

second beginnings

Senior Living Redefined

CHONG KENG HUA
KANG FONG ING

COMMISSIONED BY
LIEN FOUNDATION



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FOREWORD BY LIEN FOUNDATION

This book throws up ideas of new types of spaces that can meaningfully engage Singapore's growing ranks of seniors as they live out their golden years. We redefine the concept of senior living to encompass not just places of care, but also those that enable seniors to feel a sense of kinship with the community, as they exercise, learn, work or play.

Singapore has a rapidly evolving skyline. Iconic landmarks that define today's cityscape - such as the Marina Bay Sands, Helix Bridge or Gardens by the Bay - did not exist even a decade ago. Yet, while we have futuristic malls and museums, casinos and condominiums, purpose-built spaces for seniors either don't exist or remain largely stuck in the past. Some of our senior care centres, for instance, are devoid of colour and character, where dozens sit side by side, mostly on wheelchairs, watching TV, performing perfunctory exercises or sharing a meal at noon.

This needs to change. The Republic is one of the fastest ageing countries in the world, with the numbers aged 65 or older set to double to nearly a million in under 15 years. The seniors of tomorrow will be better educated and wealthier than the Pioneer Generation. With just one or two children - or none at all - they will have more diverse needs and higher expectations of how they would like to spend their senior years.

No single solution will fit all.

What if we were free to design from scratch to meet the unmet needs and aspirations of our seniors? What kinds of spaces, living arrangements, facilities or services could we imagine? How could we begin again with seniors as the priority? These were the questions we posed to COLOURS, a design consultancy that has been working on collaborative public space design, when we embarked on this project with them.

An age-friendly city is not only one that provides ramps and railings, wide walkways, ample public seating and wheelchair-friendly public transport. It is certainly not one that builds ghettos for the old. Instead, it is one where seniors can coexist in

harmony with people of all ages, feeling welcome and engaged in whatever they choose to do.

The big space crunch is a narrative as old as this Little Red Dot. We treat this as a challenge rather than an excuse and offer ideas to repurpose spaces, even as we help seniors find new purpose in their post-retirement lives.

The unused land below raised MRT tracks, for instance, can be transformed into a 'Viaduct Village' where seniors can run a cafe, a hair salon, or even care centres for children. Yet another idea is to convert disused industrial spaces into activity areas for seniors. The Old Kallang Airport Hangar can be morphed into a 'Hobby Factory' for seniors to pursue passions old and new.

While ideas like the 'Hobby Factory' and 'Viaduct Village' encourage seniors to embrace productive and creative pursuits, others like 'Giving Campus' help expand the mind and forge inter-generational ties. Yet others such as the 'Healing Stadium' and 'Garden of Life' explore new models of care in communion with nature while the 'Kelong Co-Op' offers baby boomers with shared interests an idyllic retirement community by the waterside.

These design experiments by our team of architectural collaborators at COLOURS are more than just imaginary flights of fanciful minds. The team has scoured the island to uncover unused or discarded spaces where some of the ideas can be rooted in reality. They have also highlighted examples of similar buildings elsewhere in the world.

Above all, the typologies proposed here illustrate the search for a wider variety of senior living and eldercare solutions that fast-ageing Singapore urgently needs today. We hope some of them will hold pride of place in our ever-changing skyline someday. Others, we hope, will provoke, inspire and ignite conversations on what kind of spaces and communities we want for our growing ranks of grey as their personal life stories reach a new milestone - age 65 - and a second beginning.



FACING PAGE

Seniors have appropriated an empty patch of land beneath a sheltering tree, laying out tables and chairs for them to linger, have tea, read newspapers - and watch the world go by.

LEFT

A houseplant dump was transformed into a healing garden by a squad of Plant Whisperers, who lovingly tended to and revived abandoned plants.

Introduction

Singapore is expected to mark a memorable demographic milestone in 2018. For the first time, the number of those who are 65 or older will match the pool of children aged below 15.¹ This follows the revelation last year that the number of seniors here has crossed the half a million mark for the first time.² Of them, around a fifth are already in their 80s or older.

In a bid to prepare for rapid ageing, the Government has been on a spree to build new hospitals and nursing homes. Programmes have also been introduced to promote wellness and improve care in the community so that the vast majority can “age in place” at home.

However, there have not been many attempts yet to push the frontiers of architecture and carve out new types of spaces which are universal in design but can be embraced by seniors as a place to call their own. That, in a nutshell, is what Second Beginnings aims to do.

Our work on age-friendly community design projects in several parts of Singapore entails interacting frequently with seniors, and involving them in the design process. Our site studies have often extended out of the actual site and into explorations of how seniors live, go about daily life, interact with others, and use spaces in the city.

It is interesting to observe how the seniors use certain spaces in ways other than

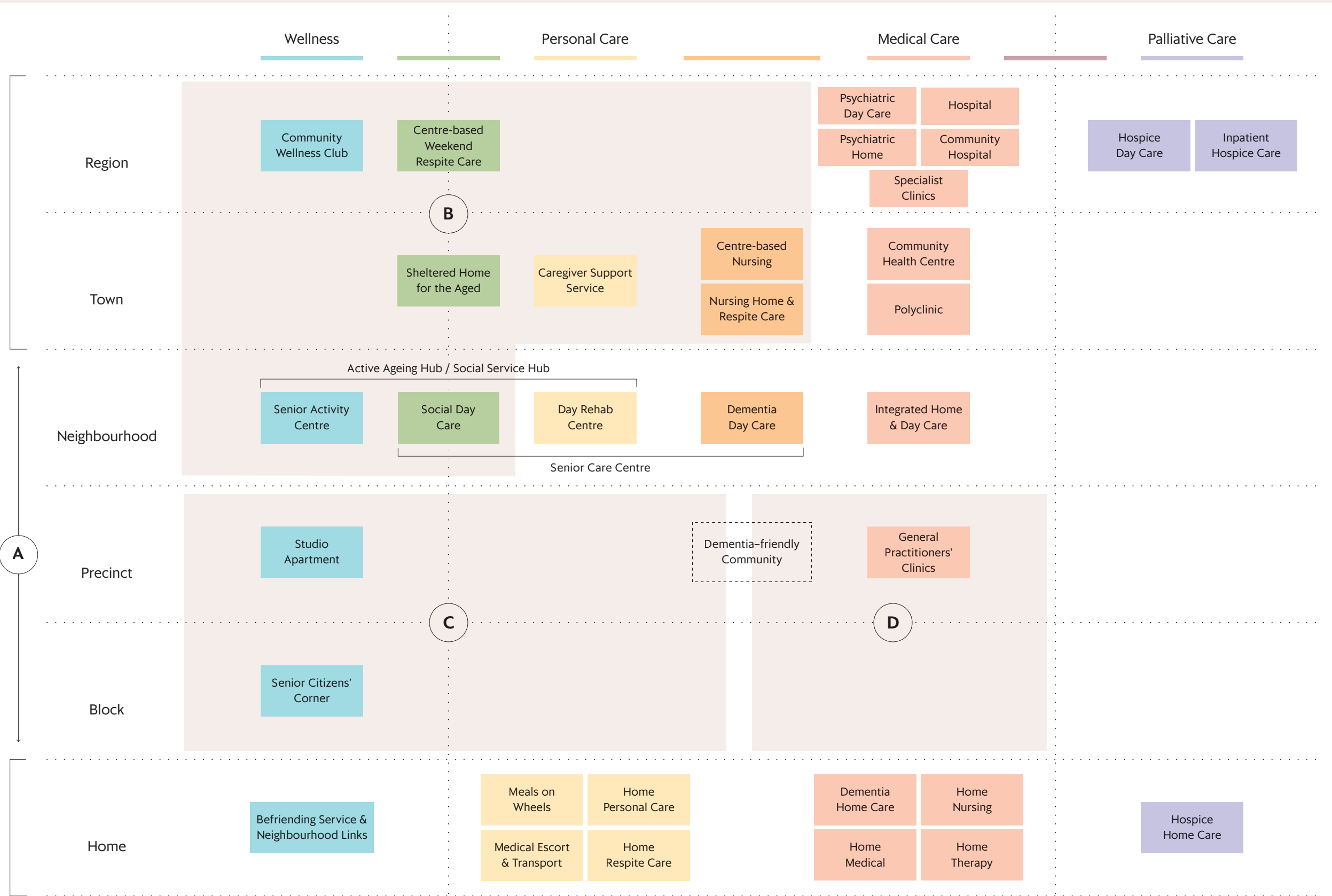
originally conceived or intended, but which respond to their needs.

This scene (see above), captured while we were conducting site studies in Jurong East, illustrates what we mean. It is a houseplant dump that morphed into a healing garden. This is where residents would abandon ailing houseplants. Nobody asked or instructed these women to care for the sick plants. They just did. Apparently, if and when the plants recovered, someone, possibly the people who dumped them, would take them away. So, with no official encouragement, but more importantly, without any official intervention to stop this harmless activity, a happy, healing experience is created from nothing more than a disused patch of greenery. Benign neglect on the part of officialdom has encouraged this neighbourhood to birth a squad of Plant Whisperers who cost nothing, demand nothing but, quite literally, find meaning in bringing life to an empty space.

Such unexpected encounters suggest that either we have not fully understood and catered to the residents’ needs, or that we need to provide more spaces that are informally yet deliberately left to them to appropriate. In many cases both are true.

The input we receive from seniors helps us to gain a better perspective of their hopes and needs as they journey into their late 60s and beyond. Many of them routinely acknowledge and appreciate the civic amenities they are able to enjoy, such

OVERVIEW OF CURRENT SENIOR LIVING LANDSCAPE IN SINGAPORE



A More attention seems to have been paid on both ends of the care spectrum, with institutionalised care and home care developing a greater variety of facilities and services, compared to community care at the block, precinct and neighbourhood level.

B Insufficient care differentiation, seniors with diverse needs are placed together in centralised institutions such as nursing homes.

C Lack of living arrangements seniors that integrate housing with professional-care services.

D A paucity of centres that offer intergenerational programmes and/or tap on other seniors for support.



FACING PAGE

A space to burn joss paper, demarcated by the railings, is adapted by two seniors into a vegetable stall every weekend, serving the residents who frequent the coffeeshop and hawker centre.

RIGHT

An ordinary HDB void deck is turned into a community living room, complete with old furniture donated by residents, as well as a workshop where retired seniors offer to repair bicycles.



as the peaceful parks, the ubiquitous exercise corners, the bustling coffeeshops, well-stocked libraries - and even the escalators, lifts, ramps and public seats meticulously provided for them. Yet some also feel they have little to look forward to. "Live one day, counted as one day" is a colloquial phrase that has been repeated more than once. And many fear a future when they may need to move into a nursing home.

The Government's focus on ramping up care infrastructure is not without reason. As of 2017, there were nearly 200,000 seniors aged 75 and above in Singapore³, the group that will most likely need care. However, despite recent additions, there were only around 25,000 nursing home, community care and home care places.⁴ By comparison, there were around 150,000 childcare places⁵ for 250,000 children⁶ aged six and below.

The demographic data coupled with the personal stories of seniors we interviewed made us confront many complex questions. How can we make the senior years truly a "Golden Age" in a person's life? Are there other living models or spatial typologies that can offer more fulfilling and exciting futures for seniors in Singapore? How can we turn longevity from being regarded as a burden to a sea of opportunity? And what if we can build on the strengths of our seniors - their

experience, wisdom, interdependence, network, and creativity, and reimagine our urban spaces and social infrastructure?

This book is an attempt to explore all this and more. The first four chapters throw up designs of spaces for seniors to work, play and be cared for within the community. The fifth is about a mobile senior activity centre created on a bus. The sixth to ninth chapters showcase various forms of assisted living options, while the final design envisages a new age hospice in a "garden of remembrance".

It is worth noting that unlike other advanced ageing nations, there are hardly any models for assisted living in Singapore, where residential apartments are coupled with personal care services and specially designed activities that help seniors keep active and engaged.

In order to redefine senior living in our cityscape, it is important to gain an overview of the current landscape first. As part of our background study we developed a matrix that charts facilities and programmes available to seniors (see table on pages 8-9).

The various types of care services - ranging from personal care and medical care to palliative care - are arranged along the horizontal axis, based on the facilities and services offered. Along the vertical axis, these are organised according



to size of the locale targeted or catered for, from the smallest unit - home, block, precinct, neighbourhood, town - to the largest unit of region (i.e. east, west, central, north, northeast) in Singapore, based on their number and distribution.⁷

The matrix provides several insights:

- More attention has been paid to both ends of the care spectrum, with institutionalised care and home care developing greater variety of facilities and services. There is less variety at the community level (block, precinct, neighbourhood). A recognisable trend is the grouping of facilities at the neighbourhood level to form larger service centres or “hubs”.
- Care is not differentiated sufficiently. Seniors with varying needs are placed together in centralised institutions such as a nursing home or home for the aged.
- Types of living arrangements are limited mainly to studio apartments, while dedicated social space at the community level is generally restricted to senior citizen’s corners and senior activity centres.
- At the community level, medical care is largely left to general practitioners. It is encouraging that there have been recent initiatives that aim to create a more dementia-friendly environment by involving the community.

- Apart from befriending services, there is hardly any inter-generational support for care in the community. There is room for more creative programmes that harness local resources, including getting help from seniors in the community.

William Thomas, the internationally acclaimed geriatrician who founded the Eden Alternative, and Janice Blanchard, a renowned gerontologist, explained that we have been trapped in a “false choice” between institutional long-term care and an idealised ageing-in-place vision. Healthcare institutions have traditionally been driven by a biomedical perspective on ageing that emphasises “dependency, loss, and decline”. In recent years, however, there has been a shift towards wellness and prevention. While ageing-in-place may appear a more economical and dignified solution, a senior who feels compelled to remain at home, the two experts said, could still feel the same negative experiences of “loneliness, helplessness, and boredom” as if he or she were living in a nursing home.⁸

To escape this false choice, we explore other possible models for senior living. Just as the matrix shows that there is certainly room to develop a greater variety of facilities, services and living arrangements for seniors in the community, we propose to enhance our urban landscape and social infrastructure through the following principles:



- **De-institutionalise** Bring healthcare services down to the community level.
- **De-localise** Break away from a geographic or location-based system that caters only to senior residents in a particular area, and move towards more interest-based, informal social spaces that attract people of different generations across the island.
- **Differentiate** Create differentiated care for diverse segments of the senior population - segmenting personal care from medical care, for instance, in residential care facilities. This will give rise to new senior living models within the community.
- **Develop** Focus on development and growth. Encourage seniors to grow old in the community and to seek mutual support among seniors and across generations.

As the million-strong baby boomers, born between 1946 and 1964, enter into their 60s and beyond, it is important to remember that they will have very different tastes, needs and expectations than the generations of before. Boomer seniors are generally better educated, more worldly, active, independent and health conscious than their parents and grandparents. They were part of large families, but went on to have very

few children themselves. They have means, are independent as well as more conscious of their health, they are also more free spending. Not only are they increasingly tech-savvy but they are also actively engaged in social media and connected to the world. The kind of eldercare they are likely to look for when facing retirement would probably centre around “friends, food and fun”.⁹ The current institutionalised, formal eldercare typologies are certainly inadequate for them.

It is with such understanding and urgency that we are proposing 10 new senior living typologies for the new generation of seniors. These typologies represent an array of ideas to redefine our care facilities, living spaces, and urban environment, as we approach a hyper-aged society.

We believe that this is only the beginning. In time to come, there will be a need for more diverse, innovative and responsive designs, so that future seniors can lead enjoyable, purposeful lives well into their twilight years.

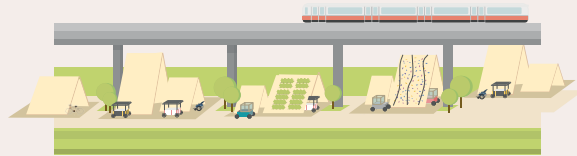
Senior Living, Redefined.

Each of the following architectural typologies emphasises a unique approach to design and offers new insights into engaging seniors in the community and at home. We have intentionally avoided common types of spaces such as the nursing home or studio apartments for seniors, as we hope that the architecture to cater to the seniors of tomorrow will be a major departure from what exists today.

