

DESIGNING AGE-FRIENDLY NEIGHBOURHOODS

The need for age-friendly neighbourhoods

Ageing is a lifelong process that results in physiological and psychological changes, which affect aspects such as sense of sight and space, tactility and stability, and cognitive ability.

These changes may affect how we experience our neighbourhoods. Good design of spaces in neighbourhoods can support seniors' mobility and encourage them to go outdoors. Since being mobile can enhance cognition, improve physical performance, and give more opportunities for interaction with others, such design can help our physical, mental and social well-being.

'Innovative Planning and Design of Age-Friendly Neighbourhood' Research Study

Led by the Singapore University of Technology and Design (SUTD), this multidisciplinary research study investigated three neighbourhoods in Singapore (Toa Payoh West, Hong Kah North and MacPherson) to better understand older adults' (aged 55 and older) day-to-day interactions with the built environment and the effect on their overall physical, social and mental health. The project studied the three neighbourhoods as they had a high percentage of older adults, and mixed residential building typologies.

The project brought together multiple partners from different sectors: SUTD, Geriatric Education and Research Institute (GERI), and three architecture firms (CPG, Lekker Architects and Tierra Design), in collaboration with agencies (URA, HDB, BCA, AIC, MOH). The project was novel in scope and approach, as it covered the planning and design process.

By integrating research and design on healthy ageing at the neighbourhood level, the project's goal was to develop and deliver context-specific planning and design recommendations on improving the age-friendliness of neighbourhoods in Singapore.

The SUTD and GERI researchers first investigated the relationships between the neighbourhoods' built environment and older persons' physical, social and mental health, as well as their needs, activities, and travel patterns.

With the research findings, the architectural firms further analysed the neighbourhoods and carried out community engagement workshops to design site-specific interventions to improve the well-being of the seniors.

Designing age-friendly neighbourhoods

Aspects of such neighbourhoods include:

- a. Safety
- b. Walkable
- c. Inclusive public transport
- d. Engaging public spaces
- e. Therapeutic environment

The exhibition includes design initiatives that are already in place across the various aspects in Singapore. In addition, SUTD's research study with the architectural firms proposed design interventions for making neighbourhoods more walkable and engaging.

1. Re-designing existing connections by CPG (walkable environment)

Walking is a common way for seniors to get to and from their daily activities, and enables them to remain active. It is therefore important for healthy ageing.

However, 40 percent of the participants surveyed by SUTD reported a high fear of falling. This affected the seniors' outdoor experiences and restricted their mobility.

Research findings for Hong Kah North

While Hong Kah North consisted of seniors who were relatively young compared to the other study neighbourhoods, a significantly higher proportion of seniors indicated a high fear of falling. The research findings also showed that seniors tended to take a more familiar route along the main road, which often resulted in conflict with bicycles and heavy human flow, heightening the fear of falling. Though there were internal sheltered connections within the HDB blocks, these were perceived by the residents to be disconnected, indicating possible wayfinding difficulties.

Developing the design idea

Wayfinding can be cognitively demanding and research findings showed that seniors tended to rely on landmarks and visual cues to navigate. CPG proposed design ideas for the existing sheltered connections to ease navigation, and with features to mitigate falls and provide comfort.



Some of the design ideas were selected and refined for a small-scale prototype in a localised zone. Today, around Block 338, Bukit Batok Street 34, a painted motif highlights the sheltered connections. The block numbers along the path have also been enlarged with colour contrast for greater visibility. The initial on-the-ground respondents' survey reflected favourable responses. Majority of the participants not only found the design interventions to be useful as directional cues and for orientation, but also felt they brightened up the space and provided a unique identity for the place.



2. 'Walk-And-Play' by Tierra Design (engaging public spaces)

With more seniors living alone due to a desire for more personal space and independence, there is an increased risk of social isolation. Around 10 percent of the surveyed participants in a study by SUTD said that they had not ventured outside their homes over the period of one week.

An age-friendly neighbourhood can create places that encourage seniors to come out of their homes to interact with their community. A good mix of lively and quiet spaces for social interactions, regular exercise and cognitive stimulating activities can contribute to a person's quality of life and may even delay the onset of dementia.

Research findings for Toa Payoh West

There was a high percentage of seniors with dementia and cognitive impairment living in the area. At the same time, there existed a strong social network and community spirit, resulting in informal community spaces created by the residents.

Developing the design idea

Tierra Design explored ways to integrate play elements into the existing built environment, such as walkways and open spaces, to create opportunities for incidental cognitive exercise and social activities for the seniors in Toa Payoh West. This could

augment the strong social network and number of informal community spaces created by the residents.

The underlying premise of its proposal 'Walk-and-Play' is to allow play to happen everywhere. Ordinary moments such as walking to the MRT station or the wet market become opportunities for children, adults and seniors to play.

Tierra Design reviewed overseas examples of play features and studied the Agency for Integrated Care's (AIC) 'Knowing Dementia' Exercise to develop the concept of 'Walk-and-Play':

A. Agility Path

Lining a regular walking path with simple psychomotor exercises can encourage regular exercise during to and fro daily trips and help improve or maintain an individual's motor skills.

B. Mental Stimulation

The activities in this segment are designed to challenge cognitive and motor skills, while the colourful features promote sensory experiences.

C. Active and Play

The activity in this segment is designed to encourage inter-generational and group interaction, while encouraging the seniors to exercise physical coordination.

3. 'Kam and Goh' Mobile Kopitiam by Lekker Architects (engaging public spaces)

Developing the design idea

Lekker Architects designed the 'Kam and Goh' mobile kopitiam in response to findings that indicated there was a relatively high prevalence of seniors in MacPherson who lived alone and felt socially isolated with limited participation in community activities. These seniors did not feel safe to come out of their homes with the onset of mobility, visual and cognitive impairment. The premise that underlay the prototype, was that many seniors found the traditional kopitiam desirable because it offered a comfortable

and familiar environment at which to interact with others, and evoked a sense of nostalgia. If the kopitiam was mobile and brought to the HDB void decks where seniors lived, they might be more willing to come out of their homes to interact informally.

The prototype reconvenes familiar motifs from the traditional kopitiam, such as beverages and tile patterns, to provide aesthetic comfort and familiarity.

Community engagement and response

In May 2019, the mobile prototype rolled out for one week, deploying to two locations in MacPherson Estate. Operated by volunteers from the Active Ageing Committee of People's Association (MacPherson), the prototype was well-received by residents of the estate.

'Kam and Goh' successfully encouraged new social interactions, community involvement and a sense of belonging. On-the-ground surveys confirmed the following:

- The mobile kopitiam provided a social outlet for patrons who would otherwise be at home alone during the day, and was effective in seeding new social connections and creating a sense of community.
 - 53 percent of respondents were alone at home during the day
 - 85 percent of respondents preferred to be in a setting where other people were around
 - 88 percent of respondents interacted with somebody else at the kopitiam
- 91 percent of respondents felt comfortable with the mobile kopitiam furniture setup in the void deck
- The mobile kopitiam's proximity enhanced residents' willingness to come out of the house.
 - 38 percent of the respondents found the nearest kopitiam or hawker centre too far away to walk to safely or comfortably
 - 88 percent of the respondents were more willing to leave home if the mobile kopitiam came to the void deck below where they lived