Singapore Health & Wellness

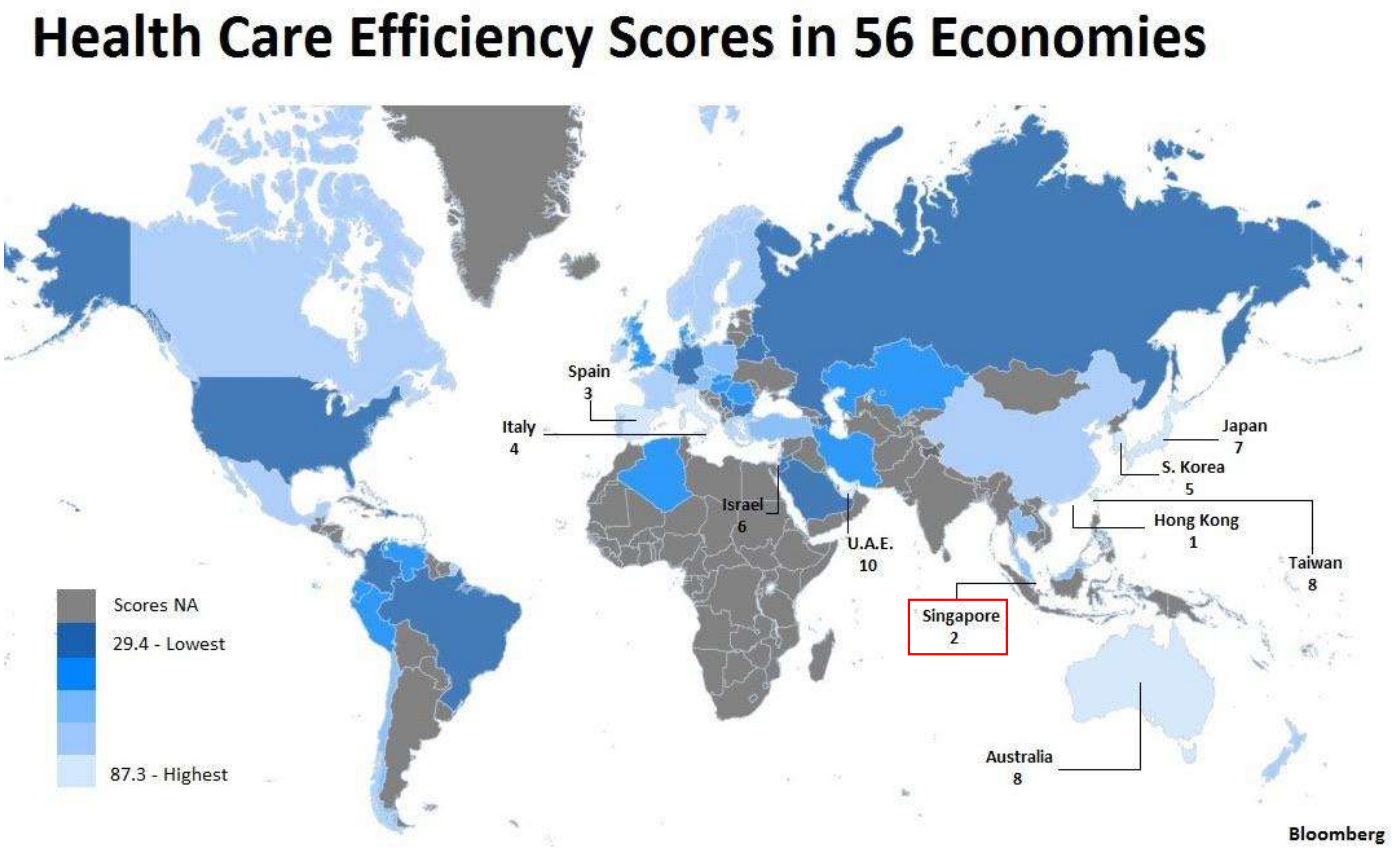


Lim Lip Chuan, Frankie
Director Healthcare
CPG Consultants Pte Ltd

Singapore has one of the best Healthcare Systems in the World

1. Singapore
2. Japan
3. South Korea
4. Taiwan
5. China
6. Israel
7. Norway
8. Iceland
9. Sweden
10. Switzerland

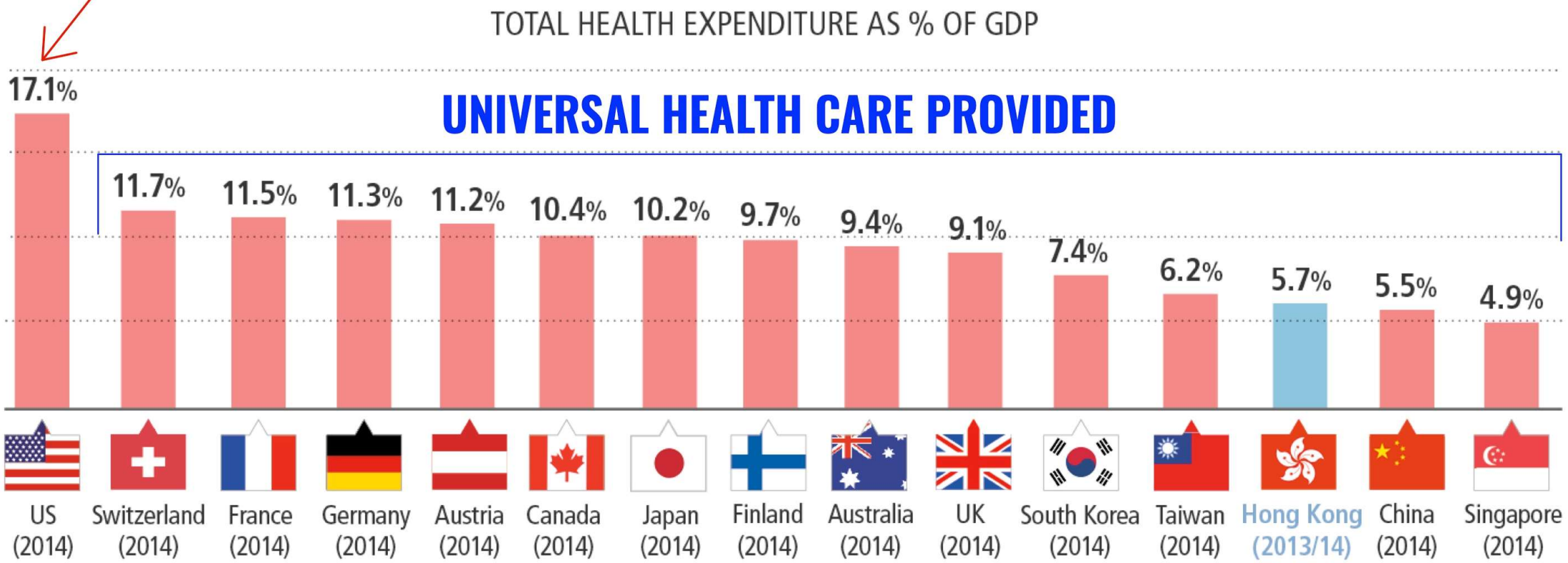
Source: The Legatum Prosperity Index™ 2023