The designs we present in this book are loosely grouped into two categories: decentralised wellness and care facilities and alternative residential living models. Many involve re-imagining or repurposing existing buildings, infrastructure or spaces found in the city. We treat Singapore's space crunch as an opportunity to spark innovation and to do more with less, rather than an excuse to maintain status quo.

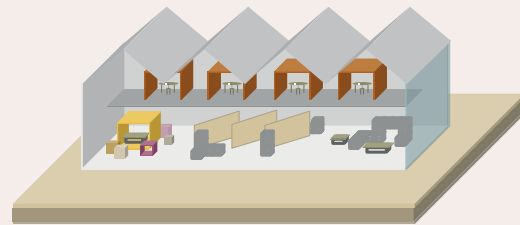
Some of the suggested designs are small scale, reasonably economical, and readily implementable plans. A few are highly conceptual but not impossible and aim to loosen, blur and expand the boundaries of current designs and policies. Our objective is to reimagine how seniors can live and redefine the possibilities.

1



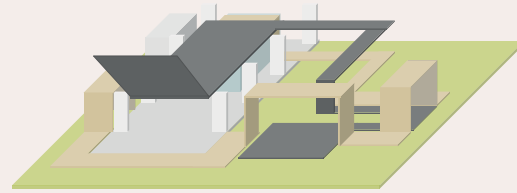
VIADUCT VILLAGE
p20

2



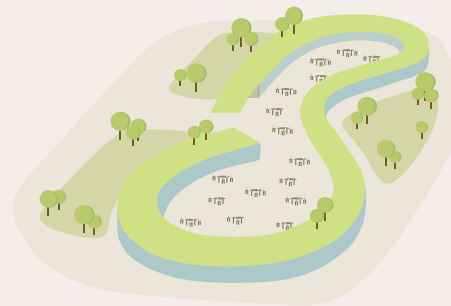
HOBBY FACTORY
p34

3



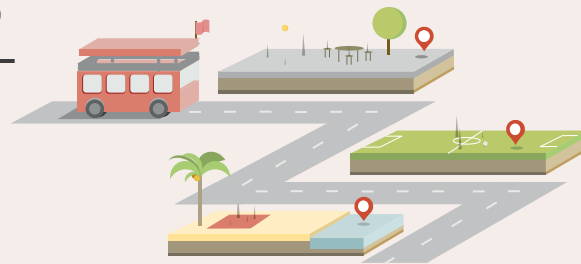
COMMUNITY POCKET
p50

4



WHOLESOME MARKET
p66

5



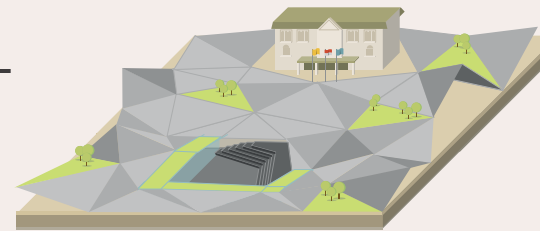
HAPPY EXPRESS
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6



HEARTLAND KAKI
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7



GIVING CAMPUS
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8



KELONG CO-OP
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HEALING STADIUM
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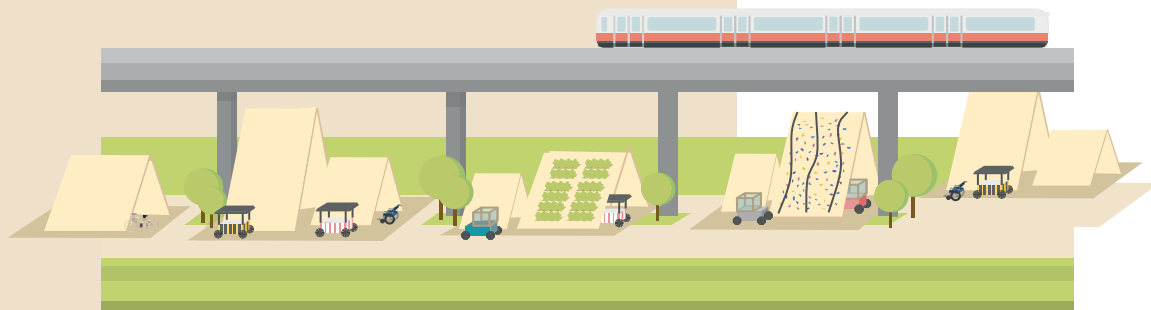
10



GARDEN OF LIFE
p150

1 Viaduct Village

An Interchange to
Empower Seniors to
Serve the Community



They could run a café, a hair salon or even care centres for neighbourhood children, frail older folk or those with special needs. Situated right next to a high-traffic MRT station, the Viaduct Village provides an oasis of opportunities for seniors to contribute to the communities they live in. In other words, it chooses to highlight the “growing” part of “growing older” and the “productive” aspect of what professionals have come to term “productive ageing”.

Often, it is opportunity more than ability that limits how much seniors can do for those around them. By transforming what many would consider a dead or wasted space under the elevated MRT tracks on the North-South and East-West lines into community hubs, we hope to offer imaginative and purposeful programmes – all created and carried out by seniors.

With a fresh lease of life, these underutilised spaces of today could become decentralised extensions of town and neighbourhood centres, offering such amenities as food and beverage outlets, barbershops, hairdressing salons, traditional herbal medicine shops, and facilities for childcare, tuition and after-school care for students and eldercare. Seniors with special skills can set up “repair kopitiam” for everything from bicycles and shoes to household appliances and furniture. Since this is near the public transport interchange, the bonus is accessibility and convenience.

By providing ample shelter for outdoor areas, we can encourage people of all ages and abilities to get out and about, creating a vibrant street life and adding diverse experiences just by repurposing the space. Not every feature that is added has to serve only a single function. Or only a certain age group. A gently-sloping roof may do double duty as a ramp for wheelchair users. Seats and terraces can be added for small-scale plantings. A steeper or higher roof may serve as a projection screen or function as a backdrop for outdoor theatre performances.

The possibilities to breathe new life into this dead, discarded space are endless. All we need is some imagination, progressive policies – and resources.

CASE STUDIES

Sugamo Shopping Street

Folly for a Flyover

see pages 22 – 23

SELECTED SITE

Jurong East MRT Viaduct

see pages 24 – 25

DESIGN DEVELOPMENT

see pages 26 – 33



CASE STUDY ONE

Sugamo Shopping Street

In Japan, the shopping street or *'shotengai'* has been a popular destination where people have traditionally shopped for food and such everyday items as umbrellas, hats and clothing, as well as visited temples along the street. As the country's population continues to age, retailers in Sugamo, a northern suburb of Tokyo, are focusing on making the area more elderly friendly by creating barrier-free environments, making certain roads car-free during certain hours of the day, and organising festivals throughout the year while sustaining a unique model of seniors serving other seniors.

LOCATION Sugamo, Tokyo
PHOTOS COLOURS



CASE STUDY TWO

Folly for a Flyover

In architecture, a folly is a structure that is intended mainly to be decorative though it may actually have other functions. Here, Folly for a Flyover is the name of this installation. The site was once only underused land under a motorway, until it was transformed into a public space with a cafe that offers outdoor seating. A temporary building erected between the flyovers became a performance space for cinema and theatre. Though it was taken down after nine weeks, the project drew so many enthusiastic visitors that local authorities have relented and agreed to let the site be used as a public space for a variety of activities.

YEAR 2011

LOCATION Hackney Wick, London

DESIGNER Assemble

PHOTOS David Vintiner



Potential Sites



1 Ang Mo Kio-Bishan MRT Viaduct

2 Lakeside MRT Viaduct



SELECTED SITE

Jurong East MRT Viaduct

DESIGN STRATEGIES

Productive ageing | Provide opportunities for seniors to contribute to the community

Urban acupuncture | Using traditional Chinese acupuncture as an analogy, this refers to an urban strategy to apply design interventions, usually in a small, underutilised space or a gap between buildings, to create a large impact in the community

Urban village | Create organic spaces that have the kampung spirit

Vibrant streetscape | Encourage a variety of activities along the streets

POSSIBILITIES

Coffeeshop / street food stall

Hair salon

Tailoring and alteration service

Repair Kopitiam (furniture / home appliance / bicycle repair)

Childcare run by seniors

Student care / learning centre

Senior day care / respite care

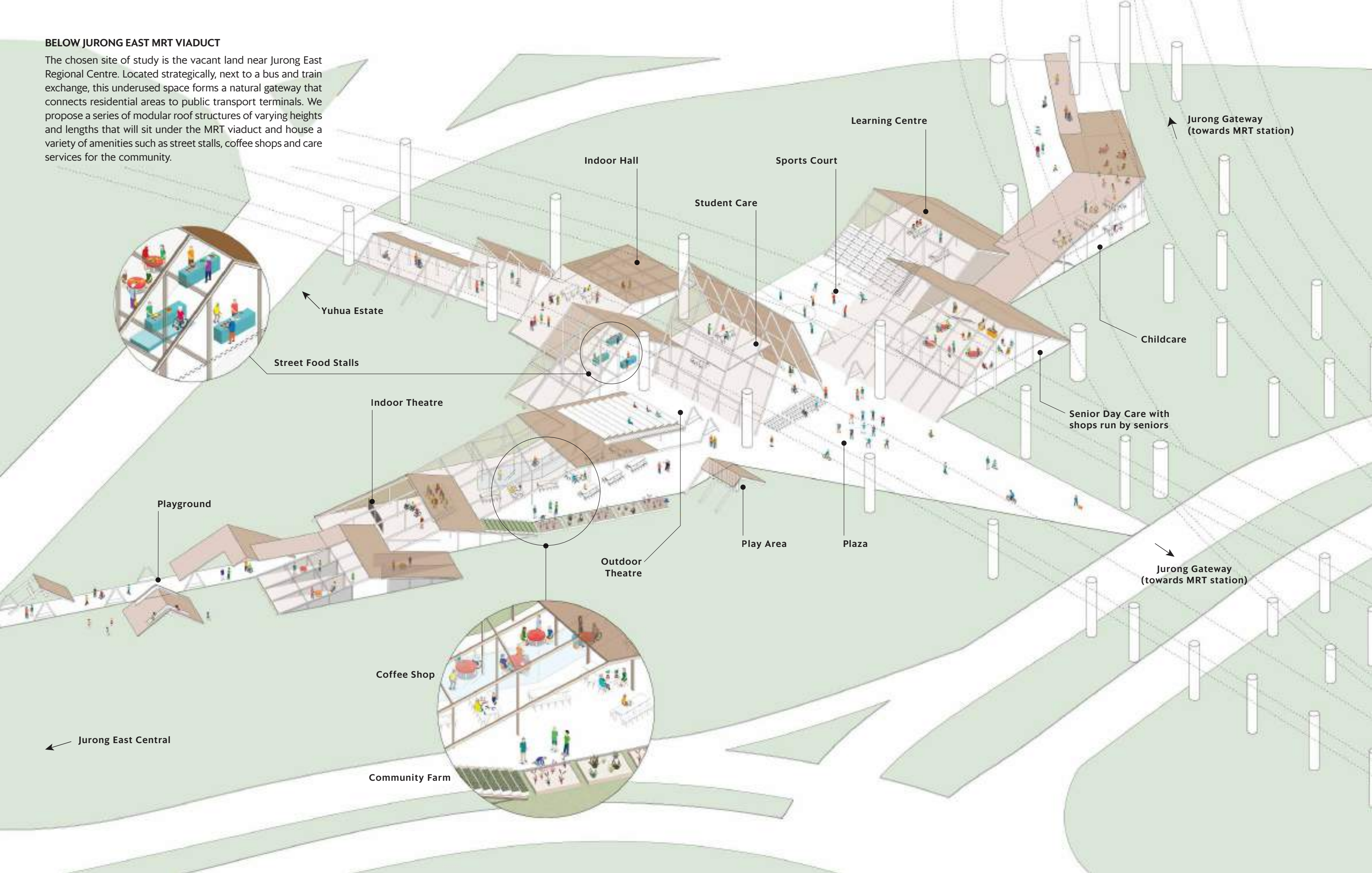
Community farm

Outdoor theatre

Sports court

BELOW JURONG EAST MRT VIADUCT

The chosen site of study is the vacant land near Jurong East Regional Centre. Located strategically, next to a bus and train exchange, this underused space forms a natural gateway that connects residential areas to public transport terminals. We propose a series of modular roof structures of varying heights and lengths that will sit under the MRT viaduct and house a variety of amenities such as street stalls, coffee shops and care services for the community.



Indoor Hall

Sports Court

Learning Centre

Student Care

Jurong Gateway
(towards MRT station)

Childcare

Street Food Stalls

Indoor Theatre

Senior Day Care with
shops run by seniors

Playground

Play Area

Plaza

Outdoor
Theatre

Jurong Gateway
(towards MRT station)

Coffee Shop

Jurong East Central

Community Farm

RIGHT

Add a coffeeshop, street food stalls, a community farm and other amenities to this underused patch of land, and something that is no more than a pedestrian passageway to an MRT station can become a popular neighbourhood destination amid a lively streetscape.





LEFT

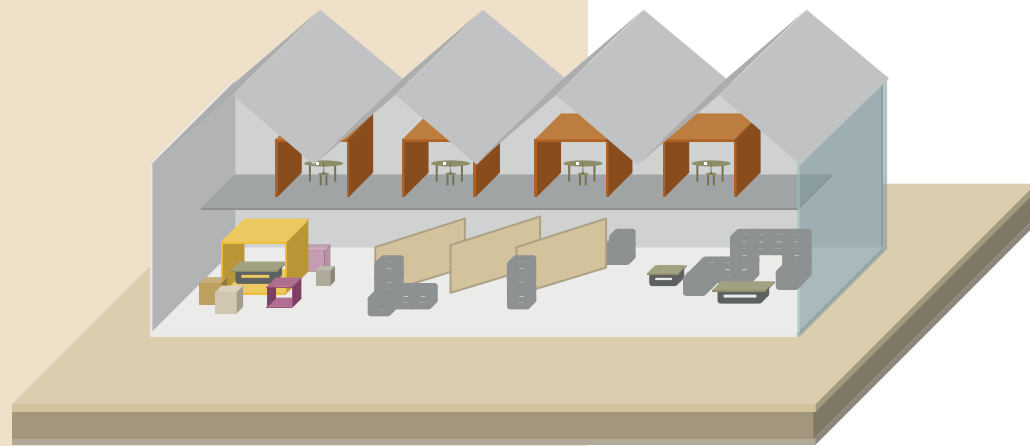
Ageing need not keep seniors from continuing to be an active and productive force in their communities. They can share their knowledge and experience by teaching skills such as computer literacy, run repair services or care facilities, and also enjoy outdoor sports with friends without having to travel out of their own neighbourhood.

OVERLEAF

A myriad of outdoor activities and indoor programmes for people of varying ages and abilities can be housed under modular sloping roofs transforming this under-utilised space below the viaduct into an Urban Village for everyone.



Co-working Space
for Seniors to Pursue
Their Dreams



2 Hobby Factory

Always wanted to join a pottery studio, bridge club, photography workshop or vintage car club but never had the time? Want to design a phone app for your fellow seniors to exercise?

The Hobby Factory is a place where seniors can pursue their passions, share work spaces and interests with likeminded peers, and, on occasion, even convert their hobbies into creative business start-ups.

Conventional senior activity centres provide safe and convenient venues for residents to pass the time chatting, watching television, singing karaoke, or playing Bingo according to a schedule that has been fixed for them. But the seniors of tomorrow will have far more varied tastes and interests. What if they are offered the opportunity to design and plan their own programmes and work in groups on alternatives that they might find more absorbing?

Hobby Factory prescribes no fixed timetables. The idea is for different groups of seniors to set their own schedules at the start of the day, and for the staff to distribute their roles and time to support these groups. Such a Do-It-Yourself (DIY) culture will encourage seniors to be independent and creative. Stimulating them mentally and physically to operate at their own pace in whatever pursuits interest them most is part of a deliberate process to spur “creative ageing”.

Our modular design enables different areas to be customised to suit varying purposes, for example, maker space, exhibition gallery, marketplace and meeting rooms. This encourages seniors to mingle and network freely, or get into production with others. The possibilities include but are not limited to creative arts, traditional crafts, and product design using cutting-edge fabrication technology for those keen to immerse themselves in what has become known as the maker movement, an omnibus term embracing independent designers, inventors and artisans. These creative tinkerers may set up new businesses that leverage on social media networking or even apply their business and management knowhow to become advisors to millennial entrepreneurs.

