

“Promoting Green Living For A Cool Future at Khoo Teck Puat Hospital ”

Liak Teng Lit
Group Chief Executive Officer
Alexandra Health System
8 March 2015



Appointments - Environment



Deputy Chairman, National Environment Agency (2014 to-date)



Member, National Parks Board (2000 - 2004)



Councillor, South West Community Development Council (2001 - 2014)
Chairman, Environment & Health Functional Committee (2011 - 2014)
Vice-Chairman, One Million Plants @ Southwest (2008 - 2011)



Member, Singapore Tourism Board (2004 - 2007)



Chairman/Deputy Chairman, Water Network (2009 - 2013)
Member, Water Network (2004 - 2009)
Ministry of the Environment & Water Resources

Healing a hospital, patients and the world with nature.

Alexandra Hospital Before Restructuring (2000)



Before Restructuring : Our Reputation

- One-star hospital
- A historical site
- Underground tunnel
- Hospital for the old and poor
- Cheap
- 39% would not recommend hospital to others

The Journey Begins

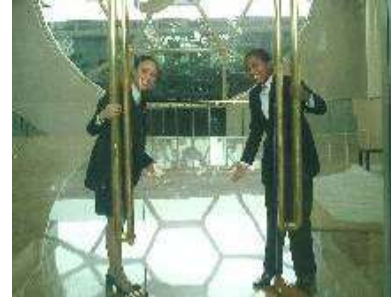
- Visualise
- Simplify
- Prioritise

Visualisation

What will patients see, feel, smell ... when they enter the hospital 5 years from now?

Caring For Our Patients

- Immaculate physical environment (Raffles Hotel)
 - Clean, well maintained
 - Tranquil, restful environment
- WOW level of service (Ritz-Carlton)
 - Patient-friendly processes and systems
 - Friendly, helpful service
 - Well groomed, professional staff
- Highly competent, professional care
 - Highly competent, caring staff
 - People & technical capability to provide quality care



Vision of A Healing Garden

- Shade from the tropical sun
- Sight, scent and sound of a healing garden
- Reduce heart rates and blood pressure



Mrs Rosalind Tan
Chief Gardener



Gardening Session

Hospital gardens proving a big draw

Alexandra opened its grounds, including a soccer field, a year ago; response has been overwhelming

TWICE a month, 18-year-old student Lai Bee Sin takes an hour-long bus ride from Choo Chu Kang to Alexandra Hospital.

It is not because he is ill or visiting patients there. He is just a footballer "in love" with the hospital's soccer field.

"It's in great condition, and I get to use it for free," he said happily.

Every week, youths like him come from all over the island to play on the hospital's field.

The hospital, nestled in Queenstown housing estate, opened its grounds to the public a year ago and response has been overwhelming.

On most days, residents can be seen taking a morning stroll through the hospital's sprawling gardens.

The mini-landscaped park with a fountain and exercise corner was refurbished last year.

Visiting residents are mostly retirees who sit and chat, or read the newspapers on the benches provided, a hospital spokesman said.

One nearby resident and self-professed "nature lover", who declined to be named, said that she walks through the garden several times a month just to "appreciate the scenery and the peaceful surroundings".

The 40-year-old housewife added: "There are not many nature spots in Singapore. I'm very glad that the hospital has opened up its

lovely grounds to the public."

There is no charge for using the 4,000-sq-m soccer field but bookings have to be made in advance.

Hospital operations executive Henry Seow said: "We don't keep track of the number of 'neighbours' popping in now and then, but the field is occupied almost every day."

"This is not surprising, since nowhere else on the island can you get a free field to play on!"

Bee Sin, who plays soccer with 20 friends on the hospital field, said: "Soccer fields at stadiums are not as easily accessible. And some are not of such good quality, either!"

Even staff from the Queenstown Neighbourhood Police Centre and Singapore General Hospital come to use the field.

With so many people using the field, parts of it have become bare and the hospital has just refurbished it for \$10,000.

Mr Seow said: "We're incurring maintenance costs, but we haven't decided whether to charge for the field yet."

Patients and visitors do not mind the open-door policy.

Housewife K.K. Gan, 51, who was visiting her sister at the hospital, said: "So long as the patients aren't bothered, and they get the peace and quiet they need, why not?"



An escape from the urban sprawl has been available since Alexandra Hospital opened its gardens and soccer field to public use. A morning stroll (left) through its lush grounds is something not to be missed, and for the unhurried there are benches to rest on near the fountain (right).