U.S. Near Bottom, Hong Kong and Singapore at Top of Health Havens - Bloomberg

HEALTH EXPENDITURE COMPARED TO OTHER COUNTRIES

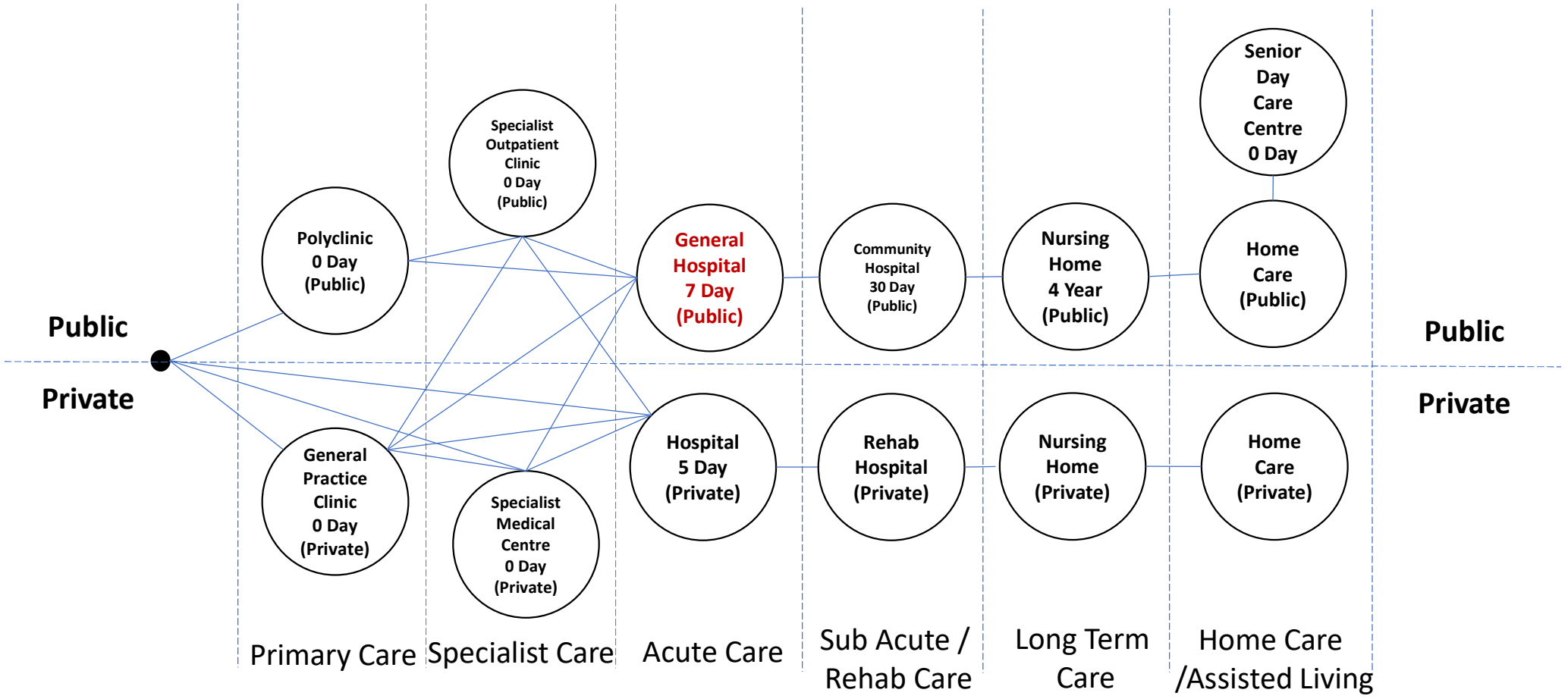
What is wrong with us?



Other countries think U.S. health care is both expensive and barbaric. They are right. – INDIVISIBLE VENTURA

Singapore Care Continuum

- **Appropriate services delivered to each patient's needs**
- **Ensuring resources are allocated appropriately**



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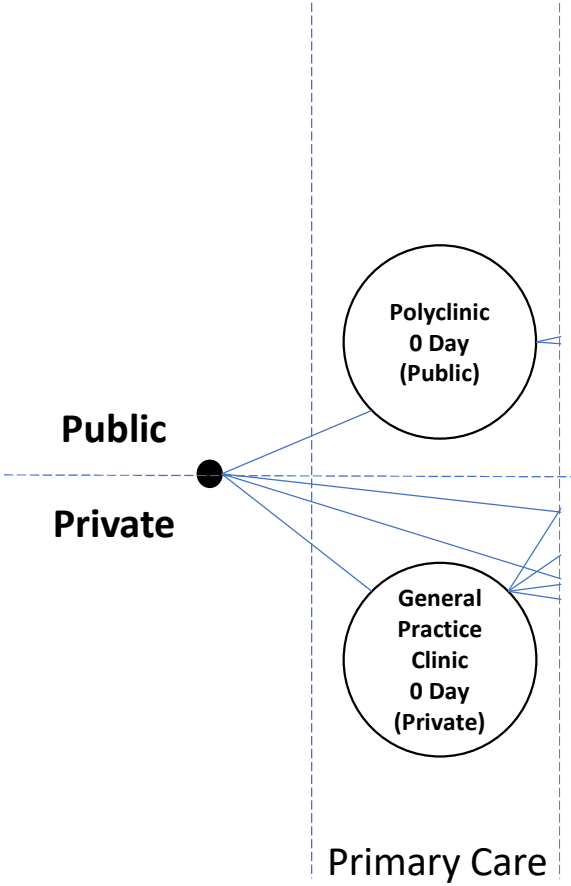









