



## **MEDIA FACT SHEET**

### **Dementia-Friendly Neighbourhood Study**

*Singapore's first local evidence-based dementia-friendly environment design project*

#### **Introduction**

1 This Dementia-Friendly Neighbourhood (DFN) Study is a collaboration between the Agency for Integrated Care (AIC), Centre for Liveable Cities (CLC), and the Singapore University of Technology and Design (SUTD). This is the first-ever study where research was conducted in Singapore. The infrastructure prototypes and environment design guidelines that arise from this study are directly based on the unique needs and feedback from persons living with dementia, their caregivers, and fellow residents.

2 The study was conducted in partnership with the Yio Chu Kang constituency, one of 16 recognised Dementia Friendly Communities (DFC) under the Dementia-Friendly Singapore (DFSG) initiative driven by the Ministry of Health (MOH) and AIC.

3 Two publications have been produced with the findings from this study - the Research Report and a DFN Guide. The Report consolidates what has been learned through the Study while the Guide serves as an important resource for urban planners and building sector stakeholders keen to develop more DFNs in Singapore.

4 The study is part of both the Singapore Together movement, which seeks to establish a partnership between Singaporeans and the Government in shaping a shared future together. It is also aligned to national efforts in strengthening care and improving the living environment for seniors.

5 The DFN study and the infrastructure prototypes in Yio Chu Kang constituency were launched by Prime Minister Lee Hsien Loong and Mr Yip Hon Weng, Adviser to Yio Chu Kang (YCK) Grassroots Organisations (GROs), on 2 December 2023, at Yio Chu Kang Day.

#### **Background**

6 The DFN study started in 2019, with the aim to empower persons living with dementia and their caregivers to continue leading secure, independent and dignified lives in their neighbourhoods and familiar surroundings. This has been achieved through prototyping detailed design improvements that are customised to the needs of persons living with dementia in the neighbourhood. The project seeks to make use of custom design improvements to better support the needs of persons living with dementia in the neighbourhoods.

7 Yio Chu Kang was selected for this study as it is an existing DFC with a notable number of seniors and persons living with dementia, as well as the strong presence of social service providers based in the neighbourhood such as the AWWA and Thye Hua Kwan Active Ageing Centre @ AMK 645. This whole-of-society effort facilitates the co-creation of solutions and ensures a holistic review to cater to the needs of seniors. To further scope the study, three precincts within the neighbourhood were selected for detailed study and engagement: Zones 2, 3, and 9.

## **Design and Implementation**

8 The study utilised a multi-stakeholder participatory research framework which gathered feedback from academic experts, government agencies and the community.

Various stakeholders were engaged through different platforms to co-create the study design prototypes:

- *March 2022: Engagement with local service providers and residents. Including Thye Hwa Kwan Hospital (THK), Asian Women's Welfare Association (AWWA), the National Parks Board (NParks) etc*
- *May 2022: Workshop with multiple agencies and stakeholders such as AIC, CLC, SUTD, MOH, NParks, Land Transport Authority (LTA), Housing & Development Board (HDB), Building & Construction Authority (BCA), SportSG, Urban Development Board (URA), MOH Office for Healthcare Transformation (MOHT), Ministry of Culture & Youth (MCCY), YCK Grassroots Organisations*
- *February 2023: Resident pop-up engagements (NUS, SUTD, AMKTC, THK)*
- *March-September 2023: Design development (SUTD, AIC, CLC, AMKTC, THK, Star Learners)*
- *October 2023: Post-implementation review (SUTD, Ngee Ann Poly)*

For more details on the research process, please see Annex A.

## **Design Prototypes**

9 The research team's findings revealed that, beyond the physical aspects, the psychological and social facets of the environment play a crucial role – embracing simplicity in choices, recognising the necessity for adaptation, as well as fostering delight and purpose. They sought insights from users and designers, which were then amalgamated into overarching generative design-thinking principles to guide the overall design process for dementia inclusivity.

10 The infrastructure prototypes were designed to be both physically and cognitively stimulating, which have shown to be beneficial for persons living with dementia. This is achieved via design analogies using "Lighthouses" and "Buoys". Lighthouses create delightful, comfortable and adaptable community spaces with purposeful programmes in proximity to existing social nodes. Instead of repetitive abstract signages, buoys facilitate simple choices for wayfinding at specific decision-points through engaging feature columns.



Pic 1: Open hard court nearby Blk 646

### A. The Blue Court

The newly designed prototypes on this hardcourt are - NeighbourRING, ‘Potluck’ tables (a sensory garden), ‘Swing Along’ and ‘Step Count.’

The hardcourt serves as a distinctive, recognisable, memorable, and experiential space for persons living with dementia, their caregivers, and the community. Each activity corner calls for a different set of intentional cognitive and physical abilities.

The Number Wheel and Step Count engage seniors in a guided cognitive game, while the mobility games provide varying degrees of physical and cognitive stimulation (e.g., hand eye coordination). Game-like elements help in sustaining interest over time.