PICTURES: GEORGE GASCON



HEARTLAND HAPPENINGS

By ALICIA YEO

Alexandra Hospital After Restructuring (2003)





THE SINGAPORE
ENVIRONMENTAL
ACHIEVEMENT
AWARD 2002

*President's Award
for the Environment*

Recognising Outstanding Contributions towards Singapore's Environment Sustainability

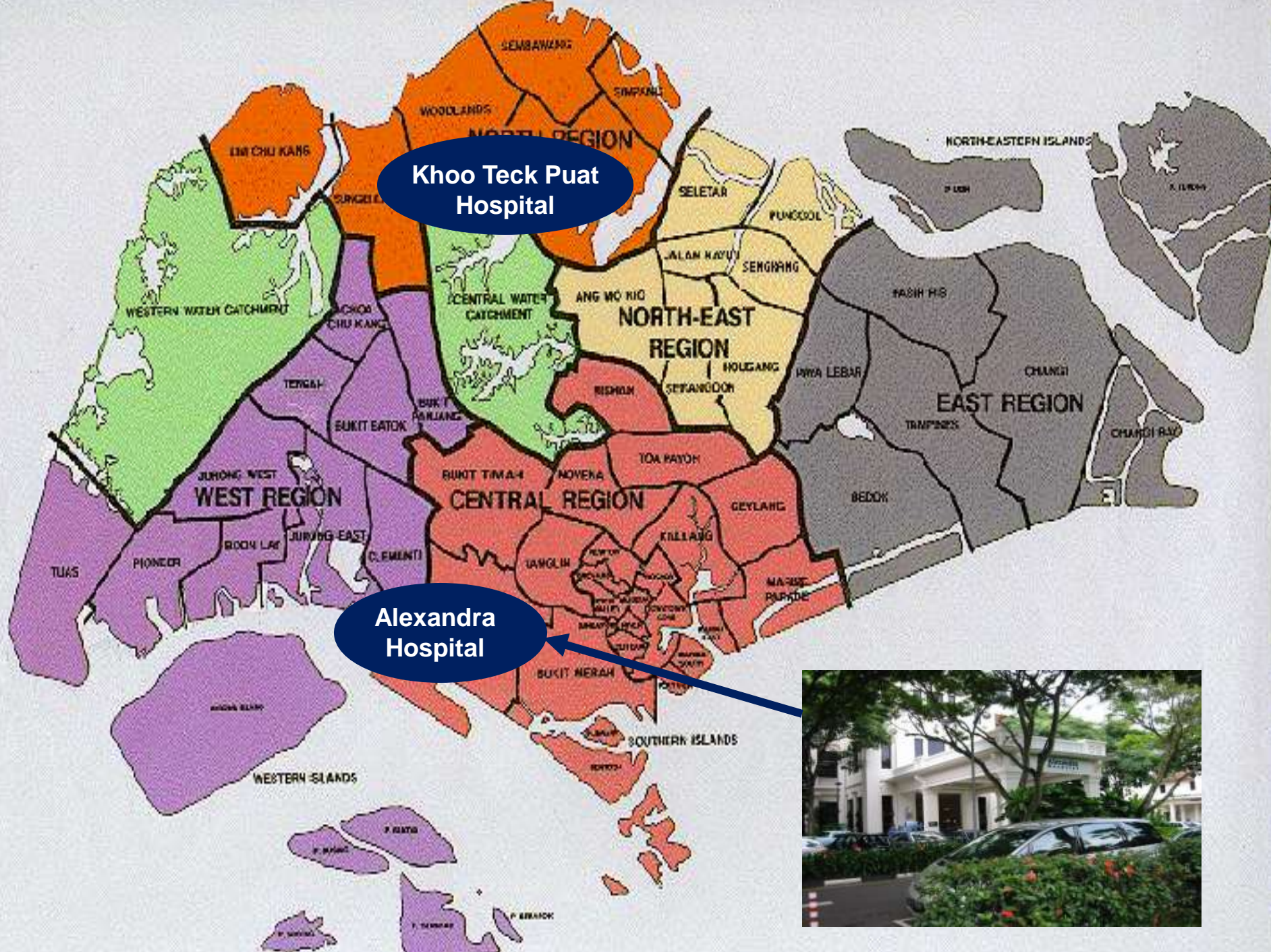
Watermark
AWARD

“Hassle-Free Hospital”

“I posed the challenge to the AH rebuilding team: build a hospital... designed with patients unambiguously at the centre of the focus, with technology fully exploited for the benefit and convenience of patients.... It will be a hospital which is well linked... and to which the patients can be transferred seamlessly... It will be a hassle-free hospital.”