Singapore Care Continuum

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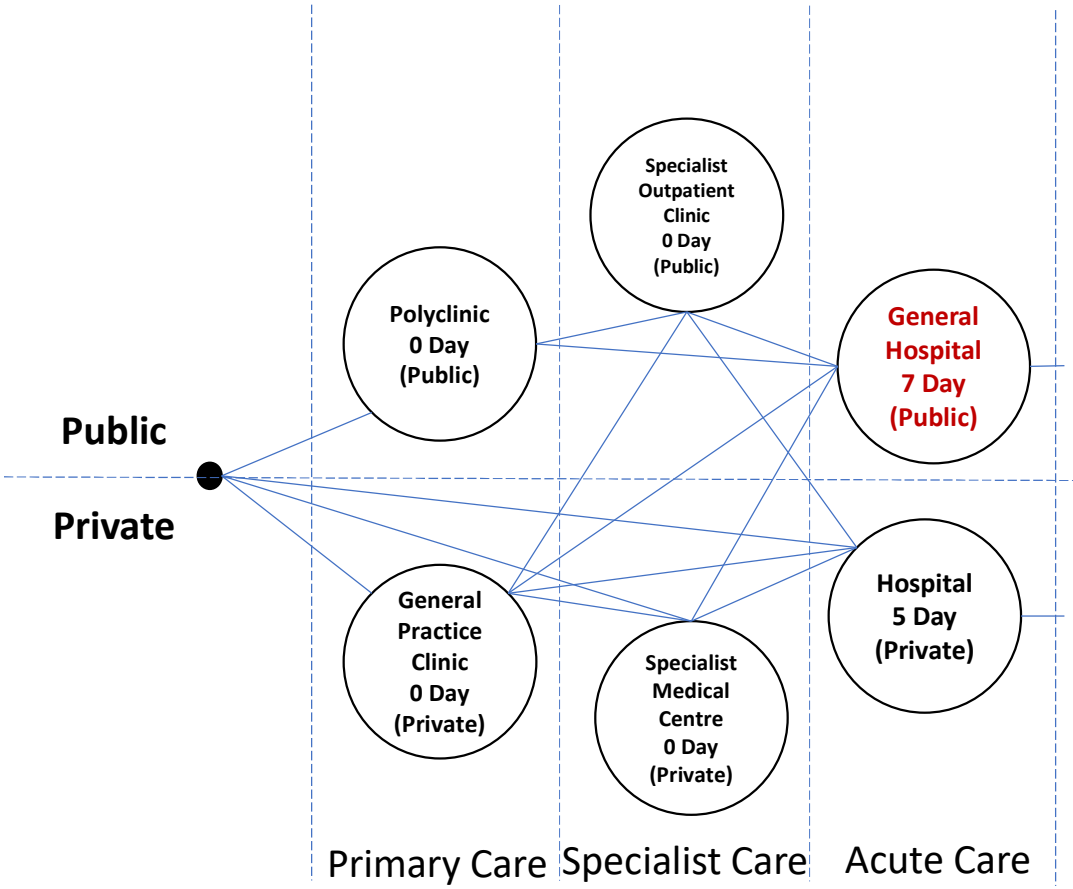





