are integrated becomes crucial in achieving a sustainable development.

The issue of an ageing population also demands a more socially driven approach in planning urban infrastructure. It is projected that senior citizens will make up 21.1 per cent of the world population by 2050,<sup>2</sup> many of whom will live in the cities. Not only more hard infrastructure such as healthcare, housing, transport, etc. need to be catered for, but also “soft infrastructure” such as outdoor public places and social participation.<sup>3</sup> These soft infrastructures play a critical role in coping with the ageing process of the individuals by providing a more liveable and enjoyable environment for all ages, particularly in the context of high-density living.

While there are several concepts revolving around ageing and urban living that cater

for an age-friendly environment, ageing-in-place, active ageing, etc., the reality is often more complex. These concepts need to be contextualized in order to capture how each place and community interprets and deals with ageing locally. The role of public places, particularly the collaborative, local place-making initiatives by or with the senior urbanites in cities, become useful in understanding the relationships between built environment and ageing community. Through both research and application on design projects (which in turn provide evidence for research), we study how the needs of the current ageing demographics have changed, how public places are being developed and used by different ageing communities in relation to their changing needs, how participation can be performed, and in such process, how social sustainability can be achieved.

## Social Sustainability

One of the proponents of social sustainability, UK-based social enterprise, Social Life, defines social sustainability as:

*“A process for creating sustainable, successful places that promote wellbeing, by understanding what people need from the places they live and work. Social sustainability combines design of the physical realm with design of the social world – infrastructure to support social and cultural life, social amenities, systems for citizen engagement and space for people and places to evolve.”*<sup>4</sup>

As their works focus mainly on urban regeneration and development, the definition expresses a more practical approach towards the assessment of social sustainability particularly in housing development, and thus more concerned with well-being, social capital,

and quality of life at the neighbourhood level. It also encompasses the time dimension, as it is about the current and future quality of life of the people, illustrated by the four dimensions of their assessment framework—“amenities and infrastructure” (past attempts), “social and cultural life” (present experience), “voice and influence” (shaping of future), and “change in the neighbourhood” (impact over time).<sup>5</sup>

Social Life’s concept and assessment framework of social sustainability which provides a practical insight into the community’s strength and quality of life is largely based on the understanding of the “Three Pillars of Sustainability” or “Triple Bottom Line,” namely the environment, economic and social pillars for a sustainable development as identified by the United Nations Millennium Declaration.<sup>6</sup> Recently, an alternative concept has been proposed in which social sustainability becomes not just one category among others, but the very basis of sustainable development.<sup>7</sup> In the new “Circle of Sustainability” approach, sustainability is reframed as a social condition, incorporating four other domains—economics, ecology, culture, and politics. Economics and environment are thus treated as social categories, since to most urban communities, these issues are “embedded in the resilience and wellbeing of the social unit as a whole” and not externalities.<sup>8</sup>

Moreover, by bringing social tensions to the front, various issues can then be explicitly negotiated according to temporal (present, near-future, far future) or spatial (local, neighbourhood, city, regional) dimensions, as illustrated by how conflicts between

economic and environmental activities can then be viewed as a struggle between short-term and long-term social benefits. Further development of this approach sees sustainability “intersect with other social conditions, such as resilience, liveability, adaptation, innovation and reconciliation, as basic conditions of positive *social life*.”<sup>9</sup> It is with such a holistic framework of social life which encompasses sustainability that we attempt to build our study of urban design and ageing.

## Urban Design and Ageing

Since the 1990s, there have been various urban planning reform movements which aim to improve both residents’ physical and mental health. One of these movements is Smart Growth Movement which was initiated firstly by the American Planning Association, US Department of Housing and Urban Development, and the Henry Jackson Foundation, and secondly from the Natural Resources Defense Council and the Surface Transportation Policy Project. The characteristics of this movement are mixed-land use, availability of open space, defined activity centres, walkable streets, and the importance of creating a greater sense of community.<sup>10</sup> Furthermore, recent design movement has emphasized the importance of creating informal social interaction, such as creating more opportunities for neighbours to meet each other. One way to do this is by having public facilities near each other or by having these facilities together.<sup>11</sup> The role of the elderly in decision-making about communities has also been more recognized, for example, in planning their own senior co-housing communities.<sup>12</sup> These changes in urban design implied that increasing the congruency between