CASE STUDIES

Dream of Mizuumi Centre
Tonsley Park Redevelopment Main
Assembly Building & Pods
see pages 36 – 37

SELECTED SITE

Hangar at Kallang Airport
(Former Singapore
Civil Aerodrome)
see pages 38 – 39

DESIGN DEVELOPMENT

see pages 40 – 49



CASE STUDY ONE

Dream of Mizumi Centre

This is not your usual idea of a regular day-care centre with the same fixed routine for all seniors. In this Tokyo facility, seniors can choose a diverse range of activities from games and entertainment to baking and woodwork. There are at least four such centres in Japan and franchised ones elsewhere. Here, the seniors are not just visitors or clients. They choose and plan their own activities. They are also the ones who do most of the work. For example, they line up to get their own food and take it to the table on a pushcart. When they are done, they wash their cutlery and return it to the shelves. The clients of this centre are rewarded with a form of internal currency for successfully completing certain activities such as rehabilitation exercises. They can use it to redeem such treats as massages, tea, coffee or snacks, or even to learn a new skill.

YEAR 2005
 LOCATION Tokyo, Japan
 DESIGNER Shigeru Fujiwara
 PHOTOS COLOURS



CASE STUDY TWO

Tonsley Park Redevelopment Main Assembly Building & Pods

A pod is a small modular unit capable of serving varied functions. It can be a play area, an office desk or even a café table. The renting out of pods to various parties - known as pod tenancies - has enabled an adaptive re-use of the industrial Mitsubishi Motors building. Physically, the revamp respects the structure of the building in its current form, and has allowed the creation of highly flexible mixed-use work places. The pods are attractive, adaptable, flexible and highly functional for a variety of uses. In some instances, multiple tenants may use a single pod or work space.

YEAR 2015
 LOCATION Adelaide
 DESIGNER Woods Bagot
 and Tridente Architects
 PHOTOS Sam Noonan



Potential Sites



1 Industrial Building at Kampung Ampat

2 Former Pasir Panjang Power Station

SELECTED SITE

Hangar at Kallang Airport (Former Singapore Civil Aerodrome)



DESIGN STRATEGIES

Freedom to choose | Seniors choose the activities they want to engage in and decide their own schedules

Collaborative environment | Facilitates sharing of ideas, networking, and even the production, exhibition and sale of seniors' products, artwork and designs

Large open space | Allows flexibility of programming

Modular design | Enables spaces to be customised for different needs

POSSIBILITIES

Maker space / vintage car club

Pottery workshop / artist studio

Exhibition gallery

Music room / dance studio

Presentation / performance stage

Market place / shops

Active zone / video game lounge

Co-working area / cafe

Meeting pod / networking lounge



Pottery Workshop / Artist Studio

Active Zone / Video Game Lounge

Meeting Pods / Networking Lounge

Cafe / Co-working Areas

KALLANG AIRPORT HANGAR

The selected study site is part of the former civil aerodrome in Kallang, which has been known variously as Kallang Airport, Kallang Aerodrome, Kallang Airfield and RAF Kallang. The one-time airport is not only familiar to seniors who remember it in its former incarnation as the country's first civil airport but also to the national servicemen who were enlisted there when it was the Central Manpower Base from 1967 to 1972. With its open plan, high ceilings, abundance of natural light from a large expanse of windows and vintage interior design, this space will recreate the ambience of times past. It can be re-engineered into individual work/display units or pods that serve different functions. The modular design of the pods and the steel frame furniture allows for easy customisation of areas for a varied range of programmes and activities.

Music Room / Dance Studio

Office

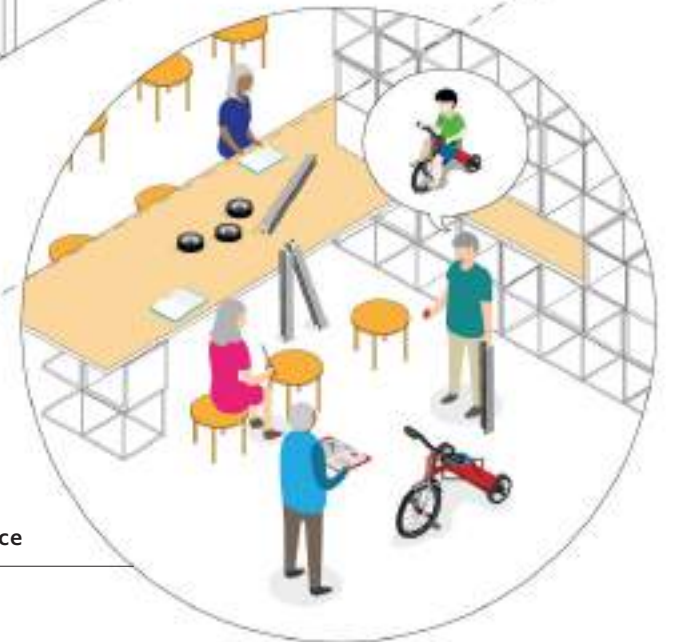
Market Place

Presentation Stage

Networking Area

Exhibition Gallery

Maker Space





ABOVE

A common area for all seniors, with a variety of physical activity zones and casual co-working spaces on the ground floor. Taking advantage of the generous height of the repurposed hangar, the mezzanine floor can be used for meeting spaces.



FACING PAGE

A market place for seniors to showcase their products overlooks a stage area that can be used for product launches, talks or other events to attract visitors and investors. It can also be used for networking with like-minded individuals.



ABOVE

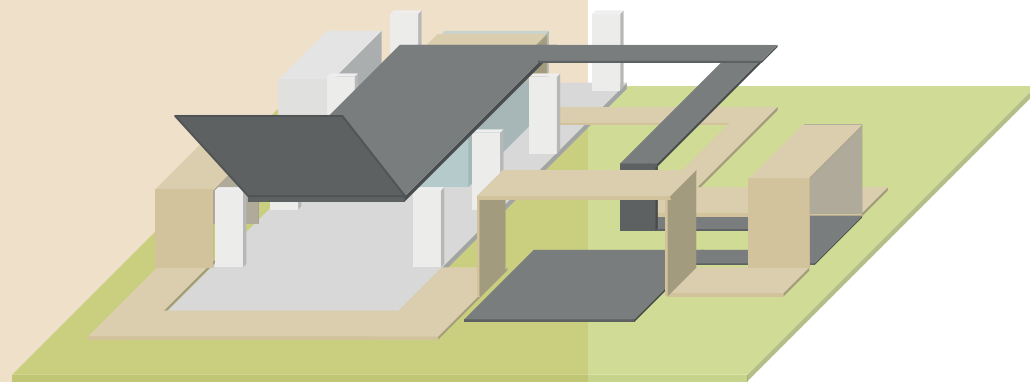
A gallery for exhibiting artworks such as large paintings and sculptures. Behind the panels are studios for artists in residence.

OVERLEAF

The maker space is located at the entrance of the Hobby Factory. Vintage car hobbyists, sculptors, potters and others will occupy the entrance foyer. Capitalising on the bright airy space presented by the hangar's glass façade, they create an independent and creative DIY culture.



A Launch Pad to
Connect Residents
and Create Resources
to Support Ageing in
Community



3 Community Pocket

The Community Pocket is a hangout for seniors in an HDB void deck, where residents can initiate interest-based activities, exercise, attend health checks and pick up skills to help other seniors in the community.

As hospitals and other healthcare facilities confront a relentless rise in the number of people requiring long-term care and an impending caregiver crunch, this typology aims to strengthen care at the community level and, at the same time, foster a culture of mutual support among ageing residents in HDB estates.

Unlike existing care centres at HDB void decks, this community hub will be open to all seniors in the precinct, and not just to those who are referred by healthcare professionals. Most parts will also be accessible 24/7.

With the aim to keep residents happy, healthy and helpful, the Community Pocket will be a go-to-point for seniors to take charge of their own lives and be equipped to support other more vulnerable elderly in their midst. It will run Lien Foundation's Gym Tonic, a customised strength-training programme for seniors which can be used by healthy older folk as well as those who need rehabilitation.

Seniors could get a chance to attend nutrition talks, prepare healthy meals, dine together and even distribute the meals to other residents in their block. They could also take ownership of a fence-free community garden and hone their green fingers together. Food waste from block parties could be used as compost for the garden, and fruits and vegetables harvested could be used in the regular cook-outs. Nurses will also drop by on certain days to conduct health screenings and check residents with chronic conditions.

Architecturally, the Community Pocket will feature a ribbon of spaces extending from indoors to outdoors, with a continuous shelter that allows pockets of activities to co-exist. While the void deck of a public housing block remains largely a public space for all, giving seniors more flexibility to use these pockets of spaces collaboratively can heighten a sense of ownership of the place, as well as a feeling of community.

CASE STUDIES

The Book Stop Project
Sha Tin Community
Green Station

see pages 52 – 53

SELECTED SITE

Chong Boon

see pages 54 – 55

DESIGN DEVELOPMENT

see pages 56 – 65



CASE STUDY TWO

Sha Tin Community Green Station

This repurposed space supports recycling efforts at the community level by organising exhibitions and educational programmes under a Hong Kong government initiative to promote a “reductionist” strategy in waste management. What is now the Sha Tin Community Green Station used to be an under-utilised carpark. It has been transformed into a gathering space that comprises an education centre, workshop, office and ancillary facilities. The government plans to develop a Community Green Station in each of Hong Kong’s 18 districts.

YEAR 2015

LOCATION Sha Tin, Hong Kong

DESIGNER Hong Kong Architectural Services Department

PHOTOS COLOURS



CASE STUDY ONE

The Book Stop Project

This project reintroduces the library as a place not only for reading and borrowing books, but also a space for human interaction and learning. Instead of adding a conventional library building, The Book Stop is a network of mobile reading spaces that injects new programmes into surprising locations across the city, thereby creating a platform that brings the community together.

YEAR 2016

LOCATION Philippines

DESIGNER WTA Architecture and Design Studio

PHOTOS Randell Tiongco



Potential Sites



- 1 Marsiling Drive
- 2 Nee Soon Central



DESIGN STRATEGIES

Holistic wellness | Promote physical, social and mental wellness through complementary programmes

Preventive healthcare | Bring preventive wellness programmes and long-term care down to community level

Pocket neighbourhood | Micro-scale intervention blurs the boundaries between indoor and outdoor spaces, encourages outdoor living

Fenceless community farm | Residents are entrusted to be custodians of this shared community asset

POSSIBILITIES

Gym Tonic (a customised strength training programme for seniors)

Rehabilitative therapy

Activity / event space (health talk / festival celebration)

Sheltered outdoor activity area

Health consultation room

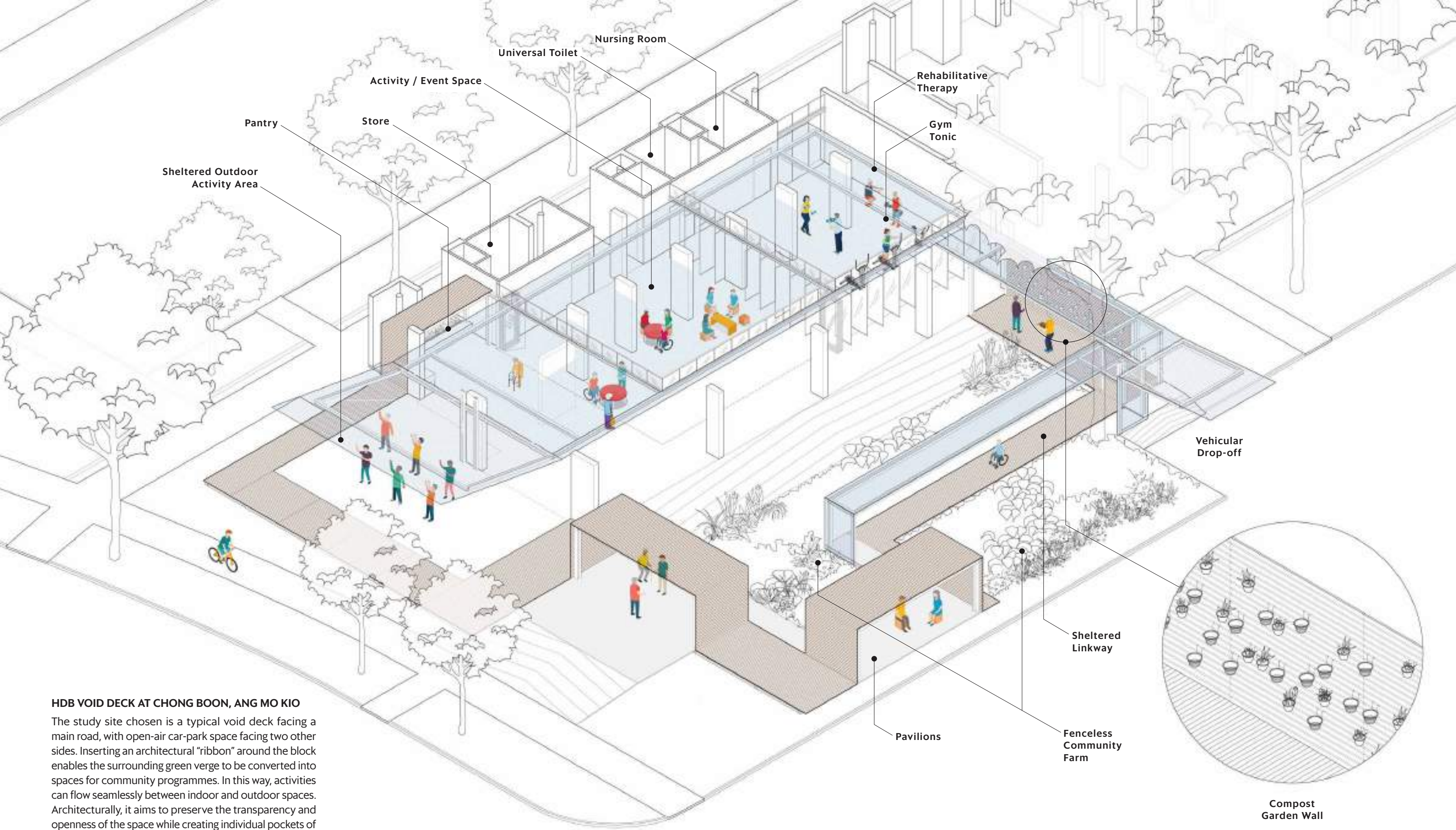
Pantry and community dining

Pavilion for reading / chess playing

Free-book library

Fenceless community farm

Compost garden wall



HDB VOID DECK AT CHONG BOON, ANG MO KIO

The study site chosen is a typical void deck facing a main road, with open-air car-park space facing two other sides. Inserting an architectural "ribbon" around the block enables the surrounding green verge to be converted into spaces for community programmes. In this way, activities can flow seamlessly between indoor and outdoor spaces. Architecturally, it aims to preserve the transparency and openness of the space while creating individual pockets of space that co-exist. The Lien Foundation plans to develop this typology in collaboration with TOUCH Community Services, which will operate the community hub.

RIGHT

A sheltered linkway passes through a fenceless community farm that projects inclusivity and promotes openness in the neighbourhood.





LEFT

Pockets of space are created for neighbours to mingle or to turn food waste into compost as a form of social activity.