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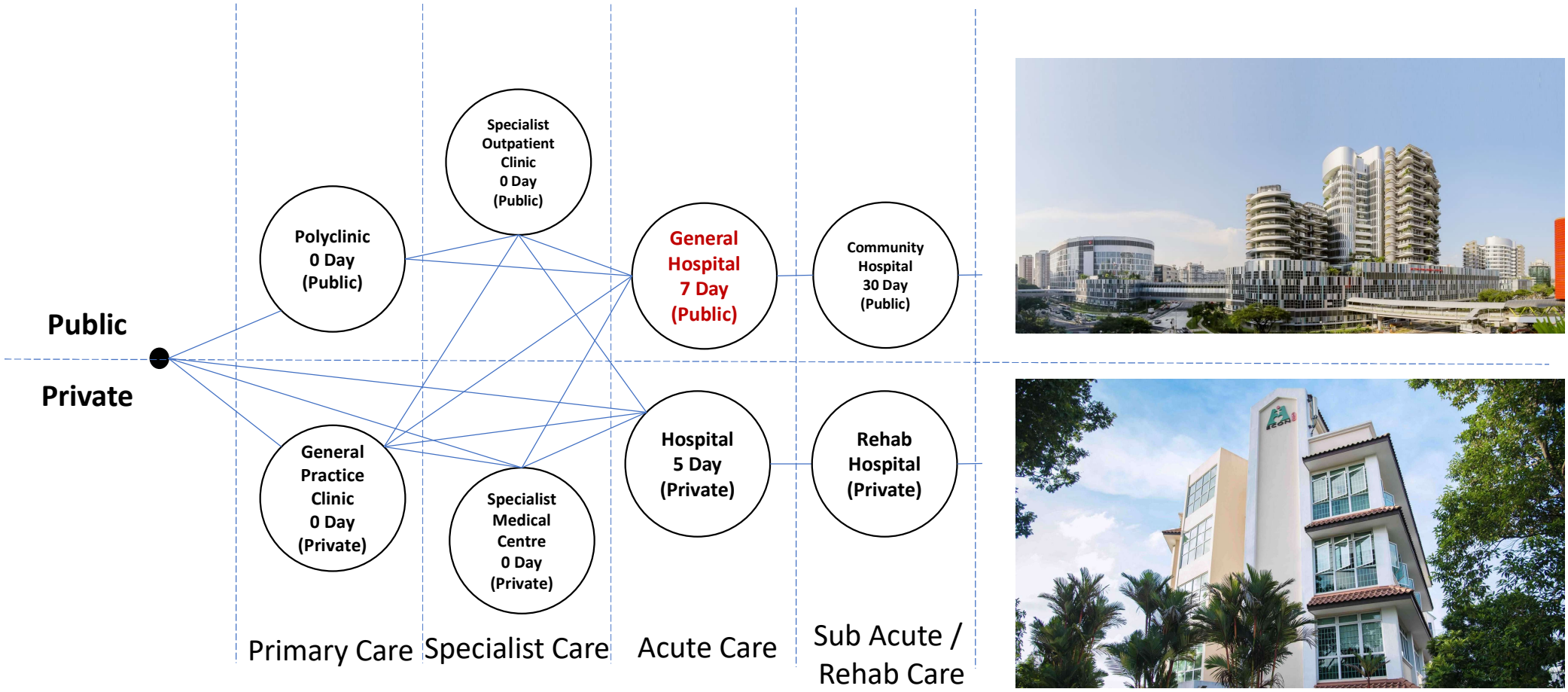