Mr Khaw Boon Wan
Former Minister for Health
Parliamentary Debate
17 March 2004





**Khoo Teck Puat
Hospital**

**Alexandra
Hospital**



November 2006



Challenges To Architects (2004)

- Award winning reference site
- WOW for patients, visitors and staff
- Criticized by small-minded critics
- Reasonable cost

Design Considerations



- Fully integrated with neighbourhood
- Ease of way finding
- Logical clustering of services
- Economy of scale / Diseconomy of scale
- Tropical design
- Healing environment
- Energy efficiency

Design Preference



- Welcoming
- Architectural solutions before engineering solutions
- Modernising traditional designs that work
- Greenery preferred over hard surfaces
- Ease and low cost of maintenance

Design We Do Not Want



- Architect's ego trip
- Cold, unwelcoming structure
- Inappropriate for tropical weather

Finding The New Breakthrough

Learn from everyone

Follow no one

Look for pattern

Work like hell

Energy Efficient



- 30% more energy efficient than present hospitals
- Tropical building
- Natural ventilation
- Overhangs
- High ceilings
- Use of solar & wind power





Directory	
10	Bed 1001 - 1020
9	Bed 901 - 933
8	Bed 801 - 833
7	Bed 701 - 732
6	Bed 601 - 633
5	Bed 501 - 533
4	Bed 401 - 433
Offices Medical Social Work Dept Clinical Research Dept Nurse Education Unit	



Nursing Homes

Temple



FACTOR FOUR

DOUBLING
WEALTH,
HALVING
RESOURCE USE

THE NEW REPORT TO THE CLUB OF ROME

ERNST VON WEIZSÄCKER

AMORY B. LOVINS • L. HUNTER LOVINS



Shangri-La Hotel



Cheonggyecheon Restoration Project, Korea

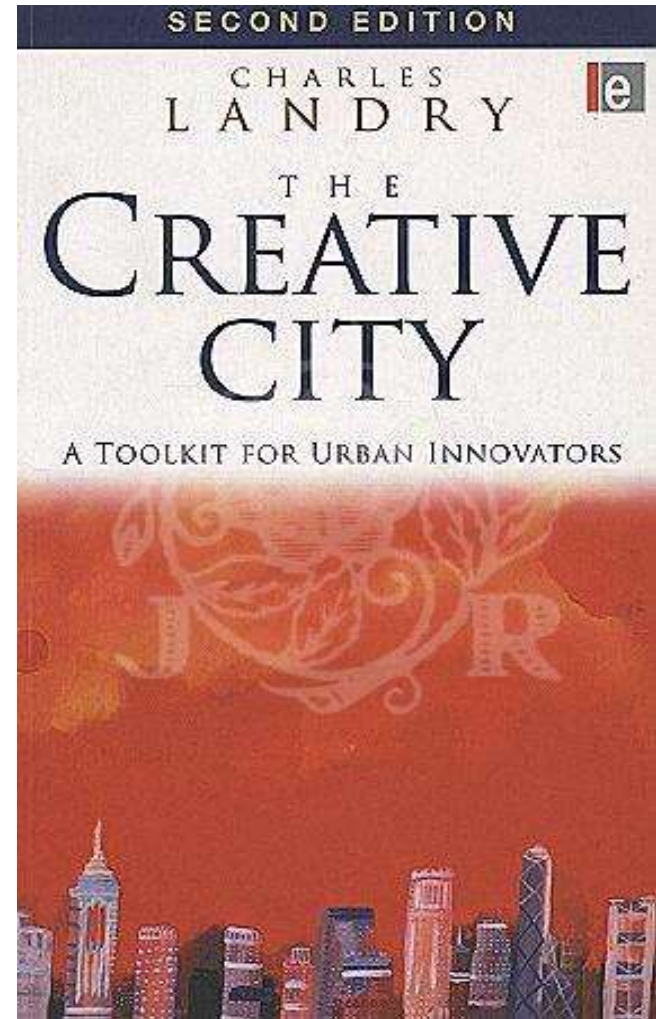


Singapore Botanic Gardens

Placemaking



Mr Fred Kent, Founder & President
- Project for Public Spaces





Wards



Intensive Care Unit



Specialist Outpatient Clinics

Lobby





Basement 1

Level 1





Balcony Planting

The Straits Times, 3 July 2010

PART **E**

Life!