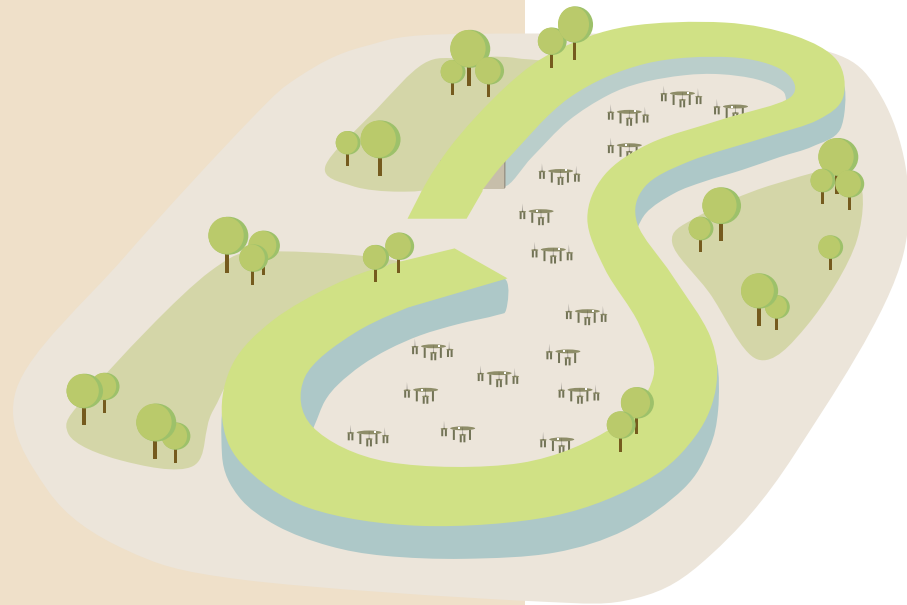


LEFT
Part of the void deck is repurposed as a Gym Tonic centre, a customised strength-training and rehabilitation area for seniors which overlooks the fenceless community farm.

OVERLEAF
Most of the void deck and outdoors remain largely flexible places that seniors can take over and use collectively for such activities as exercise. They may also want to use the space for cooking and dining, with the chosen activity flowing seamlessly from the void deck to the outdoors.



Weaving
Geriatric Care into
Seniors' Daily Routines



4 Wholesome Market

The Wholesome Market aims to weave care for seniors into their everyday routine. Thinking of seniors' healthcare in terms of a market at a neighbourhood centre does away with the clinical feel of "geriatric care" which may put some people off. Housing a variety of care services such as clinics to tackle geriatric assessment, falls and balance, and memory issues in a setting that includes food stalls is likely to change people's perspectives on long-term care as well as make it more accessible and convenient for those who need it.

Markets and food centres are familiar everyday places in the neighbourhood. But the very suggestion of a routine follow-up with a doctor, never mind a geriatric assessment or physiotherapy after a knee operation, adds a mental obstacle because it requires the effort of travelling to a hospital or clinic.

Co-locating places that offer geriatric care and healthy comfort food in the neighbourhood straightaway confers the double advantage of allaying anxiety while cutting down on travelling time for seniors. Instead of spending the better part of a day in a hospital waiting in line after line for tests, checks and consultations, they can linger with friends at the hawker centre while waiting for their turn to see the doctors or collect medicine.

Seniors may want to stroll up the curved ramp from the market entrance to the rooftop where they can mingle with songbird enthusiasts who frequent the bird-singing corner, learn taiji or gentle aerobics with exercise enthusiasts or visit the herb garden. The gentle gradient of the ramp promotes "stealth exercise", sneakily nudging even the most sedentary senior to exercise without making a conscious effort. This could even be a doctor's prescription. The circular form of the market, with a clear demarcation of the route, makes it easy for seniors with memory issues to meander in a safe and familiar environment. In the evening, the courtyard can become an event space for performances or health talks.

By creating a free-flowing architectural space where healthcare programmes, fresh food products and nutritious meals can overlap with physical and social activities, we aim to redefine the geriatric centre as an informal local market that makes long-term care a part of daily life for seniors.

CASE STUDIES

Besiktas Fish Market
New Gramalote
Market Plaza
see pages 68 - 69

SELECTED SITE

Jurong West St 41 Market
see pages 70 - 71

DESIGN DEVELOPMENT

see pages 72 - 81



CASE STUDY TWO

New Gramalote Market Plaza

After a catastrophic mudslide wiped out Gramalote in Colombia, near the country's border with Venezuela, the town had to be rebuilt. The new market plaza comprises 15 concrete modules which morph from columns into a wide-spanning roof. The columns also act as funnels that collect rainwater for irrigation. A separate structure of locally fired bricks encloses the plaza and functions as a permeable barrier that allows activity within the market to spill over into the public spaces around the building.

YEAR 2017

LOCATION Gramalote, Colombia
 DESIGNER Rodrigo Chain and Jheny Nieto Architects
 IMAGES Rodrigo Chain and Jheny Nieto Architects



CASE STUDY ONE

Besiktas Fish Market

The Besiktas Fish Market project is a community-driven initiative to revitalise one of most populous and diverse neighbourhoods in Istanbul, Turkey. The structure of the former fish market, a well-known landmark in a commercial district, had been in a dire state before it was rebuilt. A simple sturdy concrete and steel seashell-like form, which some have described as "iconic", now covers the entire site. It has large welcoming openings at street level. Not only does the porous shell provide shelter for a column-free area, but both its underside and top can also be used as platforms for art installations, injecting a sense of drama into a traditional market space.

YEAR 2009

LOCATION Istanbul, Turkey
 DESIGNER GAD
 PHOTOS GAD



Potential Sites



- 1 Jalan Kukoh
- 2 Sungei Road

SELECTED SITE

Jurong West St 41 Market



DESIGN STRATEGIES

De-institutionalise geriatric care | Expand efforts to bring care for seniors from hospitals down to the community. This includes geriatric assessment, chronic pain management, handling of falls and balance, cognition and memory issues; continence and geriatric rehabilitation

Symbiotic co-location | Couple conventionally unrelated programmes to promote healthy ageing

Time-based programming | Cooked food and market stalls by day; 'getai', performances, community events and health talks after sunset

Dementia-friendly | Create clear and safe route for seniors with dementia to move around in and meet other people in familiar settings

POSSIBILITIES

Geriatric assessment clinic

Falls and balance clinic

Memory clinic

Geriatric rehabilitation

Dementia day care

Hawker centre

Farmers market

Flea market (roof-top)

Herb garden (roof-top)

Bird-singing club (roof-top)

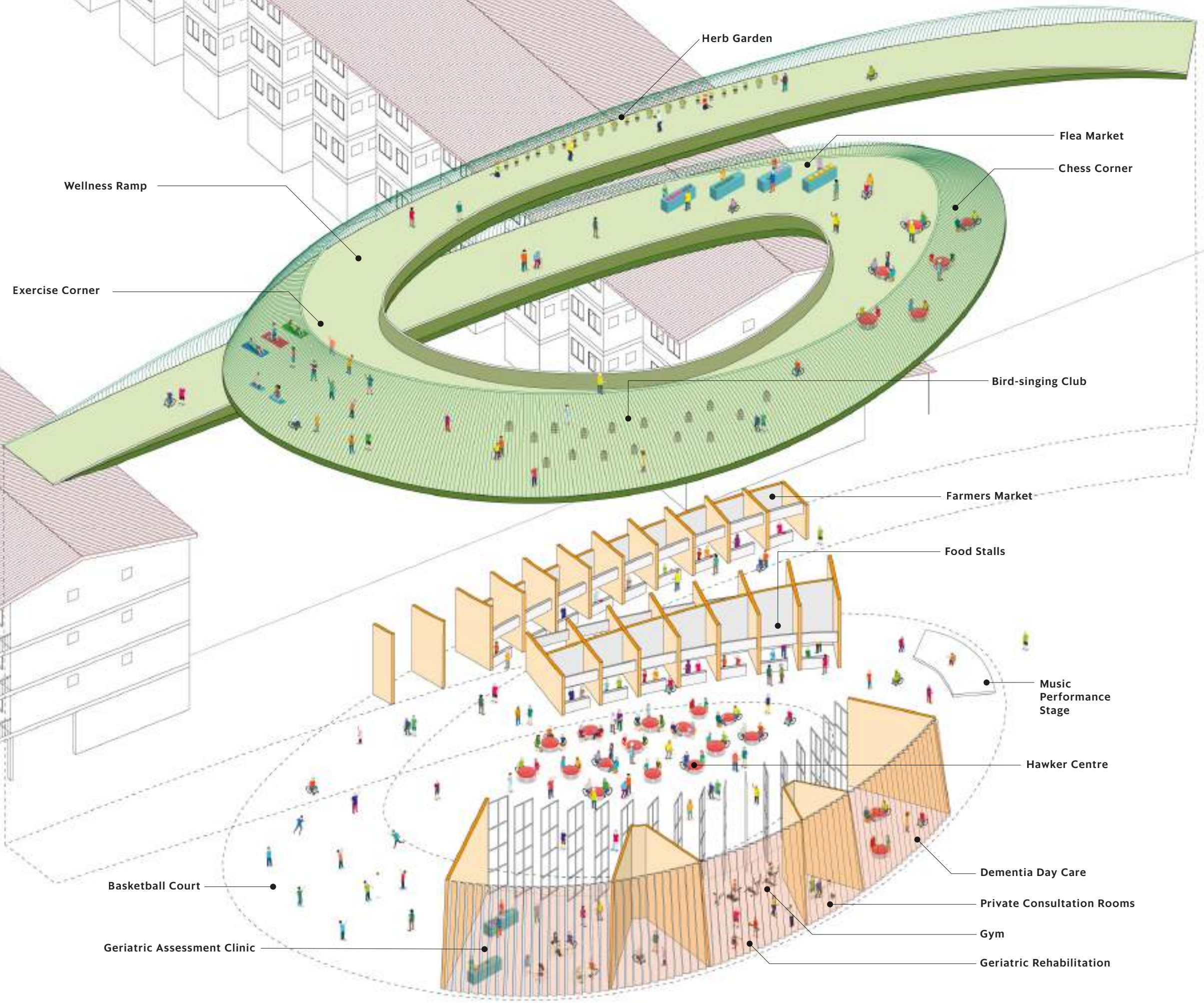
Exercise corner (roof-top)

Music performance / 'Getai' (evening)

Health & nutrition talk (evening)

JURONG WEST STREET 41 MARKET

The proposed study site is the former market in Jurong West Street 41 which was destroyed by fire in 2016. A temporary market has been built nearby to serve residents while a new market is under construction. Our vision is to bring specialist geriatric care out of hospitals and into the community, minimising the time and effort required of seniors who need to visit clinics, by making their healthcare an easy part of daily routine. This is not intended as a one-off solution only for this particular site but a typology that can be adapted island-wide someday.





LEFT

The site once housed a market in the heart of a neighbourhood centre. The proposed design for Wholesome Market marks its entrance with a huge ramp that gently leads visitors from the street level up to the roof.

RIGHT

With geriatric care and a hawker centre co-located under one roof, seniors can enjoy a cuppa with friends while waiting their turn to consult a doctor, nurse or therapist. In the evening, the courtyard transforms into an event space offering performances or educational talks on healthy living.



RIGHT

With high ceilings that allow natural light to flood an inviting cosy interior, the community geriatric centre provides a casual and welcoming setting for health-care professionals to chat with seniors. Private consultation rooms are available for those who want more privacy.

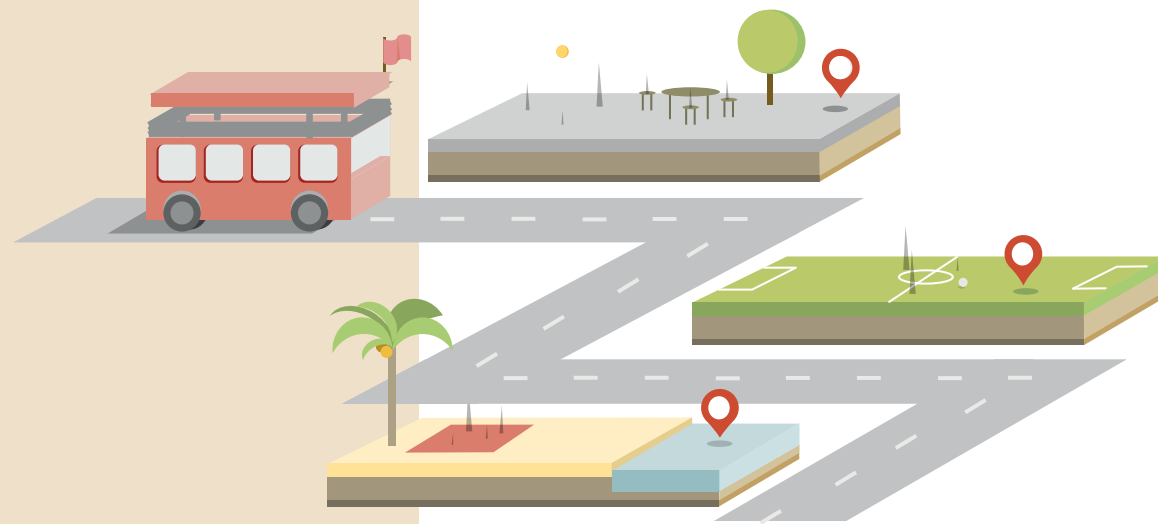
OVERLEAF

In addition to medication, doctors also prescribe physical therapy, including exercise, as part of the treatment. This includes encouraging seniors to take a stroll up and down the gently sloping ramp to the rooftop to enjoy the bird-singing corner or browse flea market offerings.





Senior Centre on the Move



5 Happy Express

Happy Express is a mobile alternative to standard eldercare facilities which are static and fixed. It is an old bus that connects seniors' favourite haunts and places of interest with familiar landmarks and predictable routes. It enables seniors to re-establish their independence and mobility in the city, encouraging them to be spontaneous in a safe manner while injecting vibrancy into the streets.

Many seniors prefer to travel by bus. Taking the bus shapes a large part of their independence and their daily landscape. Unlike conventional building typologies, Happy Express uses decommissioned buses which are redesigned and refurbished to meet the needs of seniors. The travel routes and destinations as the bus trundles around the island can be customised. For example, one might board this special bus at a local market close to home, making stops at a polyclinic, Chinatown, Orchard Road, Little India, Arab Street, and back again to the starting point at the market.

The bus is retrofitted as a mobile lounge with various entertainment options, including karaoke and television on the move. It will stop for an hour or so at certain pre-determined stops, such as in the older HDB estates, to offer riders and local residents health checks. Riders or staff may run a pop-up activity zone to attract other seniors in that area to join the island tour and also check their blood pressure, sugar levels, body mass index and visceral fat levels. Or they can just board the bus to browse magazines from its mobile library.

With a tour of senior-friendly places in Singapore, led by senior tour guides, Happy Express will also be open to members of the public who want to experience Singapore through the eyes of seniors and their textured memories.

CASE STUDIES

The Boulder and
24' Albuquerque
Lava Mae
see pages 84 - 85

SELECTED SITE

Big Splash Car Park,
East Coast Park
see pages 86 - 87

DESIGN DEVELOPMENT

see pages 88 - 91



CASE STUDY ONE

The Boulder and 24' Albuquerque

The Boulder and 24' Albuquerque are uniquely designed mobile homes inside trailers. The designer aims to provide affordable housing options that can be easily towed to different locations. This suits people who prefer a more contemporary taste inspired by the mountainous landscape of the American Rockies.

LOCATIONS Colorado (2013) and New Mexico (2015), USA
DESIGNER Rocky Mountain Tiny Houses
PHOTOS Rocky Mountain Tiny Houses



CASE STUDY TWO

Lava Mae

Lava Mae is an organisation that redesigns old buses to house shower and toilet cubicles for homeless people who have no other means of enjoying a hot shower, a change of clothes or personal grooming, in comfort and privacy. Providing the means to get clean means much more than enhancing personal hygiene. Doniece Sandoval, who founded the organisation in 2013, believes it also restores people's dignity. Inspired by the food truck craze, and with the aid of online crowdfunding, Lava Mae repurposes buses bound for the scrapheap. An architect helped with the initial redesign. The buses, which now ply the streets of San Francisco and the Bay area as well as Los Angeles, have served more than 10,000 people.