1 S. Woodcraft, et al. *Design for Social Sustainability*, (Social Life: London, 2012); S. Woodcraft, “Understanding and measuring social sustainability,” *Journal of Urban Regeneration and Renewal*, 8, no. 2 (2014): 133-144; L. Magee, et al., “Reframing social sustainability reporting: towards an engaged approach,” *Environment, Development and Sustainability*, 15 (2013): 225-243; P. James, *Urban Sustainability in Theory and Practice: Circle of Sustainability*, (Oxon and New York: Routledge, 2015).  
2 Department of Economic and Social Affairs, Population Division, *World Population Ageing 2013*, (United Nations, 2013).  
3 *Global Age-friendly Cities: A Guide* (Geneva: World Health Organization, 2007); J. Gehl, *Cities for People*, (Island Press: Washington DC, 2010).  
4 Woodcraft, “Understanding and measuring social sustainability,” 133-144.

5 Woodcraft, “Understanding and measuring social sustainability,” 133-144.  
6 United Nations Millennium Declaration, a resolution adopted by the General Assembly, 8th plenary meeting, 8th September 2000.  
7 Magee et al., “Reframing social sustainability reporting: towards an engaged approach,” 225-243  
8 Ibid  
9 James, *Urban Sustainability in Theory and Practice: Circle of Sustainability*.  
10 E. Ewing, G. Meakins, G. Bjarnson, H. Hilton, “Transportation and Land Use,” in *Making Healthy Places: Designing and Building for Health, Well-being, and Sustainability*, eds Andrew L. D., H. Frumkin, R. J. Jackson, (Washington: Island Press, 2011): 149-169.  
11 M. Scott Ball, *Liveable Communities for Aging Populations: Urban Design for Longevity*, (Hoboken, New Jersey: John Wiley & Sons, 2012)  
12 C. Durrett *The Senior Co-Housing Handbook*. (Gabriola: New Society Publishers, 2009)

individuals and environment goes beyond barrier-free environment.

Consistent with these movements in urban design, Scharlach<sup>13</sup> has proposed that the “ageing-friendliness” of a community can be explained in the following aspects based on various theories of lifespan developmental psychology: “continuity” (ability to maintain established patterns of social behaviours and social circumstances), “compensation” (availability of products and services to meet the basic health and social needs of individuals with age-related disabilities), “connection” (opportunities for meaningful interpersonal interactions that foster reciprocal support and maintain social connectedness), “contribution” (lifelong need to make positive impact on one’s environment), and “challenge” (age-appropriate opportunities for physical, intellectual, and social stimulation to ward off the physical and mental decline caused by lack of stimulation). He proposed that physical and social infrastructure of a community should respond to elderly needs’ in these five aspects (abbreviated as “5Cs” hereafter).

Based on this concept of “ageing-friendliness” of a community in these five aspects, our research posits that active ageing and good neighborhood design are actually two sides of the same coin. This area of study has been relatively unexplored in Singapore’s context; we therefore conducted a pilot study at Bukit Merah to explore various relationships between the elderly’s psycho-social well-being and components of elderly-

friendly community based on Scharlach’s framework of the 5Cs, in order to understand their changing needs, their perception of the matured estate, and the implications on urban design. Our results postulate that different groups of elderly form friendships and participate in activities in both formal social service centres and informal public spaces. The friendships formed in these places and the convenience of amenities around their houses may affect their perception of their current residences.<sup>14</sup> Our results have also indicated that elderly residents are generally satisfied with physical infrastructure in mature estates, as in the case of Bukit Merah (for the reasons of continuity and compensation). However, the social infrastructure and urban design of the housing estate can still be improved to help the elderly maintain their *connections* with other people, and to encourage more *contribution* to the community. A comprehensive, integrated urban design is also needed to facilitate physical activities, social interactions, and active ageing among the elderly. To create a greater possibility of having chance encounters with each other and to enhance perceived cohesiveness, our results point to a more integrated planning and urban design of all these social spaces, improving connectivity, blurring their boundaries, and offering more variety of formal and informal public spaces to cater for diverse groups of elderly.

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**A comprehensive, integrated urban design is also needed to facilitate physical activities, social interactions, and active ageing among the elderly.**

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### An Ageing Singapore

Bukit Merah is just one of the mature estates in Singapore facing the challenge of an ageing population. In fact, the entire city-state is experiencing a tremendous age shift of its population. The total fertility rate has been lower than the replacement rate for over 30 years, while the average life expectancy has increased from 66 years in 1970 to 82 years in 2010.<sup>15</sup> Currently there are about 400,000 residents (10.5% of Singapore’s resident population) aged over 65 years. As the first cohort of baby boomers (those who were born between 1947 and 1964) turn 65 years old in 2012, more than 900,000 baby boomers, over 25% of the state’s current population, will retire at age 65 and above by 2030. This unprecedented ageing population has significantly challenged the small and densely populated city-state.