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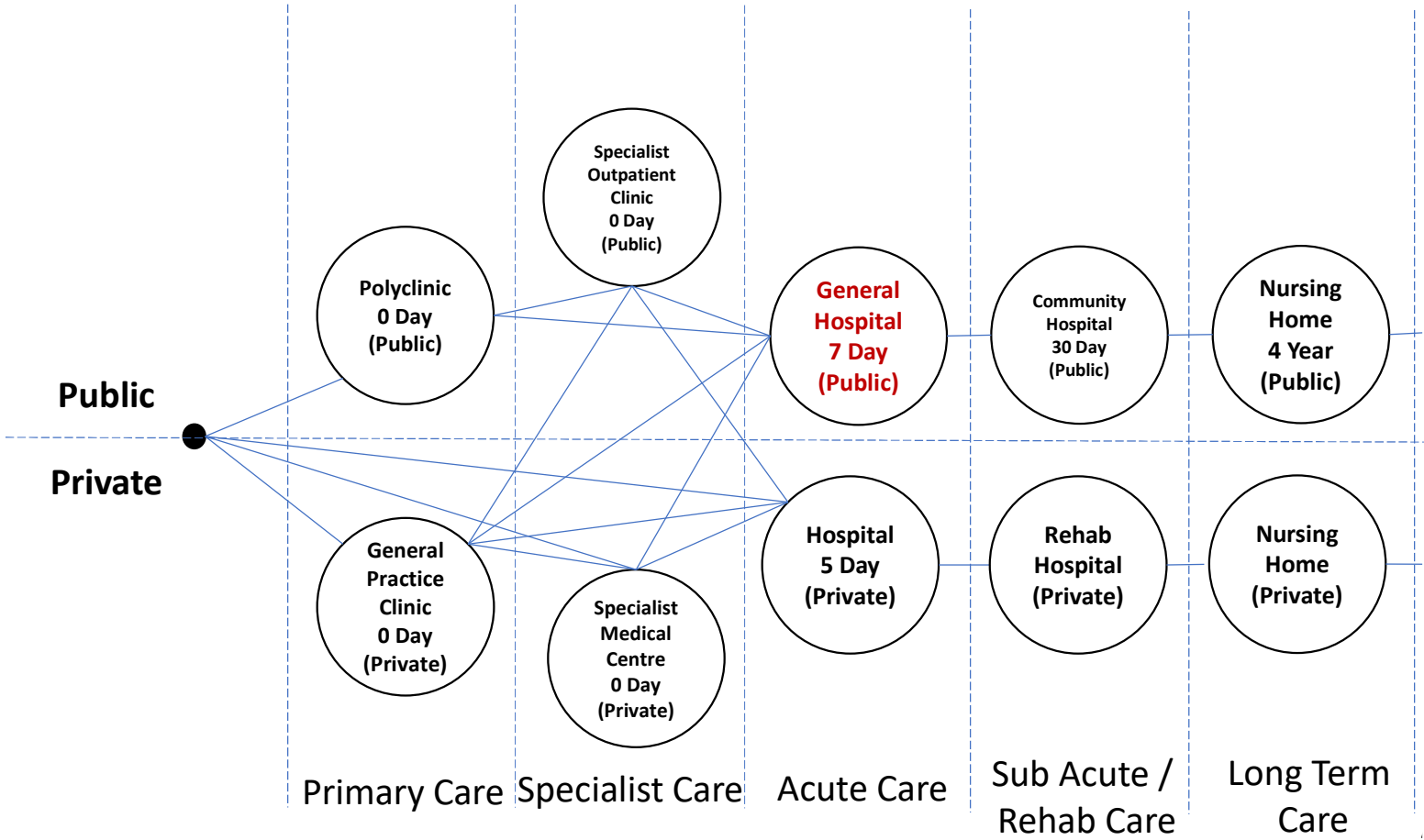
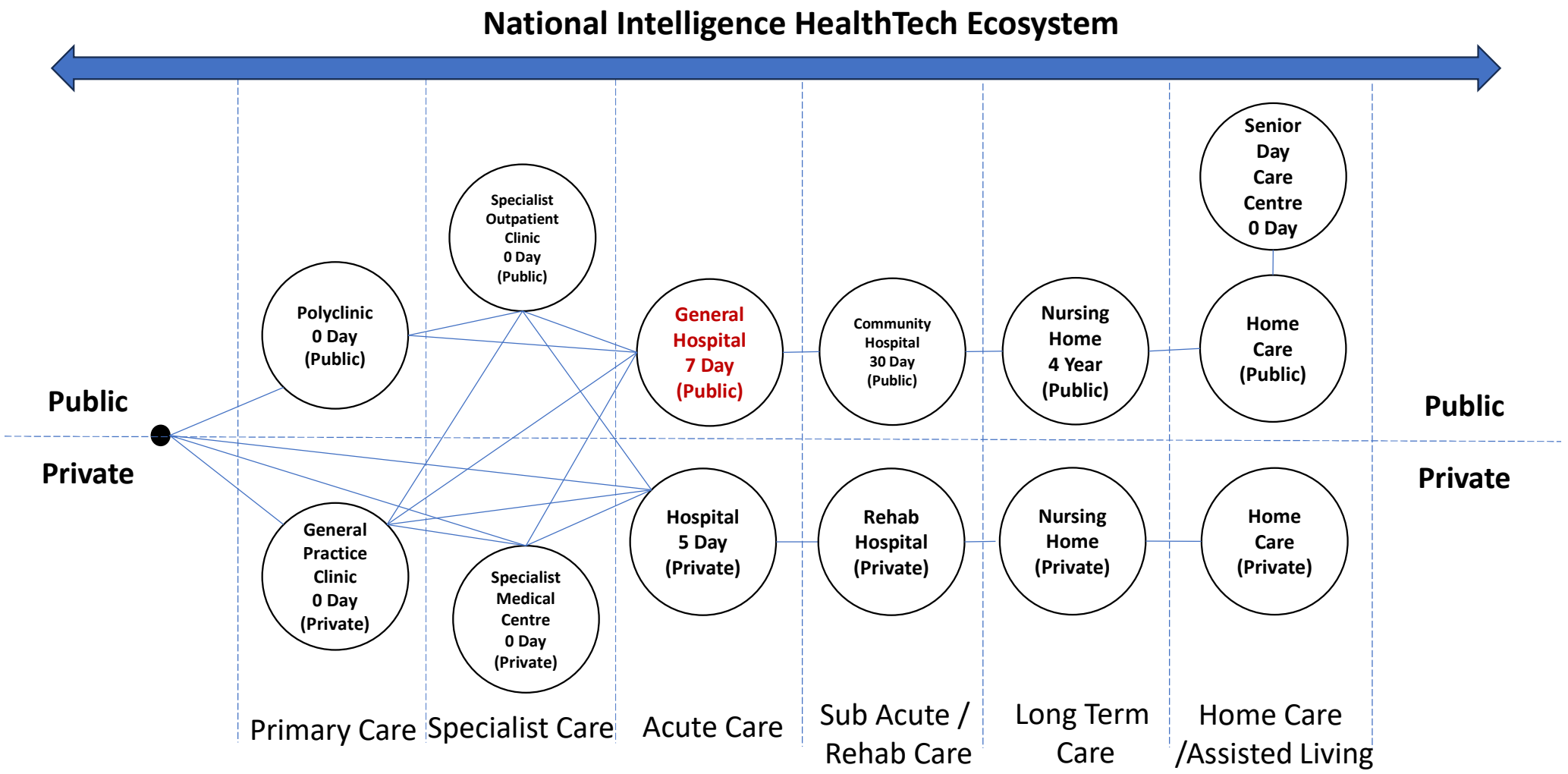