THE STRAITS TIMES
SATURDAY, JULY 3, 2010

A MEDICAL Shangri-La

The design of the new Khoo Teck Puat Hospital in Yishun is partly inspired by the gardens and a waterfall of the five-star hotel. It is not the only reason it won an award for being a green building. **TAY SUAN CHIANG** reports. **E8&9**

"Third party" rumours
Wear out singer Rene Liu **E3**

Jay talking
Don't jeer at the cheer **E12**

Friendly monster
Skoda Yeti is great to drive **E13**



Green operation

The greenery of the hotel and the building's design are the main reasons for the award. The building's design is inspired by the gardens and a waterfall of the five-star hotel. It is not the only reason it won an award for being a green building.

Did you know? The building's design is inspired by the gardens and a waterfall of the five-star hotel. It is not the only reason it won an award for being a green building.

Keeping direct sunlight out

Just being green is not enough. The building's design is inspired by the gardens and a waterfall of the five-star hotel. It is not the only reason it won an award for being a green building.

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Did you know? The private ward (above and left) are air-conditioned. However, if the patient wears natural ventilates and opens the windows, the air conditioning is cut off automatically. In addition, the air conditioning is cut off automatically. In addition, the air conditioning is cut off automatically.

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A Community Garden for Residents



Awards



- **Design of The Year**
DesignSingapore Council and Urban Redevelopment Authority



- **Healthcare Organisation of the Year**
FutureGov Magazine



- **International Health Project (over 40,000 m²)**
- **International Sustainable Design**
Design & Health International Academy Awards 2011



- **Institutional Architectural**
FuturArc Green Leadership Award 2011



- **Green Mark Platinum Award (2009)**
- **Universal Design Gold Award (2011)**
Building and Construction Authority



- **Building of the Year Award (2011)**
- **Design Award for Healthcare Facility (2011)**
Singapore Institute of Architects



- **Skyrise Greenery Award First Prize (2010)**
Singapore Institute of Architects & National Parks Board

5 Keys To Health

- Eat wisely
- Exercise regularly
- Think and live positively
- Don't smoke
- Good personal and public hygiene



Staff Health Screening and Fitness Challenge



AHS as Living Lab



Reduce



Reuse



Recycle



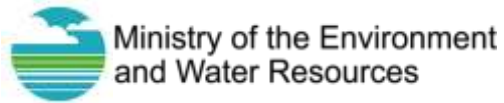
Refuse



Yishun Pond (Before)



Yishun Pond Rejuvenated



Make Singapore a great place to live, work and play in for man and flora and fauna of rainforest



Noah's Ark of Tropical Rainforest Species

Conservation of Indigenous Species

- Sanctuary for indigenous plants
- Sanctuary for butterflies, birds and fishes
- Improving quality of soil
- Maximising productive use of land
- “Natural” pest control