The government has planned to further increase the population to 6.9 million, to be achieved mainly through immigration, both for overcoming ageing population as well as for global competitiveness.<sup>16</sup> The natural solution to land scarcity is thus “going vertical”. In fact, since the early days of nation-building, guided by the principle of optimizing land use and economic potential, the centralized urban planning by the government agencies has formed a high-rise, high-density, transit-oriented urban environment. Hence, living, transportation, healthcare, recreational and social activities of the elderly all take place within the planned highly dense urban environment, especially in the high-rise public housing estates where most of them dwell.

The policies on ageing in Singapore are therefore intrinsically linked to such high-rise urban development. While the government has consistently emphasized on personal responsibility and the family’s role in eldercare, in accordance with Singapore’s “minimalist approach to social welfare”<sup>17</sup> the formation of every inter-ministerial committees on ageing issues over the past three decades has gradually evolved to anticipate future needs and propose how the government agencies can assist through urban social infrastructure and programmes.<sup>18</sup> The 1999 Inter-Ministerial Committee on the Ageing Population (IMC) Report called for collective efforts from each level of the society, including government, in realizing the vision of “Successful Ageing.”<sup>19</sup> The Eldercare Master Plan 2001-2005 released in 2001 by the Ministry of Community Development and Sports (MCDS) proposed community-based elder facilities be “planned and built as an infrastructure that is required for the community.”<sup>20</sup> The 2006 Committee on Ageing Issues (CAI) identified four strategic thrusts: housing, accessibility, healthcare and eldercare, and opportunities.<sup>21</sup> The Ministerial Committee on Ageing (MCA) in 2007 added “participation” as a key pillar of the ageing policy framework.

In response to social needs and to facilitate ageing-in-place, a network of easily available healthcare and social services to support senior citizens and their caregivers, manned by local residents and Volunteer Welfare Organizations (VWOs), have been in the proposals and plans by IMC since 1999. The committee

13 A. Scharlach, “Creating aging-friendly communities in the United States,” *Ageing International*, 37: 25-38  
14 K.H. Chong, W.Q. Yow, D. Loo and F. Patricia “Psychosocial Well-Being of the Elderly and Their Perception of Matured Estate in Singapore,” *Journal of Housing For the Elderly*, 2015b, 29, no. 3 (2015b): 259-297.  
15 National Population and Talent Division, *A Sustainable Population for a Dynamic Singapore*, Population White Paper, Singapore, 2013.  
16 National Population and Talent Division, *A Sustainable Population for a Dynamic Singapore*.  
17 K.K. Mehta and C. Briscoe, “National Policy Approaches to Social Care for Elderly People in United Kingdom and Singapore 1945-2002,” *Journal of Aging and Social Policy*, 16, no. 1 (2004): 89-112.

18 K.H. Chong, Z. Jia, D. Loo and M. Cho, “Successful Aging in High-density City State: A Review of Singapore’s Aging Policies and Urban Initiatives,” in eds Francis G. Caro and Kelly Fitzgerald, *International Perspectives on Age-Friendly Cities*, (New York and London: Routledge, 2015b).  
19 Inter-Ministerial Committee on the Ageing Population, Report of the Inter-Ministerial Committee on the Ageing Population, IMC Workgroup on Cohesion & Conflict in an Ageing Society, Singapore, 1999.  
20 Ministry of Community Development and Sports, *Eldercare Master Plan* (FY2001 to FY2005), Singapore, 2001, 15.  
21 Committee on Ageing Issues, *Report on the Ageing Population*, Ministry of Community Development, Youth and Sports, Singapore, 2006.

recommended “integrated community planning” of land-use for social services in town upfront, in which local agencies such as People’s Association (PA), Community Development Council (CDC), and VWOs be involved in the town-planning process to tailor services to meet the unique needs of particular communities and to ensure facilities are placed where they are needed.<sup>22</sup> The proposal was to have Integrated Multi-Service Centres within a network of “Family Social Service Stations” sited within the community. This plan has recently been realized with the new Senior Care Centre—integrating eldercare (day care, centre-based nursing, community rehabilitation and dementia care), service coordination to support families and caregivers, and community gym and social space open to all residents.