Singapore Care Continuum

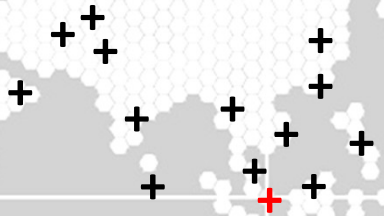


CPG Healthcare

>40 **years experience developing Singapore Healthcare**

1 **stop hospital design consultancy**

>20 **years of overseas consultancy experience**



Singapore

China – India – Pakistan – Myanmar – Philippines – Vietnam - Malaysia – Afghanistan – Tajikistan – Maldives – Brunei – Macau - UAE

CPG Healthcare

Health & Wellness Development

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  - master planning
  - architectural & engineering design
  - medical planning expertise
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Design Philosophy

Biophilia & Salutogenesis

Contextually Appropriate

Community Connected

Scalability & Modularity

Resilient Planning

Khoo Teck Puat Hospital （2006-2010）

General Hospital：600 beds

Awards Singapore President's Design Award 2011， Design & Health International Academy Design Awards 2012, BCA Green Mark Platinum Award 2008



tion with RMJM Hillier






KHOO TECK PUAT HOSPITAL

First Annual Stephen R. Kellert Biophilic Design Award Goes to Khoo Teck Puat Hospital

Nature's healing power is in abundance in this Singapore hospital



Photo courtesy of Khoo Teck Puat Hostpital

INTERNATIONAL LIVING FUTURE INSTITUTE™

More From International Living Future Institute

Regenerative Retrofit: California's First Living Building.