YEAR 2013

LOCATION San Francisco, California, USA

PHOTOS Lava Mae



Potential Sites



1 Buddha Tooth Relic Temple carpark

2 Tanjong Katong Complex carpark



DESIGN STRATEGIES

Freedom to move | Seniors choose where and when they would like to hop on and off Happy Express

Retrofitted bus | Old SBS bus retrofitted into mobile senior activity centre offering entertainment and health checks on board

Pop-up stall | Transforms easily into a pop-up café, health station, or even outdoor cinema when parked

Local senior guide | Empower seniors to become guides and share their knowledge of history and personal stories associated with sites dear to them

POSSIBILITIES

Sightseeing

Storytelling

Pop-up café

Karaoke

Pop-up outdoor cinema

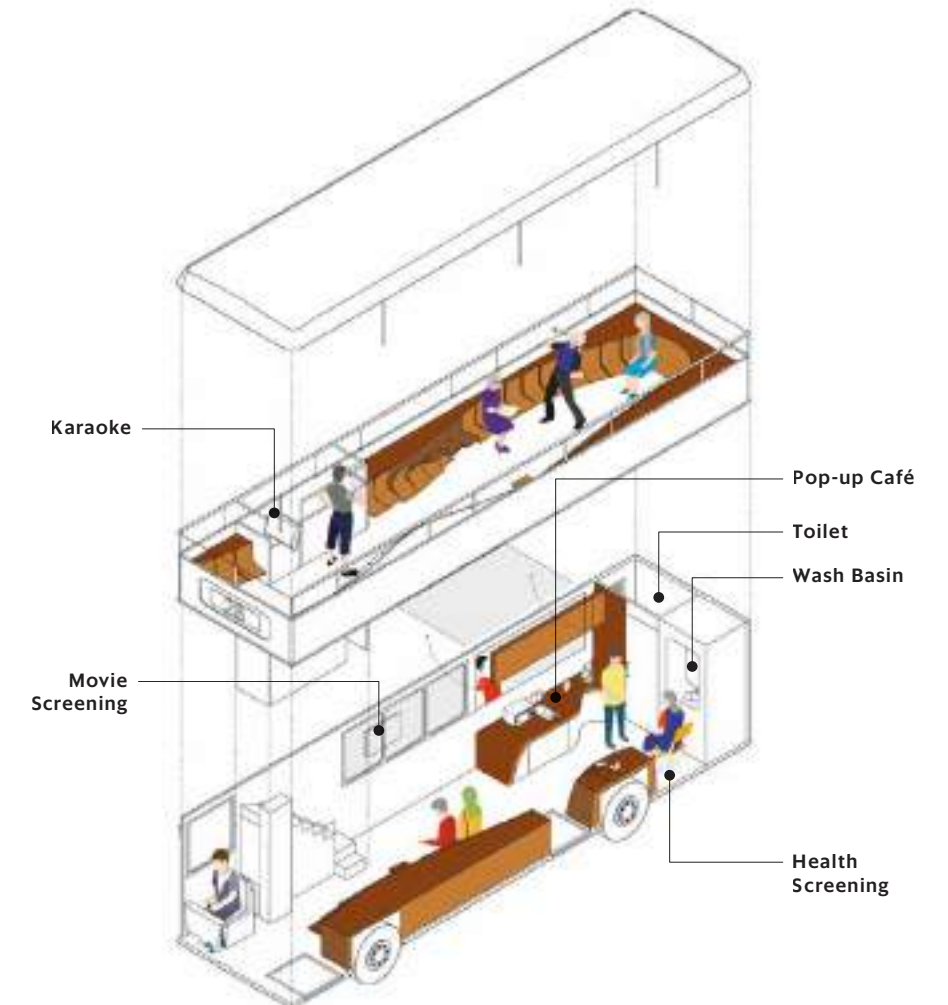
Health screening



LEFT

The old non-airconditioned SBS buses that have been taken off the road are nostalgic reminders for seniors, with their striking red-and-white detailing and distinctive bus number plates.

PHOTO Anthony Lui



LEFT

The original bus is transformed into a mobile senior activity centre. Volunteers on board serve snacks and drinks and conduct basic health screenings. Seniors can choose to sing karaoke, play games, have basic health checks, hop on and off at any stop enroute. They can do any or all of the above, customising their itinerary to their needs as independent and mobile individuals.

OVERLEAF

Selected open-air carpark become pit-stops for Happy Express. The bus opens on one side when parked, instantly turning a mundane carpark into a public space alive with possibilities.



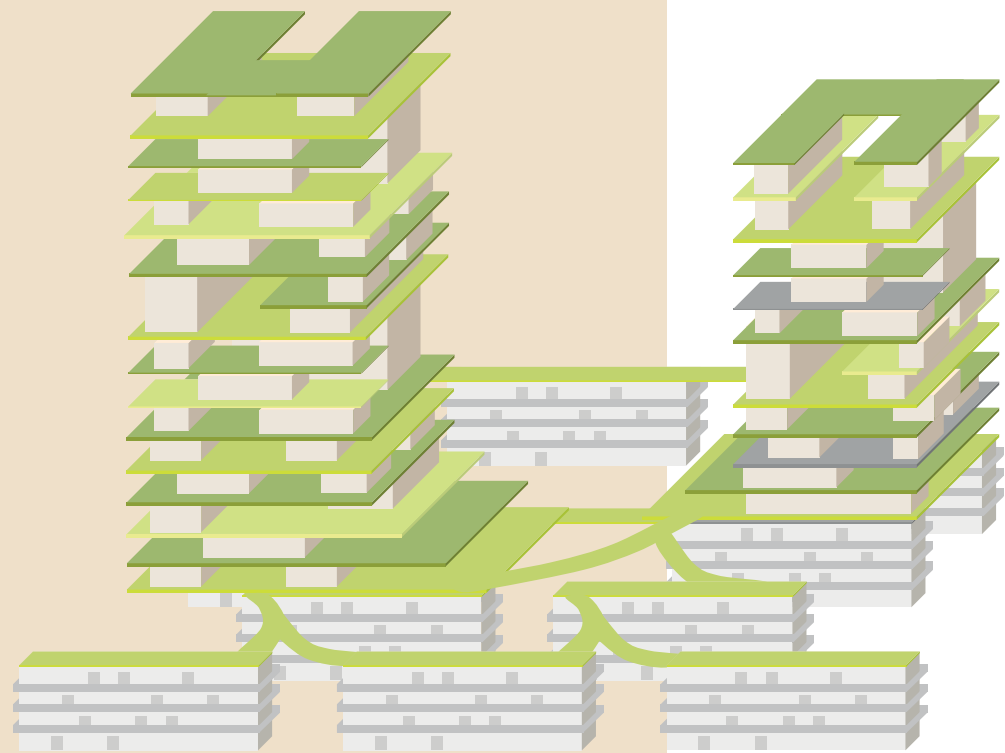
Happy Express

Senior Centre on the Move

Senior Centre on the Move

26

Lifelong Community
in Existing
Housing Estates



6 Heartland Kaki

“Heartland” refers to estates away from the city; while “kaki” (“legs” in Malay) is a colloquial term commonly used to refer to “partners”. In this case, we hope to propose a typology that makes it easy for people to make friends, find partners and take care of one another in Singapore’s heartlands.

Mature estates are often caught in a conservation/redevelopment dilemma, between the contradictory impulses for ageing in place and relocation. For seniors, the physical and emotional transition in relocating to a new environment and having to re-orientate their lives makes things even harder. But what if we can keep the existing housing blocks and social fabric intact while continuing to redevelop the precinct and increase its population density?

The aim of Heartland Kaki is to achieve a lifelong community by doing just that. By adding new housing layers above selected existing housing blocks, we can gradually bring in a younger generation and create an environment suitable for multi-generational living. Preserving the existing housing blocks allows the elderly to age in place and continue to enjoy a familiar setting and neighbourhood. A landscaped deck between the existing housing and new high-rise blocks above would then form a new ground level to which social care and healthcare infrastructure can be added.

By keeping the mature estate and its community intact, we can also tap on existing caregivers and their social networks to look after the growing number of seniors in these estates. New housing units constructed above the older ones could also cater to elderly residents who want to “upgrade” to smaller but better-equipped units with integrated technology, without having to leave a familiar location. Certain floors can also be adapted for use as assisted-living facilities, with community space and medical support.

CASE STUDIES

Local Community Area
Instant City: Living Air-Right
see pages 94 – 95

SELECTED SITE

Redhill Close
see pages 96 – 97

DESIGN DEVELOPMENT

see pages 98 – 105



CASE STUDY TWO

Instant City: Living Air-Right

This conceptual scheme aims to make use of the vacant airspace above existing buildings in Manhattan to create affordable housing units and public areas. In the city, more than three out of four residents rent rather than own their homes. The concept, called Instant City: Living Air-Right, inserts new affordable housing units and public spaces built into a modular grid-like structure positioned above existing low-rise buildings. The designers who conceived of this housing design see it being developed in tandem with public programmes to provide sufficient living spaces and foster community-based activities.

YEAR Designed in 2017 (hypothetical project)
LOCATION New York, USA
DESIGNER Beomki Lee and Chang Kyu Lee
IMAGES Beomki Lee and Chang Kyu Lee



CASE STUDY ONE

Local Community Area

In postulating a future type of housing in which the “one house = one family unit” idea has dissolved, Japanese architect Yamamoto proposed a full rental system that is more adaptable to social change and encourages mutual help. The room is reorganised in an entirely different way. It consists of a “mise” (glazed public area) and a “nema” (private living space). People can rent space in any combination they like, accommodating such programmes or functions as offices, shops, children’s play areas, and napping space for seniors as needed. This typology seeks to reconsider spatial rights and forms of community such that “my home” and “your home” can instead become a fusion of yours, mine and ours.

YEAR Designed in 2012 (hypothetical project)
LOCATION Japan
DESIGNER Riken Yamamoto & Field Sho
IMAGES Riken Yamamoto & Field Shop



Potential Sites



1 Bukit Ho Swee

2 Stirling Road



DESIGN STRATEGIES

Lifelong community | Add new layers of living units and landscape decks above selected existing residential blocks; introduce younger residents into older estate; increase housing density without relocation and redevelopment

Ageing-in-place | Seniors can choose to live in the same unit for as long as they are able, or move into new smaller units upstairs with personal care assistance, without needing to move away from familiar surroundings and neighbours

Caregiver support | Platform and social space for informal caregivers to exchange information and support one another

Multi-generational living | Encourage multi-generations from separate family units to support one another by using shared spaces

POSSIBILITIES

3-, 4- or 5-room apartment

Senior apartment

Landscape deck / rooftop park

Wide corridor and lift lobby as shared space

Caregiver corner

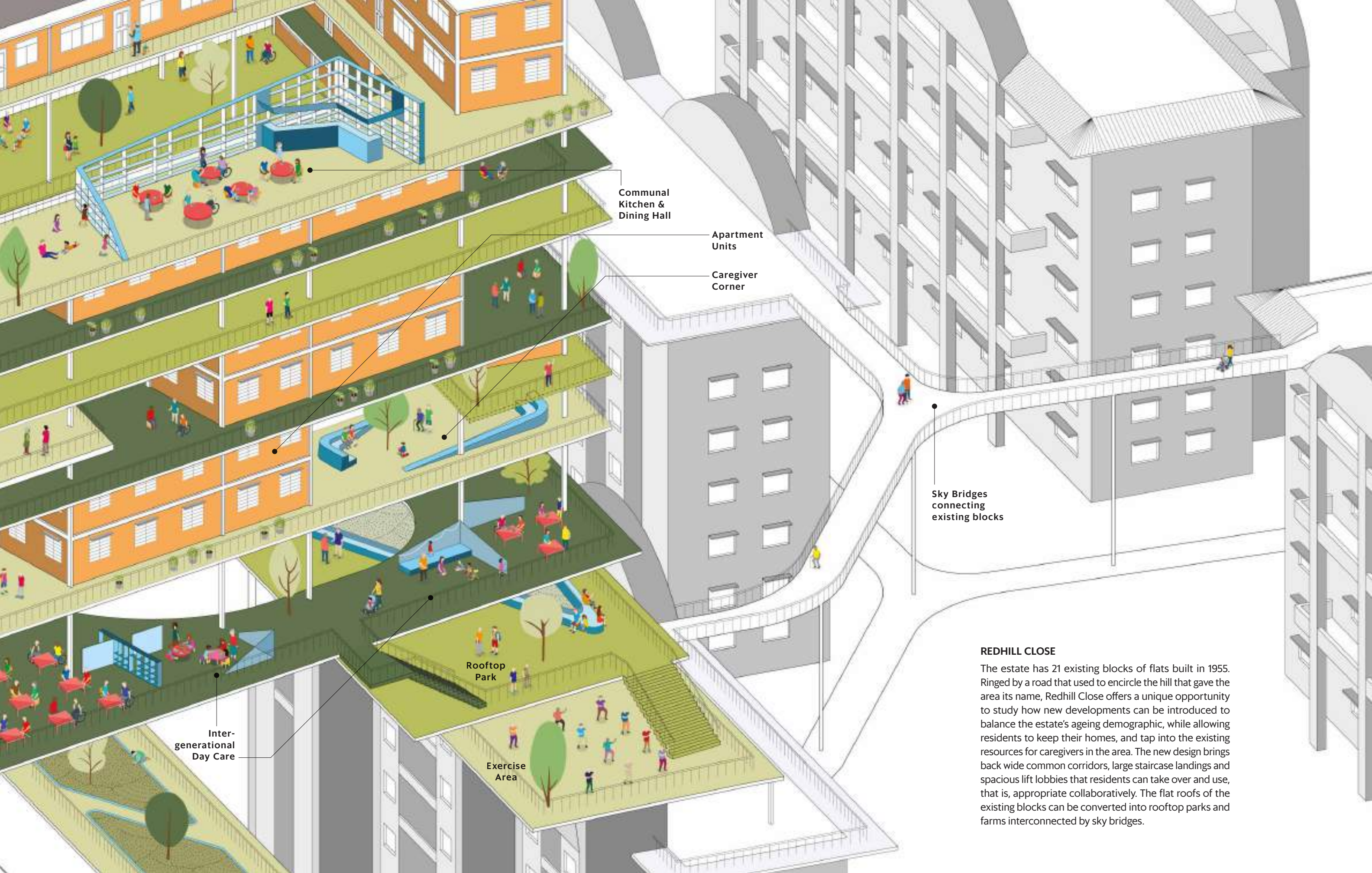
Respite care

Intergenerational day care

Intergenerational playground / gym

Communal kitchen and dining hall

Interest group corners



Communal
Kitchen &
Dining Hall

Apartment
Units

Caregiver
Corner

Sky Bridges
connecting
existing blocks

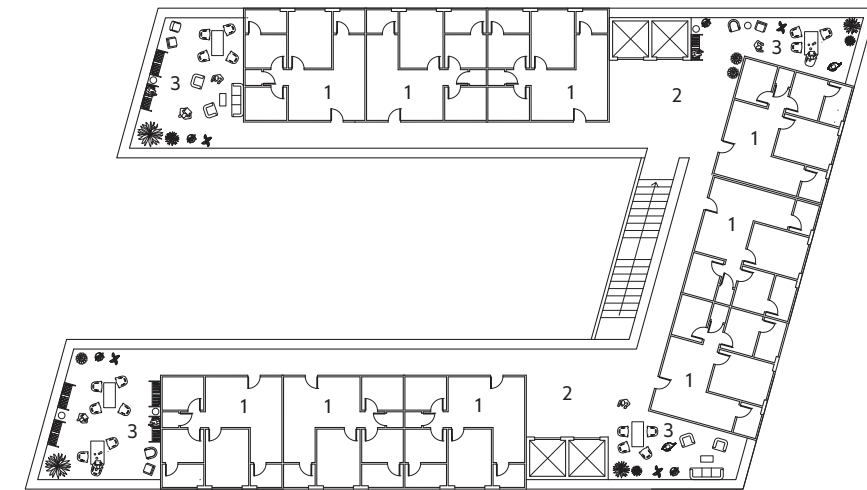
Rooftop
Park

Exercise
Area

Inter-
generational
Day Care

REDHILL CLOSE

The estate has 21 existing blocks of flats built in 1955. Ringed by a road that used to encircle the hill that gave the area its name, Redhill Close offers a unique opportunity to study how new developments can be introduced to balance the estate's ageing demographic, while allowing residents to keep their homes, and tap into the existing resources for caregivers in the area. The new design brings back wide common corridors, large staircase landings and spacious lift lobbies that residents can take over and use, that is, appropriate collaboratively. The flat roofs of the existing blocks can be converted into rooftop parks and farms interconnected by sky bridges.