The CAI in 2006 subsequently called for more public places within housing estates and neighbourhood parks for seniors, in order to promote healthy, active living and social life. The committee also suggested the Housing and Development Board (HDB) and National Parks Board (NParks) work with Town Councils and grassroots organizations including the PA and Resident Committees to promote ground-up initiatives, such as allowing residents to “own” small plots of land for gardening and utilizing HDB void deck space for senior activities.<sup>23</sup> These void decks – ground

floor areas that are often intentionally left empty – are important common areas for social activities in public housing.

We propose a more collaborative “elderly-friendly place-making” approach in designing social spaces with senior communities. This approach builds on Scharlach’s 5C lifespan developmental psychology framework, particularly emphasizing connection, contribution and challenge which were found lacking based on our earlier research, through participatory design. This could be illustrated by the design process of SilverCOVE Senior Wellness Centre. Located at Marsiling, it is a project by NTUC Health with its conception and design in collaboration with COLOURS: Collectively Ours. The project is unique in a way that it caters for a particular segment of the seniors – residents of the new studio apartment (Fig. 1). They are from a unique demographic group, many of whom choose to “downsize” from their larger apartments, so that they can have more support while living in smaller, more manageable and comfortable space. A new type of social space or a “third place” for the seniors is thus needed to offer assisted living and facilitate ageing-in-place and active living for these new senior residents, and integrate them into the new community.

Fig. 1



### Elderly-friendly Place-making with Senior Communities

The SilverCOVE Senior Wellness Centre project took participatory design process to the next level, where its service model, programmes, and designs were results of participatory approach initiated by the designers from COLOURS together with the service provider NTUC Health. The new centre is envisioned to be a medical concierge with home monitoring systems as well as a commercial and social hub for the larger community in the vicinity. This integrated, inclusive approach is aiming at reducing NIMBY, the “not-in-my-backyard” syndrome, such that it would turn the former void deck around so that it welcomes both the elders and sometimes younger users on the ground floor, and becomes an inter-generational, positive addition to the community.

To achieve this goal, a participatory workshop was conducted with the new residents before the design of the centre actually commenced. The venue of the workshop was at the actual site of the new centre, i.e. at the void deck underneath their apartments, which allows the residents to physically feel and visualize how this place could be, and gave them a sense of what could or could not be done within the space, thereby managing expectations. Through visual activities, site walk-about, group discussions and interviews, the workshop gathered the residents’ input on programmes, spatial requirements and design preferences for the centre (Fig. 2).

These preference, suggestions, concerns, and desires were grouped into various categories, which helped to identify the different needs of the residents. For example, many residents wanted to have space enough for small group activities, such as cooking, gardening, exercising, and doing handicraft together; while some suggested having quiet corners for reading. Attention was also paid to their comments on the furniture, material, colours, and their preference for the overall feel of the environment. Together with NTUC Health’s programmatic requirements, which included two medical facilities

Fig. 2



1 — Studio apartments at Marsiling Road, with an enclosed void deck on the ground floor.  
2 — Participatory design workshop conducted at the actual site of the centre before the design began.

(dental care and Traditional Chinese Medicine), a common concierge, gym equipment, staff office and storage spaces, all data then led to the development of design concept—a changeable space with a feeling of openness that provides variety of programs and empowers the residents to do what they want anytime.

The final design of SilverCOVE departs from earlier Senior Activity Centre (SAC) typology elsewhere. While most SACs have very dedicated staff, are barrier free, and have attracted many seniors to use the space, our research shows that those who attend programmes run by SACs usually come from a certain demographic group. The interior environments also focus more on function rather than inspiration. There are various reasons for this, among them is the constraint of the physical spatial layout of the existing void deck with all the fixed columns and service ducts; this makes it challenging to plan for various SAC programs. SilverCOVE aims to provide more flexible programs and spaces to cater for diverse social and psychological needs of different kinds of seniors, as well as a comfortable and enjoyable environment not just for residents but also for staff members.

**To achieve this goal, a participatory workshop was conducted with the new residents before the design of the centre actually commenced.**

fig. 3



fig. 4



The overall design of SilverCOVE therefore focuses more on ambience (in addition to function), drawing in daylight and natural ventilation to create an open, bright and airy atmosphere, while offering maximum views to the greenery outside. A clear path is created from front to rear to allow free public access through the spacious lobby furnished with randomly hung light shades made of traditional bamboo food covers, nostalgic rattan chairs and coffee tables, thus encouraging more social interactions among the residents and the local community (Fig. 3).