Mr Lee Chiu San



Dr Tan Hwa Luck



Dr Ho Hwa Chew



Ms Ivy Singh



Mr Tay Kheng Soon

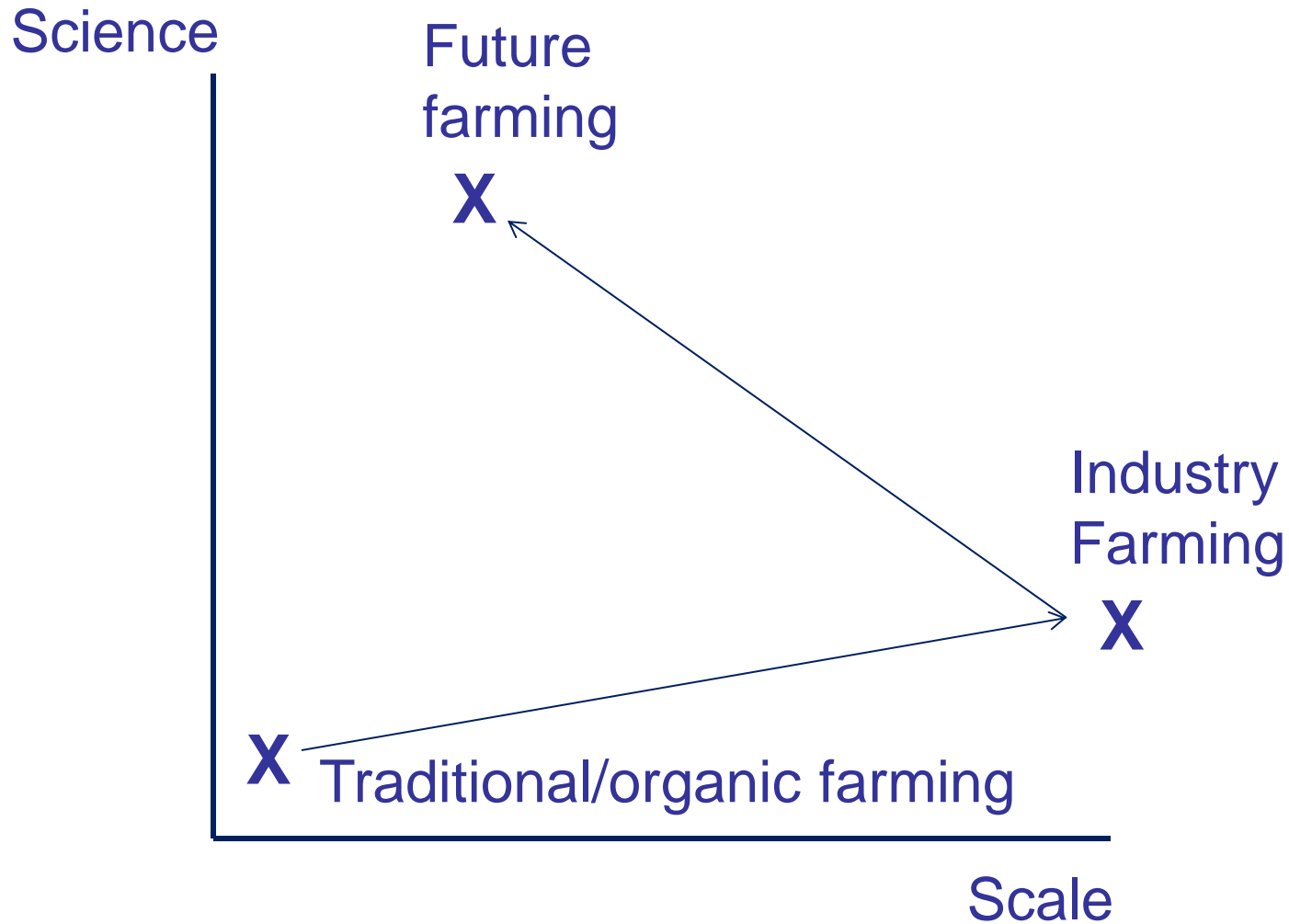
3 Shortages

1. Cheap energy
2. Water
3. Food

Rooftop Farming



Urban Farming



Yishun Community Hospital (End 2015)

- 428 beds



Kampung Admiralty (2017)

Creating a vibrant community

ALL-IN-ONE VILLAGE

This integrated development next to Admiralty MRT combines housing, health-care and care facilities, and shops amid lush greenery in a bid to be a 'modern kampung'

Studio apartments

- Two blocks with about 100 units, up for sale in the July Build-To-Order exercise
- New features: induction stoves, "resilient flooring" with a parquet design and retractable racks for easier drying of laundry

Community park

- Features fruit trees such as rambutan and kaffir lime
- Includes a three-generational playground for both young and old

Community farm

Residents can grow vegetables, herbs and ornamental plants

Eldercare and childcare centre

- Located side by side to promote bonding between generations
- The eldercare centre has space for about 100 seniors, and the childcare centre will offer 200 places

Admiralty Medical Centre

- Spans two levels with an area of 8,500 sq m
- Offers outpatient consultation, day surgery, rehabilitation and diagnosis

Hawker centre

- Will have 50 cooked food stalls and about 900 seats

Supermarket

- After feedback from residents that supermarkets in the area were too small, the new one will cover 1,000 sq m

Basement carpark and bicycle parking

- Two basement floors will house the carpark and a mechanical bicycle parking system which can store 500 bicycles

Community plaza and shops

- An airy space for community activities, from National Day dinners to cultural performances
- Grassroots organisations will provide feedback on what the 20 shops and two or three food and beverage outlets should offer

GREEN FEATURES

Pneumatic waste conveyance system

- Household trash will zoom through vacuum pipes underground into a sealed container which will be collected by trucks

Bioswales

- Rainwater will be filtered through these sloping stretches of plants and soil on the ground floor

Solar panels

- The apartment blocks will be topped with solar panels to power common lighting, for instance

Source: HDR

The whole is more important than the parts

Woodlands Integrated Healthcare Campus (2020)