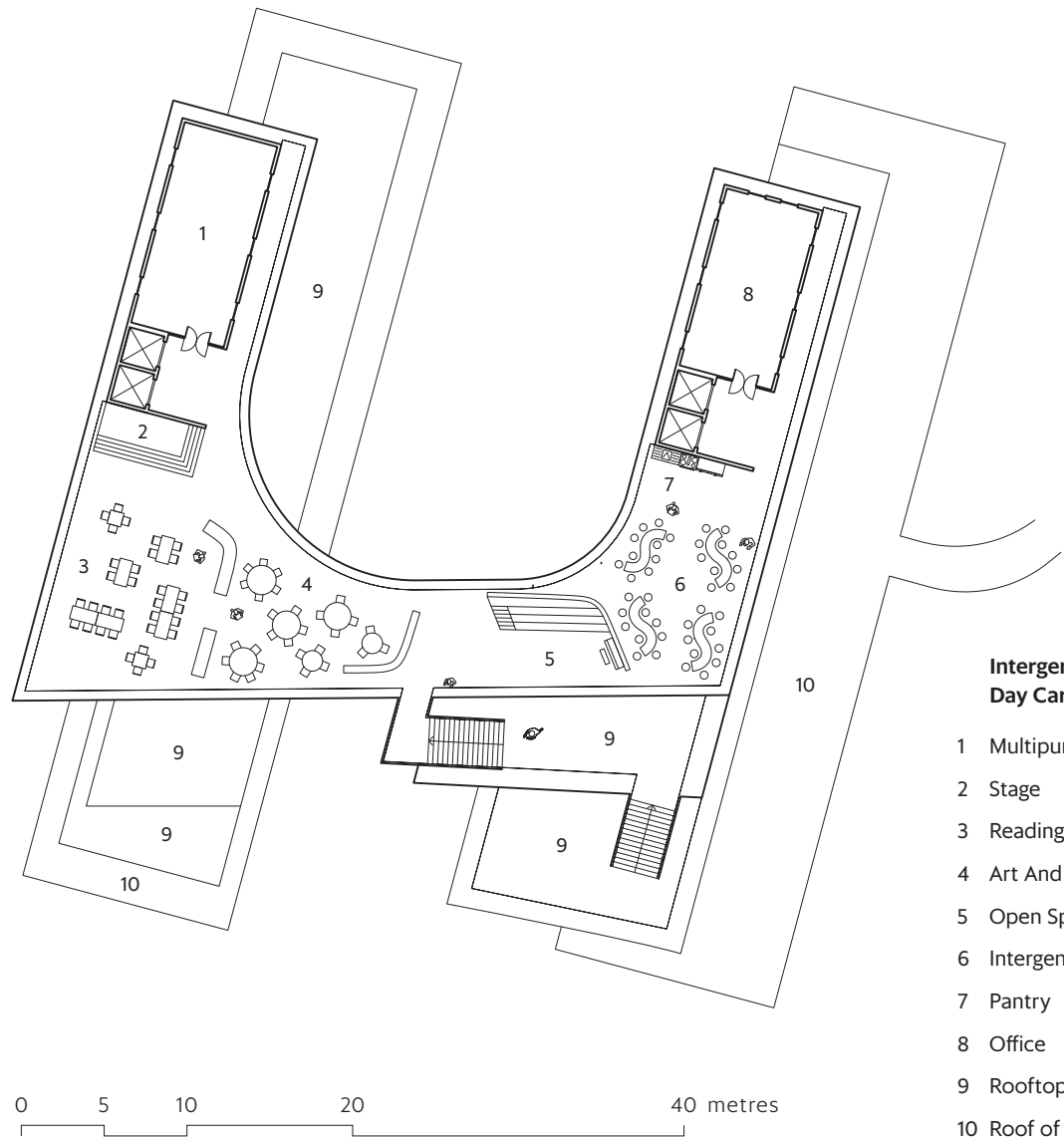
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Typical Floor Plan for New Apartments

- 1 4-Room Apartment Unit
- 2 Lift Lobby
- 3 Interest Group Corner
(collaboratively appropriated by residents)

LEFT

The new housing typology features wide corridors and “left-over” or unused public spaces especially at the edges of every residential floor. Residents can use such spaces communally. The semi-public spaces and the green façade are the results of collective effort, further strengthening a sense of ownership.



Intergenerational Day Care Floor Plan

- 1 Multipurpose Hall
- 2 Stage
- 3 Reading Corner
- 4 Art And Craft Area
- 5 Open Space Play Area
- 6 Intergenerational Dining Area
- 7 Pantry
- 8 Office
- 9 Rooftop Garden
- 10 Roof of Existing Flat

FACING PAGE

By adding new layers of apartments units above selected existing older flats, an ageing estate can be conserved and senior residents can continue to age in place without having to move house. To encourage multi-generational living, communal spaces are introduced at the ground level and roofs of existing flats, where new landscape decks with play area, social care and healthcare services can be added.

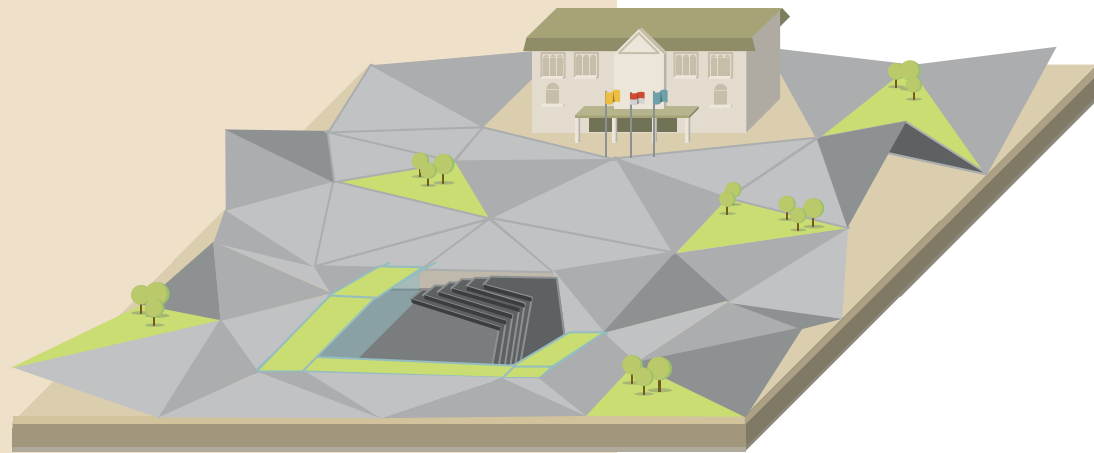
OVERLEAF

Selective redevelopment while keeping people and places intact can strengthen social capital. It keeps existing social networks of caregivers intact in the mature estate and extends the housing available to include new residents.





Going Back to School
to Learn, Play and Live
with Youths



7 Giving Campus

Situated across the road from a university, the Giving Campus transforms an old school building into an inter-generational hostel and learning centre. By living and learning together, seniors and secondary or tertiary students are able to form reciprocal relationships in which they care for one another.

For seniors entering retirement, going back to school could be a welcome change and a meaningful lifelong learning endeavour. Pursuing a career and needing to support a family may have made it difficult for some to further their education when they were young. The retirees might once have been chefs or CEOs, administrators, accountants or architects whose trove of experience and knowhow means that they have much to offer. Giving Campus provides them with a platform to grow and give.

On campus, seniors can mentor students. For example, a retired teacher or professor may choose to coach students in their coursework, or share practical life skills such as gardening or preparing a home-cooked meal. Seniors and students can spend time with one another in communal spaces throughout the campus, pursuing common interests or simply sharing a meal in the dining area. There will always be life stories that the students have never heard of, and there will always be something new to learn.

Students can offer seniors help with chores like grocery shopping, exercise or teach them how to use a new laptop or mobile device. Special incentives - such as discounts for hostel accommodation - can be offered to these students for rendering assistance to seniors who need help. With young and old looking out for each other, this typology cultivates inter-generational kindness and compassion, values that are vital to building a resilient society. It demonstrates how bonds forged by living and learning together can bridge generations - how individuals who may be worlds apart before they meet can indeed grow closer through shared experiences.

CASE STUDIES

Senior Residence Heisdorf
Humanitas Deventer Residential
Students Programme

see pages 108 - 109

SELECTED SITE

Former Changkat Changi Primary
School (opposite SUTD)

see pages 110 - 111

DESIGN DEVELOPMENT

see pages 112 - 119



CASE STUDY TWO

Humanitas Deventer Residential Students Programme

University students live rent free alongside the elderly residents of this long-term care facility. The students are required to spend at least 30 hours a month with the elderly residents. Involving the students promotes inter-generational bonding, provides company for the seniors and keeps them feeling connected to society.

LOCATION The Netherlands
PHOTOS Humanitas Deventer



CASE STUDY ONE

Senior Residence Heisdorf

Situated in a park with mature trees, the old castle of Heisdorf, built during the 19th century, was no longer able to offer the level of comfort sought by today's seniors. So the extensions that it had accumulated over the years were demolished and replaced with a new wing linked to the castle by an elevated and glazed structure. The extensive use of glass and wood allowed the interiors to be flooded with daylight and to feel friendly and warm. While the residents feel protected inside, the abundant light and openness allow them to have a full view of everything happening outside. This is particularly important for the seniors because it makes them feel less isolated.

YEAR 2007
LOCATION Germany
DESIGNER Valentiny hvp architects
PHOTOS GG Kirchner



Potential Sites



- 1 Old school building beside St Margaret's Secondary School
- 2 Former Pandan Primary School (beside Commonwealth Secondary School)

SELECTED SITE

Former Changkat Changi Primary School (opposite SUTD)



DESIGN STRATEGIES

Adaptive reuse | Former classrooms can be converted into living units for both seniors and youths; new communal spaces can be added for inter-generational learning and play

Lifelong learning | Seniors can revive old dreams, pursue new interests and go back to school. This campus creates an environment for growth and mental stimulation

Reciprocal care | Young people can help to take care of seniors and gain social service credits or offset hostel fees; seniors can impart life knowledge and experience

Inter-generational activities | Seniors and youths can participate in arts/sports together; expert seniors can coach youths in arts/sports

POSSIBILITIES

Youth/student hostel

Senior or assisted-living apartments

Garden courtyard with communal kitchen

Activity pods (piano room, reading room, AV lounge)

Learning hub (science lab, computer lab, library)

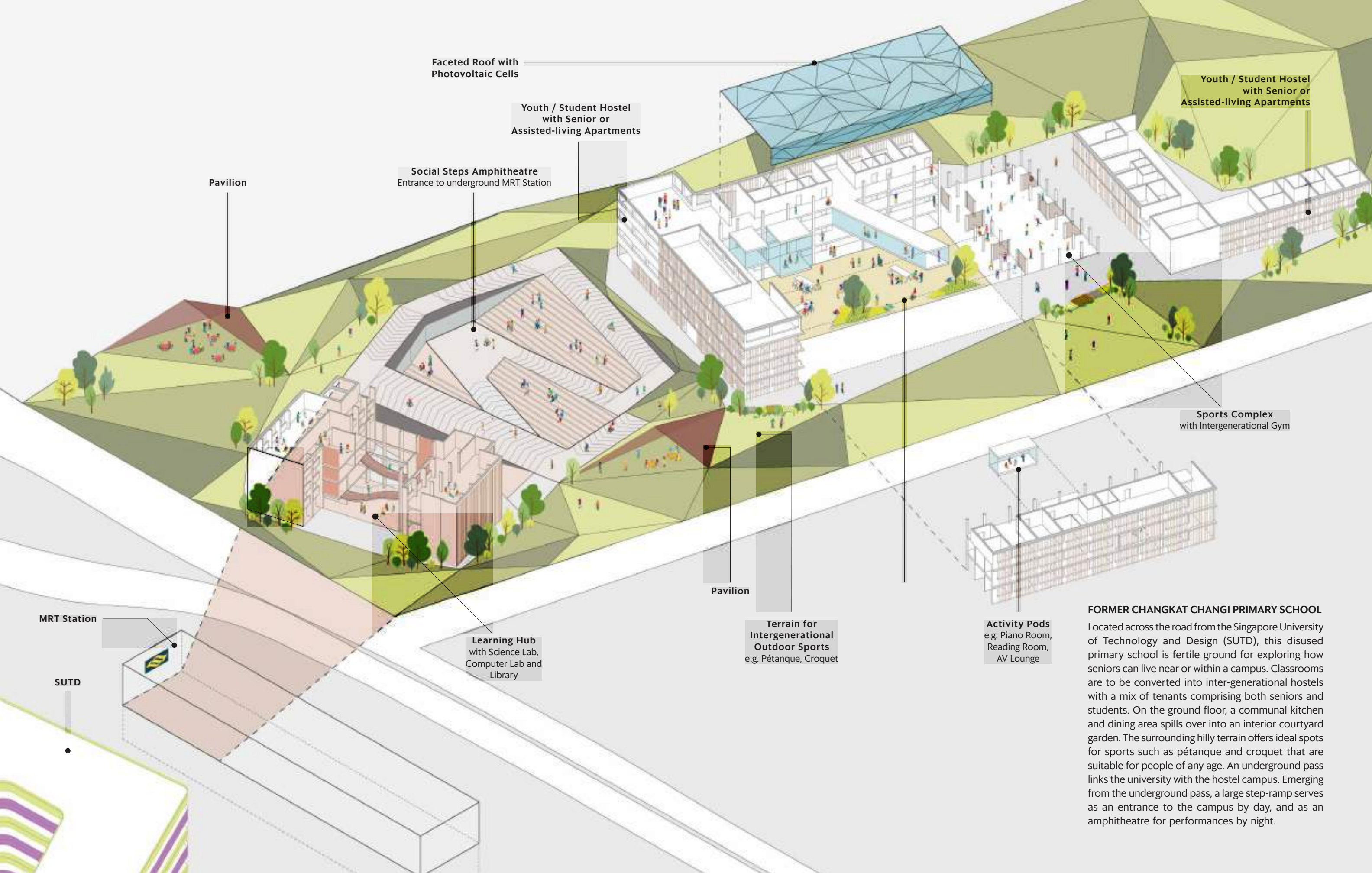
Sports complex with inter-generational gym

Dance studio

Intergenerational outdoor sports (pétanque, croquet)

Pavilions

Social steps amphitheatre (MRT entrance)



Faceted Roof with Photovoltaic Cells

Youth / Student Hostel with Senior or Assisted-living Apartments

Youth / Student Hostel with Senior or Assisted-living Apartments

Pavilion

Social Steps Amphitheatre
Entrance to underground MRT Station

Sports Complex with Intergenerational Gym

Pavilion

Terrain for Intergenerational Outdoor Sports
e.g. Pétanque, Croquet

Activity Pods
e.g. Piano Room, Reading Room, AV Lounge

Learning Hub with Science Lab, Computer Lab and Library

MRT Station

SUTD

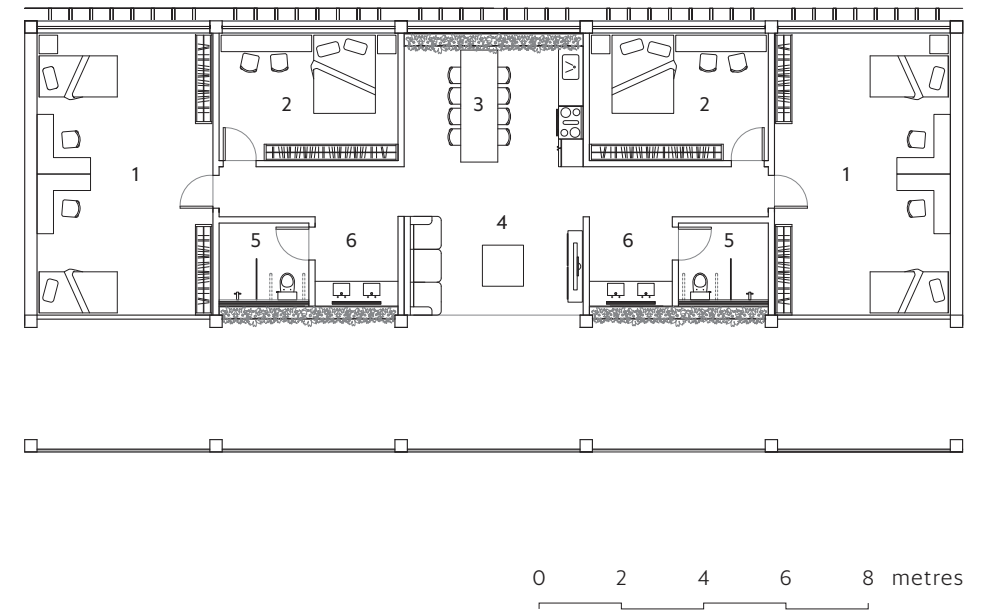
FORMER CHANGKAT CHANGI PRIMARY SCHOOL

Located across the road from the Singapore University of Technology and Design (SUTD), this disused primary school is fertile ground for exploring how seniors can live near or within a campus. Classrooms are to be converted into inter-generational hostels with a mix of tenants comprising both seniors and students. On the ground floor, a communal kitchen and dining area spills over into an interior courtyard garden. The surrounding hilly terrain offers ideal spots for sports such as pétanque and croquet that are suitable for people of any age. An underground pass links the university with the hostel campus. Emerging from the underground pass, a large step-ramp serves as an entrance to the campus by day, and as an amphitheatre for performances by night.