Pic 2: NeighbourRING



Pic 3: At the Potluck Table



Pic 4: Swing Along



Pic 5: Step Count & Number Wheel



### B. Play Corner

Familiar landmarks in the nexus of key social nodes (e.g., childcare, market, key routes leading to the service provider) were reinforced as anchor nodes for persons living with dementia.

This lighthouse, with a personalised mural co-created by the children from the kindergarten, is a distinctive mark that reinforces a key junction leading to important social nodes in the neighbourhood. It also doubles as a pit stop for residents to orientate themselves (directional markers).



### C. Buoys



The buoys are located outside Block 645's chess corner and THK AAC. They are situated near key social areas, to reinforce familiar spaces in the minds of persons living with dementia, and double as rest stops with directional signs on routes between anchor nodes.

Individuals with cognitive disabilities may become overwhelmed in highly active environments. It is, therefore, ideal to include deliberate spaces within neighbourhoods for passive observation, such that persons living with dementia may still enjoy the bustle and vibrancy albeit from a slightly detached safe space which is calmer and less stimulating.

The signages used at buoys have clear and simple designs, straightforward language, and recognisable symbols.



#### **D. Floor wayfinding markers**

Mental maps are strengthened by making familiar paths to key destinations more legible and distinct, so that they are perceived to be safe and accessible.

This is done by introducing floor markers for wayfinding at key intervals. These aid persons living with dementia in decision-making and guide them along key routes towards the lighthouses and buoys.

#### **E. Tailored Programmes**

“Heartware” is equally important as hardware. Community engagement strengthened the *kampung* spirit in these neighbourhoods. The team worked with NParks, RC Zone 9 and THK to conduct therapeutic horticulture activity such as a plant propagation session on 10 October 2023. There are plans for NParks to train volunteers to lead these sessions in the long-term.



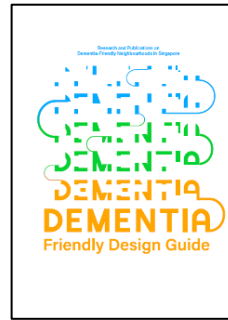
AIC also works closely with THK AAC and AWWA (CREST) to run tailored and enhanced cognitive programmes, making use of the design prototypes, including the Blue Court. They have been conducting the HAPPY programme at the Blue Court as well as arts and craft activities at the Centre. This is part of the broader AAC-CREST initiative driven by AIC.

The team also worked with Star Learners Pre-school that is located near the pilot site to include pre-schoolers in a floor painting session for the Tic Tac Toe corner on 4 October 2023. There are other plans to work with the RC, SportSG, schools and other stakeholders to organise more meaningful activities for the residents.

## Two New Publications: Research Report and DFN Guide



**Research Report**



**DFN Guide**

Research Report - **Creating a Dementia-Friendly Neighbourhood: A Yio Chu Kang Pilot Project**

The Report consolidates what has been learned through the Study by SUTD Social Urban Lab (SOULab), CLC and AIC, including the background of the dementia landscape in Singapore, the research process, key insights, the design principles, and the prototypes at Yio Chu Kang.

DFN Guide - **Dementia-Friendly Neighbourhood Design Guide**

The Guide contextualises the dementia-friendly design principles from the study and harmonises them with various guidelines & tools across different agencies such as CLC-AIC, HDB, NParks, MOHT and URA. This is part of the longer-term effort in working towards integrating it with the Universal Design Guide by BCA.

**Download the publications here:**



<https://go.gov.sg/clcbook-aicdementiafriendly>

<https://go.gov.sg/clcbook-aicdementiafriendly>



<https://go.gov.sg/clcbook-dementiafriendlyguidelines>

<https://go.gov.sg/clcbook-dementiafriendlyguidelines>

## New e-Learning Modules on Dementia-Friendly Environment Designs


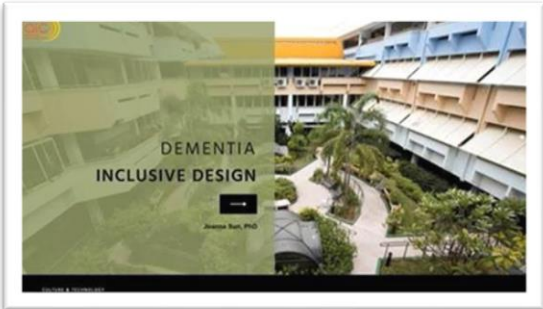


Three e-learning modules were developed to create awareness and build the capability to equip key stakeholders from the building sector as well as community partners with knowledge on Dementia-friendly Environment designs. This will enable more partners to create inclusive environments for seniors living in the community and to ensure the sustainability of the Dementia-friendly environments. (Refer to Annex B)