Sembawang Regional Primary Care Centre (SRPCC)

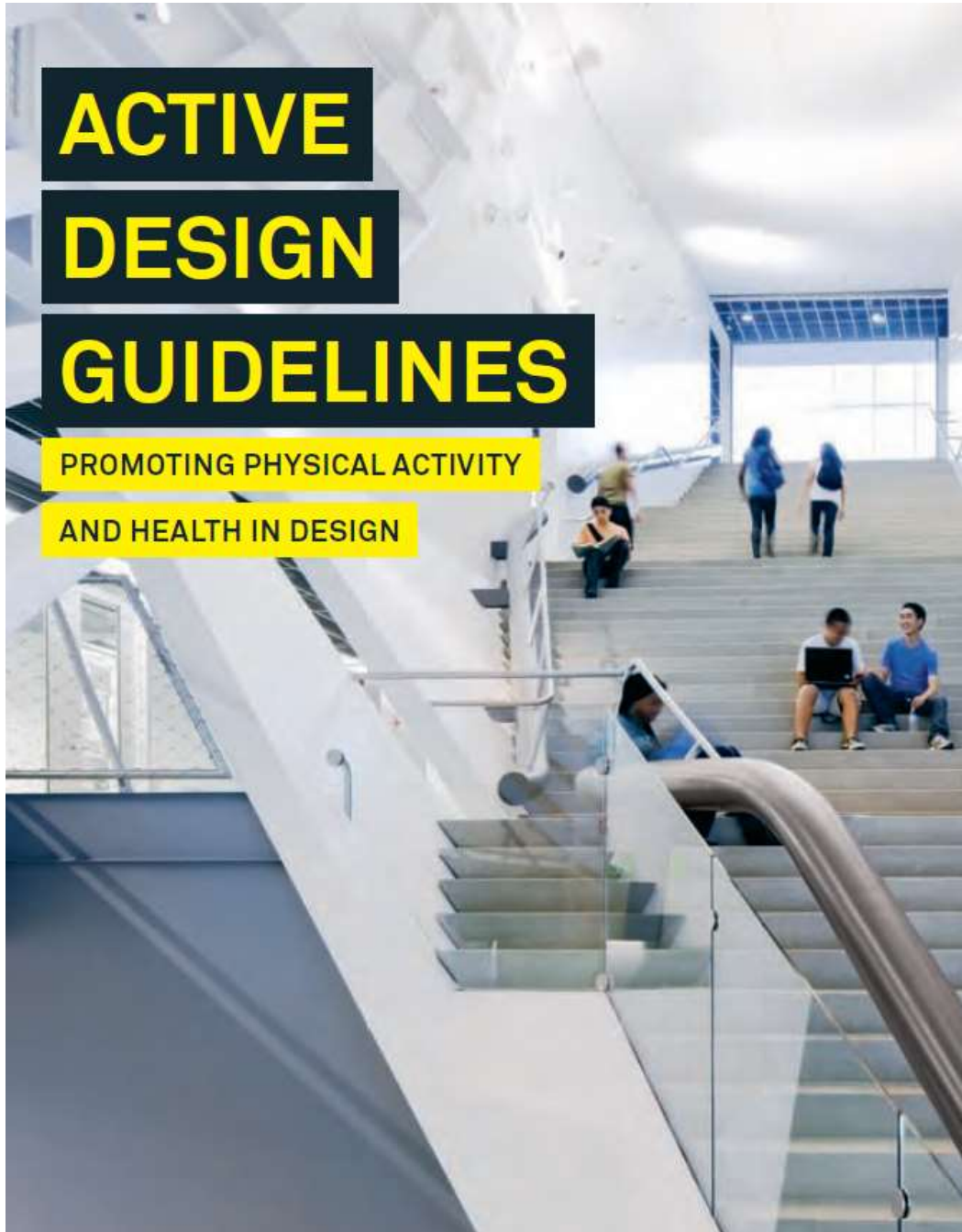
INDICATIVE ADJACENCY OF FACILITIES



ACTIVE DESIGN GUIDELINES

PROMOTING PHYSICAL ACTIVITY

AND HEALTH IN DESIGN



Discovery Singapore Ride



Think **BIG**



 Khoo Teck Puat Hospital
Ultimate Health



Dig Deep

 Khoo Teck Puat Hospital
Ultimate Health


Start Small



 Khoo Teck Puat Hospital
Ultimate Health

Act **Fast**



 Khoo Teck Puat Hospital
Ultimate Health

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