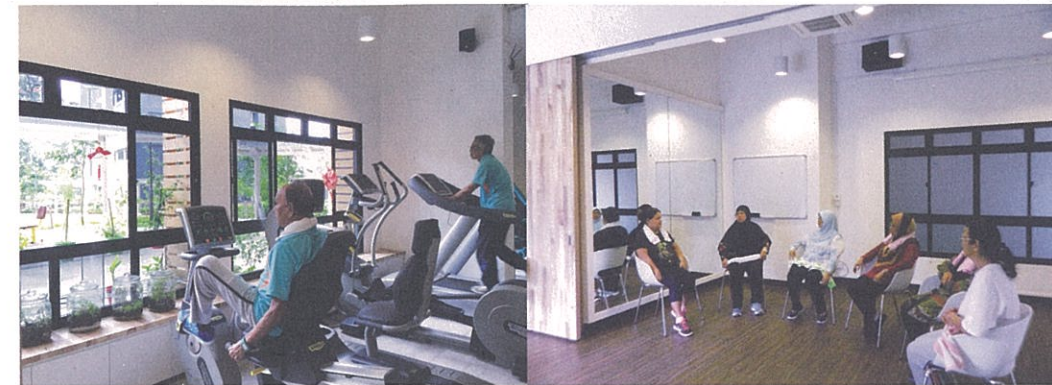
A modular pod concept is introduced for the medical facilities flanking the lobby space (Fig. 4). With sliding partitions, loose furniture, movable display shelves, and a pantry pod on rollers, most of these spaces are flexible and changeable in order to accommodate variety of programmes, from exercise, karaoke, mahjong, and reading, to holding events and talks (Fig. 5). The facade is also transformed into a gardening wall, empowering the residents to grow their own herbs and plants, thereby promoting green, active and healthy living (Fig. 6).

Changeability, openness, variety, and empowerment (COVE) thus form the four principles that guide the design of SilverCOVE (and to some extent, the conception of its name). Post-occupancy survey has shown that this new eldercare cum social space typology and participatory design process foster a sense of ownership among the residents. Some of the residents who were interviewed actually do not stay at the studio apartment but come from neighbouring blocks. One of the residents shared how she brought five potted plants to the gardening wall, comes down everyday to take care of them, and that she does so because it is a nice place to meet and greet neighbours. The place has thus proven to be inviting and inclusive.

**Reflecting on Participation**

SilverCOVE could possibly serve as a precedent for public place design with the elderly. It can foster a sense of ownership and sense of place both among the senior residents and the larger community. While the actual design itself may not necessary apply to other void deck areas, as every

fig. 5b



place, its context and the people living there could differ vastly, such an ageing-friendly place-making approach is possibly more transferrable in general.

Through this approach, we could achieve a higher sense of ownership of a place by its residents, thereby building a community in a more natural way. This does not mean that the residents have to literally “own” the space. As long as they can access, occupy, modify, or appropriate the space for their collective purpose, to various degrees they are changing the meaning of the space and conferring it the value of a “place.” In other words, this place becomes meaningful to a particular group of people as well as people around them.

The design process—if purposeful, carefully crafted, and managed by experienced facilitators who are well-trained in communicating and uncovering the unique assets, latent needs and even contrasting demands of a particular community—can be translated into development strategies and meaningful ageing-friendly designs, not only for the seniors but for everyone.

**Project Credits**

Research projects by  
SUTD Social Urban Research Groupe (SURGe)

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COLOURS: Collectively Ours LLP

(1) SilverCOVE Senior Wellness Centre  
in collaboration with NTUC Health

Design Team  
Prof. Chong Keng Hua, Kang Fong Ing, Syafiqah Aziz

fig. 6



3 — Naturally ventilated lobby offers an open, bright, airy ambience, functioning as a social and commercial hub for the community as well as a medical concierge.

4 — Healthcare modular pods inserted among the closely spaced columns on both sides of the lobby.

5a & 5b — Reading corner, mobile pantry, gym corridor and multi-function room to offer variety of programmes and changeable spaces.

6 — Despite the constraint of 400mm width within the site boundary, the façade was transformed into an active gardening wall that empowers the seniors to grow their own plants, which has since become a natural place to meet and greet neighbours.