ABOVE

An old school building is refurbished for use as a hostel for university students and seniors. They share the courtyard space which has a communal dining area and herb garden, and can pursue common interests together at the cantilevered pods.



Typical Floor Plan for Hostel Modules

- 1 Youth Apartment Unit (twin sharing)
- 2 Senior Apartment Unit
- 3 Common Kitchenette and Dining Room
- 4 Common Living Room
- 5 Universal Bathroom
- 6 Wash Basin

RIGHT

The undulating outdoor terrain becomes a sports arena accessible to people of all ages, so seniors and students participate in such sports as pétanque and croquet.

OVERLEAF

The underground entrance to the new MRT station connects Giving Campus with SUTD across the road. It doubles up as a social steps amphitheatre that can be used for outdoor performances by amateurs and professionals alike.





Cluster Living on a Floating Village



8 Kelong Co-op

The empty-nest syndrome can descend suddenly as young people leave to set up their own homes. The chatter and bustle evaporate as a once active household falls silent. What alternatives are there to lonely weekdays? What if one could have living options with friends away from home and yet at home?

Kelong Co-op is ideal for seniors who are drawn to a rustic living environment but don't want to be too far from urban amenities and family members. Derived from the 'Kelong' typology (vernacular for a fisherman's stilt house on water) and located on Coney Island, at the north-eastern coast of Singapore, the Kelong Co-op enables seniors to live with nature in a way reminiscent of the village life of yesteryear.

A modular basic living unit is repeated and arranged around common areas that become central public spaces. These serve as fishing decks, community farms, or simply open communal spaces for seniors to relax and enjoy the setting sun.

Cluster living allows seniors to live close to people with similar interests or personalities, and engage in activities of their liking. They can even work together and take care of one another. Living arrangements can also be clustered according to healthcare needs, enhancing care differentiation. Over time, the seniors can cultivate interdependent living, developing a sense of care and concern for one another.

CASE STUDIES

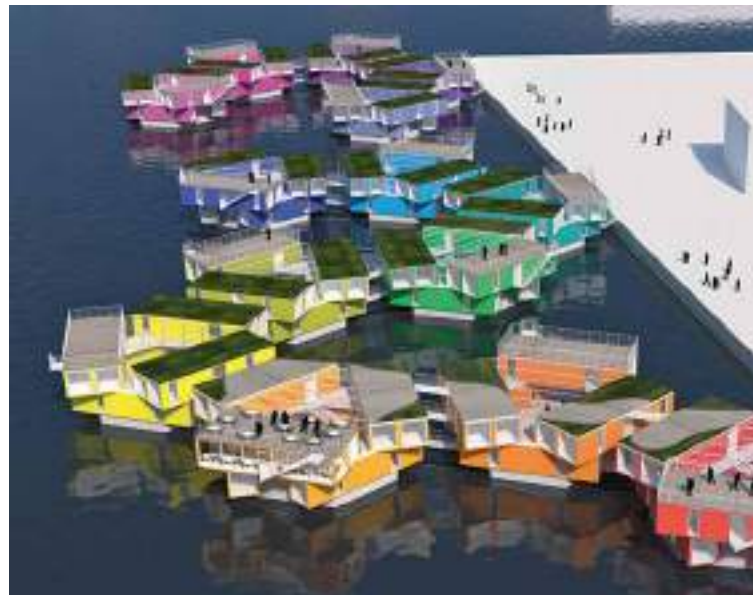
Urban Rigger
Eltheto Housing and
Healthcare Complex
see pages 122 – 123

SELECTED SITE

Serangoon Island (Coney Island)
see pages 124 – 125

DESIGN DEVELOPMENT

see pages 126 – 135



CASE STUDY ONE

Urban Rigger

The shortage of student housing in Europe gave rise to the idea of developing an innovative floating dwelling system. This is a clever way of exploiting the potential of thousands of kilometres of unused quayside across the harbours, canals and rivers. Urban Rigger uses containers and assembles them in a way that provides connectivity and flexibility.

YEAR 2016
LOCATION Copenhagen, Denmark
DESIGNER BIG-Bjarke Ingels Group
IMAGES (top) Laurent de Carniere, (left) BIG-Bjarke Ingels Group



CASE STUDY TWO

Eltheto Housing and Healthcare Complex

The design of this complex aims to provide the right healthcare and housing types that fit each individual's current needs. Four housing blocks provide different kinds of housing for seniors who can live independently, and for those who have Alzheimer's Disease, and physical or other cognitive disabilities. Individuals receive specific care services according to the cluster to which they belong. Should their condition change, they can move into a different block yet still remain in the same neighbourhood. The arrangement of the blocks around the healthcare centre and several public spaces is designed to encourage the residents to interact.

YEAR 2015
LOCATION Rijssen, The Netherlands
DESIGNER 2by4-architects
IMAGES Photo Rijssen, copyright 2017 2by4-architects



- 1 Apartments for Somatics small group-living Psychogeria (B) (D)
- 2 Small group-living of mentally disabled elderly residents (D)
- 3 Apartments with access to care (A) (B)
- 4 Apartments with access to care (A) (C)



Potential Sites



1



2

1 Changi Beach

2 Marina South Pier

SELECTED SITE

Serangoon Island (Coney Island)



DESIGN STRATEGIES

Cluster living | Cluster seniors by interests/personalities/relationships/care needs; promote care differentiation

Rural environment | Immerse in rustic village setting, in touch with nature, let seniors feel as if they have travelled back in time

Interdependent living | Cultivate a sense of care and concern for one another in building a community

Modular design | Basic units replicated to form different clusters for a variety of communal programmes and spaces

POSSIBILITIES

Kelong community hall with medical care centre

Communal courtyard

Sun deck

Aquafarming

Fishing deck

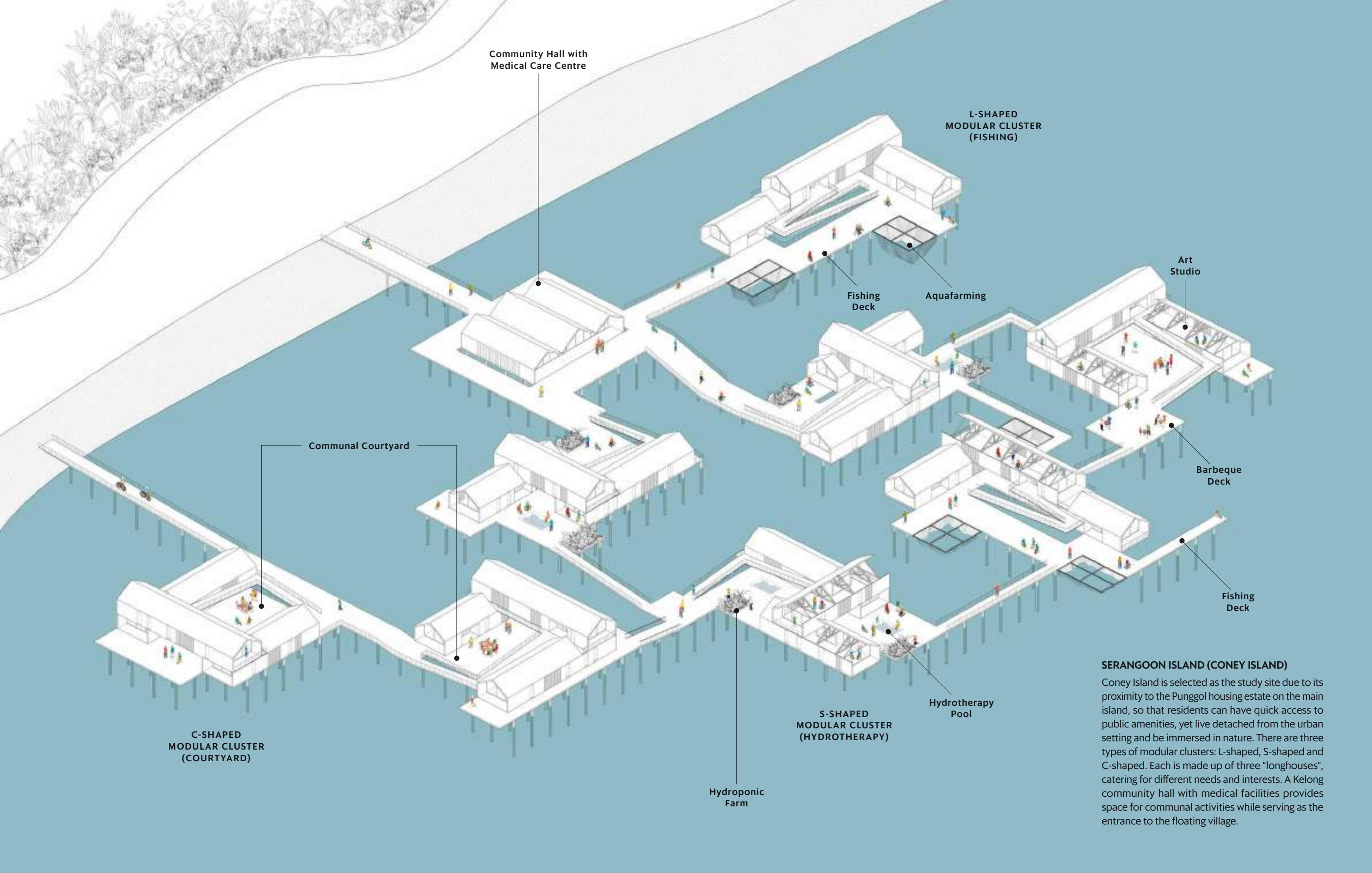
Barbeque area

Hydroponic farm

Hydrotherapy pool

Photography club

Art studio



Community Hall with
Medical Care Centre

L-SHAPED
MODULAR CLUSTER
(FISHING)

Fishing
Deck

Aquafarming

Art
Studio

Barbeque
Deck

Fishing
Deck

Communal Courtyard

C-SHAPED
MODULAR CLUSTER
(COURTYARD)

S-SHAPED
MODULAR CLUSTER
(HYDROTHERAPY)

Hydrotherapy
Pool

Hydroponic
Farm

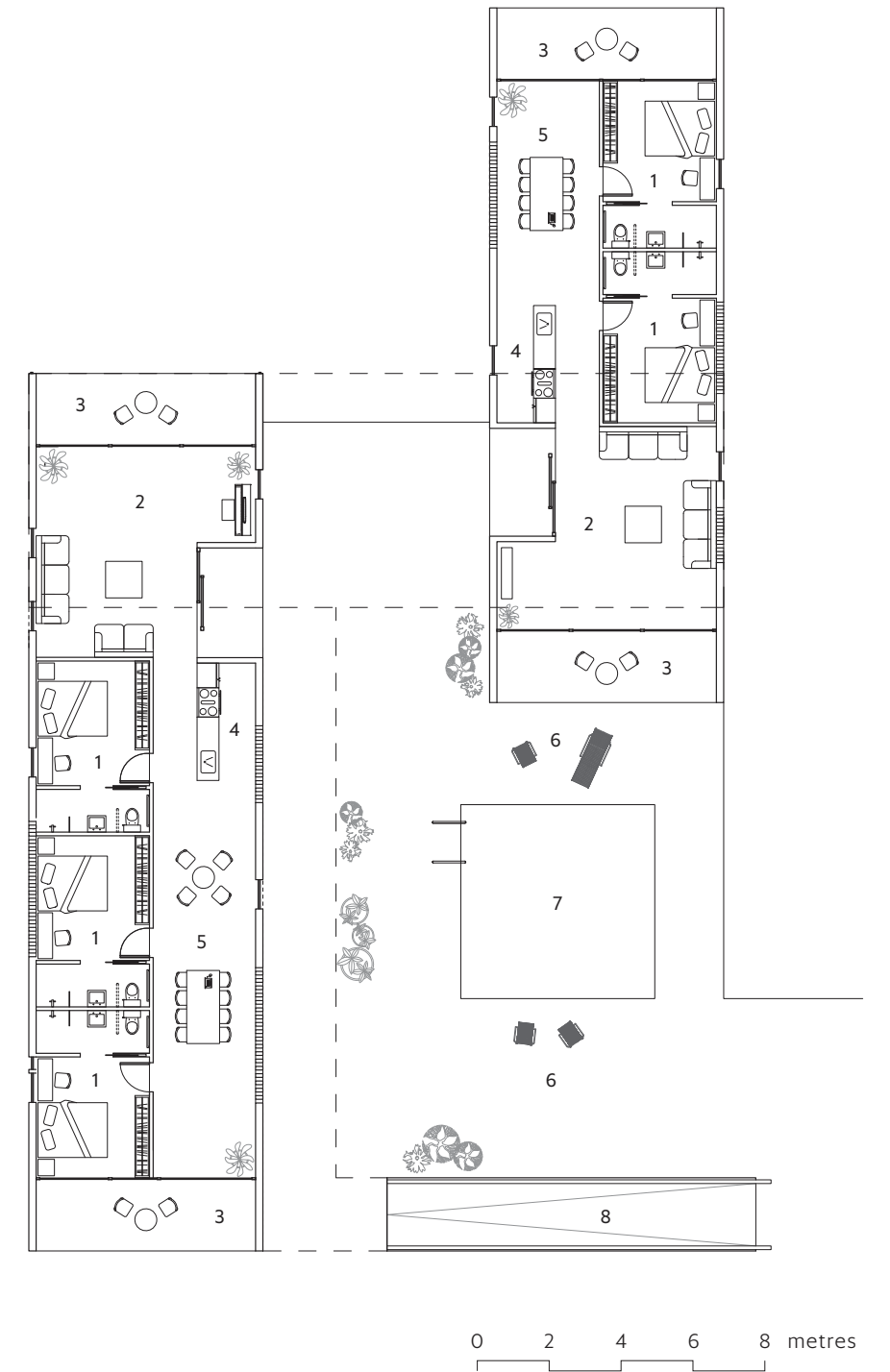
SERANGOON ISLAND (CONEY ISLAND)

Coney Island is selected as the study site due to its proximity to the Punggol housing estate on the main island, so that residents can have quick access to public amenities, yet live detached from the urban setting and be immersed in nature. There are three types of modular clusters: L-shaped, S-shaped and C-shaped. Each is made up of three "longhouses", catering for different needs and interests. A Kelong community hall with medical facilities provides space for communal activities while serving as the entrance to the floating village.



ABOVE

Seniors are clustered according to interests, circle of friends, or similar healthcare needs. Here, a hydrotherapy pool is shared by the residents in this cluster.



S-Shaped Cluster Floor Plan

- | | |
|------------------|---------------------|
| 1 Senior Bedroom | 5 Dining Area |
| 2 Living Room | 6 Sun Deck |
| 3 Balcony | 7 Hydrotherapy Pool |
| 4 Open Kitchen | 8 Ramp |

RIGHT

Each module contains two to three bedrooms with a common kitchen, dining and living room as well as a balcony over the water. Friends are encouraged to visit one another in their living rooms.