## Design Process Phases



1. **Sense & Understand:** This involves engaging and getting to know the various stakeholders in the project. It also includes walking the ground with persons living with dementia, caregivers, residents and stakeholders to understand the gaps and opportunities that can be worked on together. This stage also includes acknowledging the unique capabilities and capacities that everyone brings to the table.
  - a) Jigsaw Moodboard: A technique which uses picture pieces as a form of communication was utilised for them to express their responses in a non-verbal way. To understand their preferred daily routines, each person living with dementia was given a set of picture pieces, each showing a different feature in their neighbourhood. They were then asked to select pictures that would constitute an ideal day in their neighbourhood. This was followed by an interview with their caregivers to understand the “why” behind the selected pieces and understand their lifestyles, habits, and aspirations. Jigsaw Moodboard is a propriety method developed by COLOURS: Collectively Ours LLP.
  - b) Walking interview and participant observation - A pair of researchers accompanied a person living with dementia and their caregiver on a walk, with one asking questions along the journey and the other observing and taking notes. Through this approach, the researchers could note reactions and responses to the environment, in particular, wayfinding techniques, and spaces which they gravitated towards or avoided. During breaks on the walk, researchers would also ask caregivers to reflect on how comfortable, intuitive, or legible navigating the neighbourhood was. This helped to shed light on how the built environment could adequately support caregivers in their role.
2. **Review & Process:** This involves digesting and making sense of all the data that has been collected and formulate insights from this data that guide the rest of the co-creation journey.
3. **Ideate & Refine:** This involves translating insights into ideas through an act of creative synthesis. This is often an iterative process which includes crowdsourcing ideas and comments from the wider group of stakeholders to refine and validate the initial concepts. This is then followed by prioritising, refining, and planning with real-life considerations.
4. **Equip & Build:** This involves the community effort to build capabilities and capacities through organising co-building sessions with various stakeholders; partnering with key local community stakeholders like social service agencies to develop tailored programmes
5. **Monitor & Sustain:** This involves having a reflective mindset to enable the project to evolve and meet the changing needs of the community. This includes conducting a post-implementation review (PIR) with the community to validate the manifestation of principles and guidelines in prototype; continue capability-building sessions with local stakeholders and engaging other stakeholders to adopt principles and guidelines in their own practices for community stewardship.

**Dementia-Friendly Environment E-learning modules**

It is tiered to three levels to cater to various types of audience:

	Objective	Content
<p><b>Introduction level</b></p>  <p><b>An Inclusive Environment</b> DESIGNING INCLUSIVE ENVIRONMENTS FOR PEOPLE LIVING WITH DEMENTIA Joanna Sun, PhD</p>  <p><b>DEMENTIA INCLUSIVE DESIGN</b> Joanna Sun, PhD</p>	<p>To build awareness of dementia-friendly design</p>	<p>Part 1: Dementia-Friendly Environmental Design Principles</p> <ol style="list-style-type: none"> <li>1. Introduction to Dementia-Friendly environmental design and the role that a positive environment can have on dementia care</li> <li>2. Relationship between environment &amp; design and how the design principles can be applied in built environments in Singapore</li> </ol>  <p><a href="http://aic.buzz/DFE_DesignPrinciples">aic.buzz/DFE_DesignPrinciples</a></p> <p>Part 2: Leveraging on technology and cultural sensitivity in Dementia Care</p> <ol style="list-style-type: none"> <li>1. Principles of Dementia-inclusive design principles</li> <li>2. The role of technology and culture in Dementia-Friendly design</li> </ol>  <p><a href="http://aic.buzz/DFE_UseofSEAT">aic.buzz/DFE_UseofSEAT</a></p>



<p><b>Application level</b></p>  <p>The poster features a giraffe on a large orange rock in a park setting with a Ferris wheel and city skyline in the background. Text includes 'Be A Dementia Friend', 'aiC', and 'Dementia-Inclusive Environmental Design - Application'.</p>	<p>To enable stakeholders to apply the dementia-friendly design principles into their environments</p>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. What is 'Inclusive Design' for people living with dementia?</li> <li>3. What is the importance of having an inclusive environment?</li> <li>4. How can we design-inclusive environments? - Principles of Design</li> <li>5. What do dementia-inclusive environments look like in Singapore?</li> <li>6. What are some culturally adapted Dementia-Friendly Environmental tools?</li> </ol>
<p><b>Implementation level</b></p>  <p>The poster features a giraffe on a large orange rock in a park setting with people walking and a city skyline in the background. Text includes 'Be A Dementia Friend', 'aiC', and 'Dementia-Inclusive Environmental Design - Implementation'.</p>	<p>To enable stakeholders to evaluate environments for people living with dementia</p>	<ol style="list-style-type: none"> <li>1. Introduction to Dementia-Friendly Environmental tools</li> <li>2. What is an inclusive design for people living with dementia in Singapore?</li> <li>3. What is the EAT-lite Tool?</li> <li>4. What is the Singapore Environmental Assessment Tool?</li> <li>5. How to use the SEAT to evaluate Dementia-friendliness of an environment?</li> </ol>