LEFT

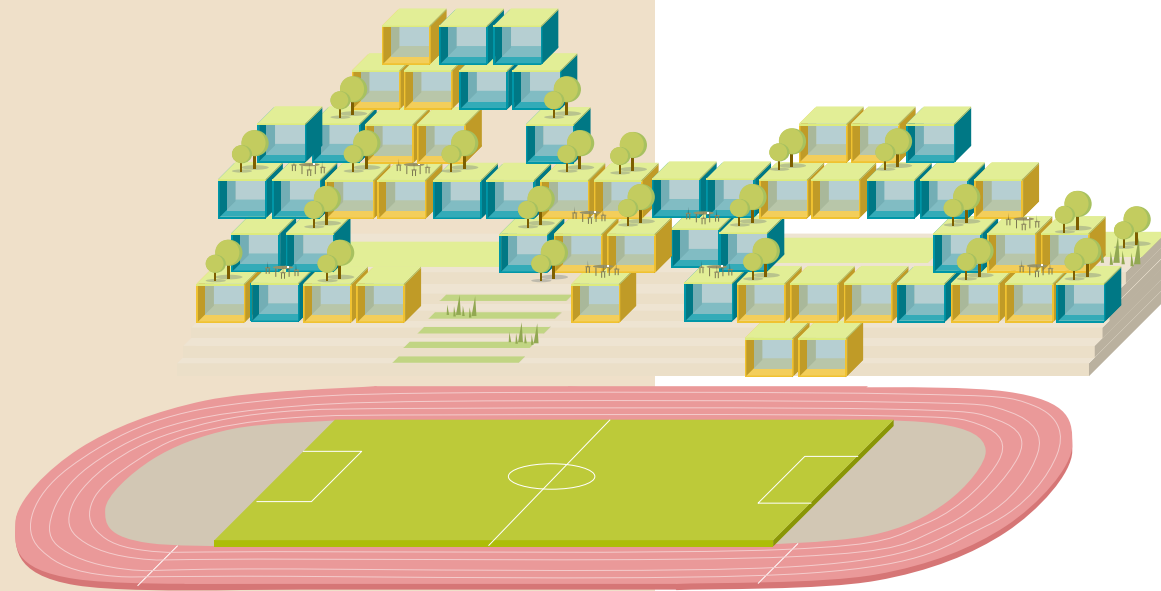
A cluster with residents sharing common interest in fishing and aquafarming. Kelong Co-op allows seniors to reconnect with nature and people.

OVERLEAF

Sunset at Kelong Co-op.



A Sanctuary to Restore Body and Mind



9 Healing Stadium

The Healing Stadium is a cluster of apartments for seniors built in an old sports complex with plenty of safe green spaces for exercise and onsite care services should they need it someday.

As the rapid ageing of Singapore's population spurs demand for senior living space, we need to look beyond the conventional. We propose to redesign a sports stadium that has outlived its original purpose by expanding its infrastructure to include apartment units surrounding the running track. In this adaptive reuse of the stadium site, certain areas of the concrete seating can be readily repurposed for terrace farming.

We also propose that a cat and dog shelter be constructed under the grandstand which can offer pet therapy. Seniors are also free to keep pets in their apartments for companionship and comfort.

Existing features of the stadium such as its running track and steps will practically take exercise options to residents' doorsteps. Just by having such easy access to means of staying fit and being able to see their neighbours walking, jogging or cycling can encourage seniors to stay active and exercise. Seniors with limited physical mobility who need to use wheelchairs will find the ramps that lead to their apartments from the jogging track useful.

The man-made tropical forest provides a therapeutic landscape. Being close to greenery or nature can lead to improvements in mood, cognition and health. Planting the forest in the heart of the stadium allows seniors with dementia or cognitive challenges to trek independently, while making it impossible for them to wander out of the compound. The terrain will be sculpted to imitate Nature's slopes, dirt trails, rocks and overhanging branches, thus challenging users to continuously exercise body awareness and apply their senses to navigate these features.

CASE STUDIES

Maggie's Centre Southampton
Casa Futebol
see pages 138 - 139

SELECTED SITE

Jurong Stadium
see pages 140 - 141

DESIGN DEVELOPMENT

see pages 142 - 149



CASE STUDY ONE

Maggie's Centre Southampton

Anyone who has been affected by cancer is welcome to drop in here. This project in Southampton, one of many Maggie's Centres in the UK, employs the idea of planting a forest amidst a hospital's typically concrete landscape, providing a wild and naturalistic topography protected from the outside world. The greenery, the light and the colours of the garden all combine to subtly lift the spirits of the staff as well as cancer patients and their family members.

YEAR Designed in 2015
LOCATION Southampton, UK
DESIGNER AL_A
IMAGES AL_A

CASE STUDY TWO

Casa Futebol

This is a hypothetical project by the Brazilian design group 1week1project. They propose adding large numbers of housing modules to existing stadia to solve the housing shortage in Brazil. In their plan, a football stadium would continue to operate as a sports venue. The idea is that when matches are staged, part of the proceeds will go towards financing the construction and maintenance of the housing units.

YEAR Designed in 2014
LOCATION Brazil
DESIGNER 1week1project
IMAGES 1week1project, (left) Arena das Dunas by Populous, photo from copa2014.gov.br (bottom) Estadio Nacional by Castro Mello, photo by Tomás Faquini



Potential Sites



1 Former SIA Groups Sports Club

2 Turf City

SELECTED SITE

Jurong Stadium



DESIGN STRATEGIES

Restorative environment | Bring Nature back into urban context to serve as therapeutic landscape; use natural terrain for rehabilitation

Complementary programme | Co-location with cat and dog shelter can provide emotional stability for seniors through everyday contact with animals

Active ageing | Encourage walking, cycling, strolling, trekking, walking the dog

Productive landscape | Grow vegetables, herbs and fruit trees along terraces

POSSIBILITIES

Assisted living apartment (long-term)

Transitional care (short-term)

Caregiver apartment

Ward with nurses

Medical clinic

Therapeutic forest

Terrace farming

Communal terrace

Cat and dog shelter (pet therapy)

Jogging track



Living Module
Assisted Living Apartment,
Transitional Care,
Caregiver Apartment,
Nursing Ward

Terrace Farming

Communal Terrace

Jogging Track

Ramp

Therapeutic Forest

Terrace Farming

Medical Clinic

Cat and Dog Shelter

JURONG STADIUM

The selected site of study is Jurong Stadium, which is now closed to the public. The location is ideal as it is close to housing estates and amenities, yet preserves a sense of tranquillity as it sits at the edge of the neighbourhood. The design capitalises on the inward-looking nature of a stadium to provide calming views of the forest from each apartment. Because of this, the overall environment created is both restorative and active, allowing the seniors to heal in mind and body and to live well.

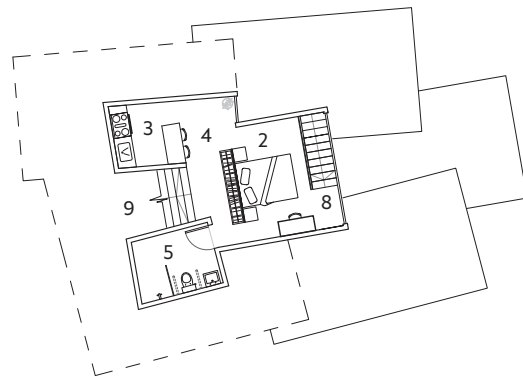


LEFT

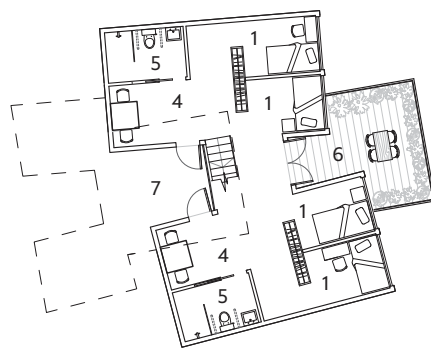
Assisted living apartment units are built on top of the existing stadium structure, each with a view of the central forest. Some of the original concrete seats are repurposed for terrace farming.



Third Level Floor Plan
(Senior Apartment - Double Unit)



Second Level Floor Plan
(Caregiver Apartment)



First Level Floor Plan
(Senior Apartment - Single Unit)

Typical Floor Plans for Assisted Living Apartment

- 1 Senior Bedroom
- 2 Caregiver Bedroom
- 3 Kitchenette
- 4 Dining Area
- 5 Universal Bathroom
- 6 Communal Terrace
- 7 Entrance
- 8 Access to Senior Apartment below
- 9 Access to Senior Apartment above

0 2 4 6 8 metres



ABOVE

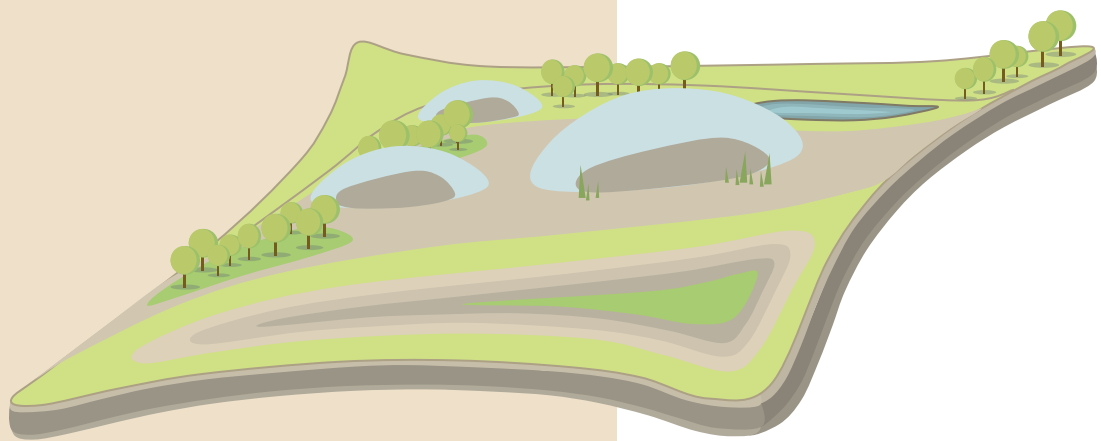
Every unit has access to a communal terrace. An ideal place to enjoy fresh air and greenery, the communal terrace also becomes a social space for neighbours to get together.

OVERLEAF

A shelter for cats and dogs is located within the existing stadium grandstand. Seniors can enjoy the forest trails and, at the same time, help the shelter animals get some exercise. The safe and enclosed route within the stadium allows persons with dementia to explore the area independently and safely.



Public Park with an
In-patient Hospice
to Celebrate Lives
Well Lived



10 Garden of Life

*“Why wait until you are dead to celebrate your life?
Why not deliver your own eulogy?”*

These were the words of Professor Tan Teng Kee, a Professor of Innovation, who started the Living Memorial Celebration movement when he was diagnosed with cancer. This is its premise: Why wait till you are dead and have someone else deliver a eulogy about you when you can do it yourself in the company of those you love, while you are still alive? He believed that one should seize the day and deliver that personal story personally while surrounded by close friends and family who come to share memories and celebrate life. And that is exactly what Prof Tan did before his own passing.

Garden of Life builds on this idea, and expands it into a typology that integrates an in-patient hospice with a nature park and tree nursery. This is a place where the terminally ill can live out their last days in peace and tranquillity in an open, natural setting. It is also a public space that invites people to join in celebrating life. Family members can choose to stay with their elders in the hospice. Close friends and relatives can visit the residents, have meals together, and take turns to share memories. They may plant a new tree together at the nursery, or set off sky lanterns in the evening in celebration. The nursery park could even double up as an ash garden. The celebration can include having a loved one’s ashes spread under the tree that was planted while he or she was still alive, thus closing the loop on the circle of life.

We would like to dedicate this typology to Professor Tan for being such an inspiration to future generations.

CASE STUDIES

Gardens of Remembrance
Acacia Remembrance Sanctuary
see pages 152 – 153

SELECTED SITE

Tanjong Rhu Promenade
see pages 154 – 155

DESIGN DEVELOPMENT

see pages 156 – 165



CASE STUDY TWO

Acacia Remembrance Sanctuary

In this new type of cemetery without headstones, the bereaved can find their loved ones' graves with the help of GPS. As attitudes towards death change, and parts of society become increasingly secular, the designers of this cemetery postulate that the funeral industry might want to offer new forms of remembrance beyond the conventional graveyard setting.

YEAR Designed in 2016
LOCATION Bringelly, NSW, Australia
DESIGNER CHROFI and McGregor Coxall
IMAGES CHROFI and McGregor Coxall



CASE STUDY ONE

Gardens of Remembrance

There are eleven Gardens of Remembrance in eight public columbaria in Hong Kong. To promote green burial practices, each garden is designed as a tranquil environment where family members can choose to scatter the cremated remains of their loved ones. Memorial walls for mounting plaques are located in the garden, allowing family and friends to come any time to pay tribute to their loved ones.

LOCATION Hong Kong
PHOTOS Gao Tongchaoran



Potential Sites



1



2

1 East Coast Park Camping Site G

2 Jurong Bird Park



SELECTED SITE

Tanjong Rhu Promenade

DESIGN STRATEGIES

Natural environment | Offers tranquillity to elders on their final journey in life

Accessible | Located within open space / public park; encourages family, relatives and friends to visit or even stay

Dignity and legacy | Invite family members and close friends to join in the remembrance and celebration of life. Elders can deliver their own eulogy

Circle of life | Tree nursery injects a feeling of growth and new beginnings; elders can choose to have their ashes buried under a tree that they have planted with people who matter to them

POSSIBILITIES

In-patient hospice

Public park

Visitation pavilion with dining hall

Caregiver activity area

Tree nursery (tree planting)

Ash garden

Eulogy pavilion

Sky lantern platform

Reflecting pool

Open lawn

TANJONG RHU PROMENADE

Currently, the study site is an extensive lawn area with a view of the city skyline across the Kallang Basin and pedestrian promenade along the coastline. A new MRT station planned for the area makes this site ideal as a park. The proposed design capitalises on the surrounding views and water body. By creating undulating terrain and meandering pathways, residents and visitors can roam freely and experience different intensities of activity across the site. Pavilions are then shaped accordingly, blending in with the natural environment. With the tree nursery and ash garden integrated, the park embodies the cycle of life.





ABOVE

Located within a public park, the visitation pavilion offers a spacious and tranquil landscaped environment where families and friends can gather.

RIGHT
Planting a memorial tree in the company of family and loved ones at the tree nursery.





LEFT

Delivering one's own eulogy at the eulogy pavilion, and setting off sky lanterns afterwards, in a celebration of life.

OVERLEAF

Garden of Life with lush landscaped parks, with the city in the distance.



ACKNOWLEDGEMENT

Our journey started in July 2016 when we and the Lien Foundation's officers met to bounce ideas off one another concerning architectural designs for seniors that have evolved out of our experience in working with and designing for seniors. These ideas have since grown in breadth and depth, and we are grateful to the Lien Foundation for the opportunity it has given us to explore and contribute. We are most thankful for the many people who have believed in us and supported us during this journey.

Foremost among them are Lee Poh Wah, Gabriel Lim and Radha Basu of the Lien Foundation, who have never ceased to encourage us to develop our ideas and push boundaries.

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We would also like to thank the photographers who generously share their photos with us for this book.

Finally, we want to thank our family and friends without whose unceasing support and encouragement, none of the work we do would be possible.

NOTES

- 1 <http://www.straitstimes.com/business/economy/singapore-will-reach-critical-demographic-crossroad-in-2018-says-uob-economist>
- 2 Population Trends, 2017, Singapore Department of Statistics, http://www.singstat.gov.sg/docs/default-source/default-document-library/publications/publications_and_papers/population_and_population_structure/population2017.pdf
- 3 Population Trends, 2017, Singapore Department of Statistics (Table A1.4)
- 4 <http://www.straitstimes.com/opinion/long-term-eldercare-more-options-now-but-more-data-also-needed>
- 5 [https://www.childcarelink.gov.sg/ccls/uploads/Statistics_on_child_care\(STENT\).pdf](https://www.childcarelink.gov.sg/ccls/uploads/Statistics_on_child_care(STENT).pdf)
- 6 <http://www.singstat.gov.sg/statistics/visualising-data/charts/number-of-births-and-deaths>
- 7 Number and distribution are based on publicly available sources at the time of writing:
<https://www.aic.sg/for-seniors-and-caregivers/all-about-caregiving/care-services#>
<https://www.silverpages.sg/care-services>
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- 8 See William Thomas and Janice Blanchard, "Moving Beyond Place: Aging in Community," *Generations* 33, no. 2 (2009): 12-17.
- 9 A remark raised by participants at the Ageing Symposium organised by MIT Age Lab in 2012.

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COLOPHON

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