Wednesday, September 23, 2020 - 6:00pm

Inaugural Zero Carbon Conference Focuses on Proven, Practical Strategies for Buildings and Communities

Wednesday, August 12, 2020 - 5:20pm

World's First Certified Zero Carbon Sports Venue Will Prove Green Building Is Possible at Any Size If Climate Action Is Priority

Wednesday, July 15, 2020 - 2:45pm

More

Videos from International Living Future Institute



Leaders "Sustaining Hope Within Crisis" by Bringing Innovative Projects to Life

Desa ParkCity Township KL, Malaysia



DESA PARKCITY

Desa ParkCity Township KL, Malaysia



MODERN PARKLIFE



GATED AND GUARDED

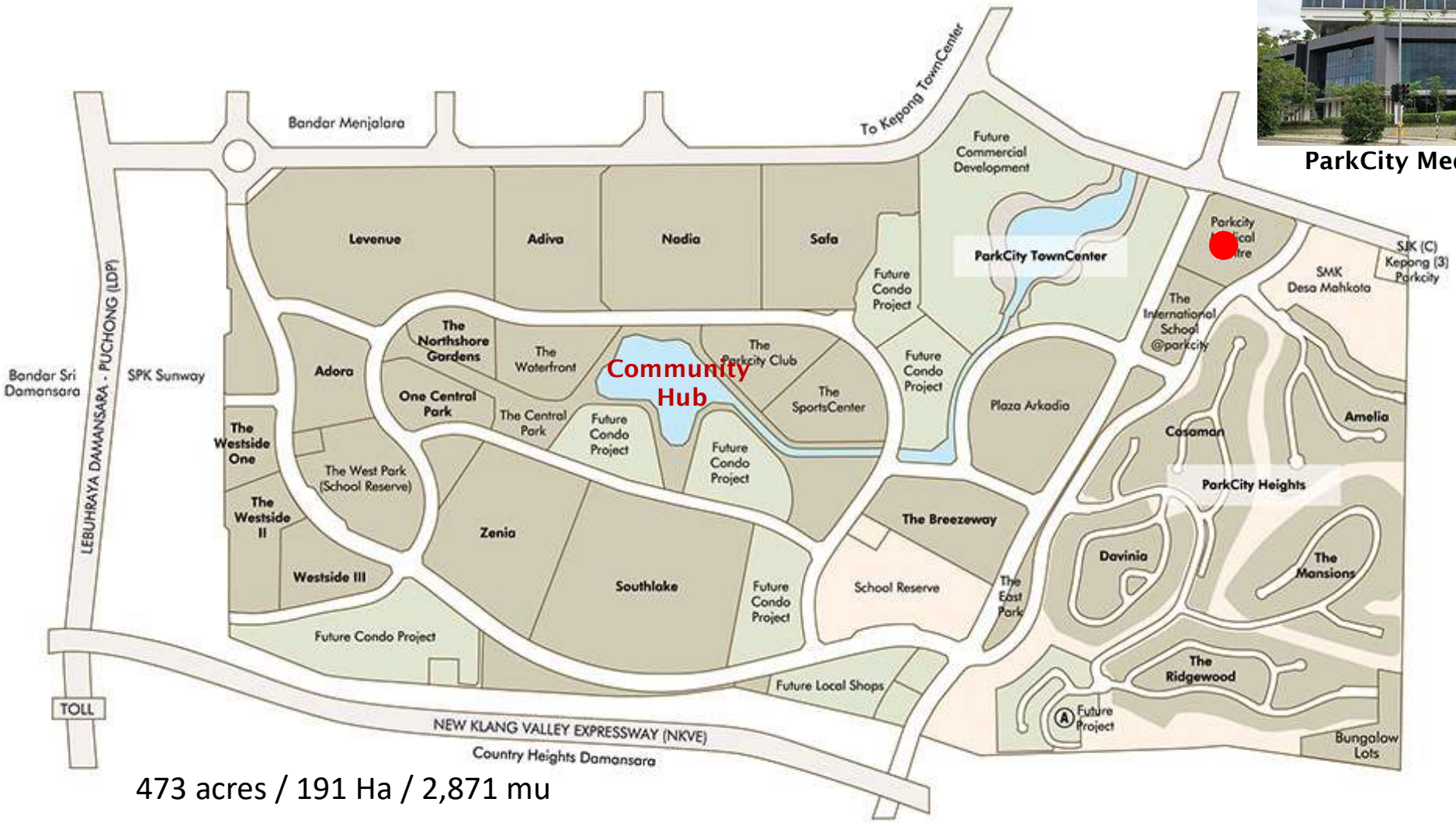


CLOSE TO NATURE

Desa ParkCity Township KL, Malaysia



ParkCity Medical Centre, 2013



473 acres / 191 Ha / 2,871 mu

DESA PARKCITY



ParkCity Medical Centre













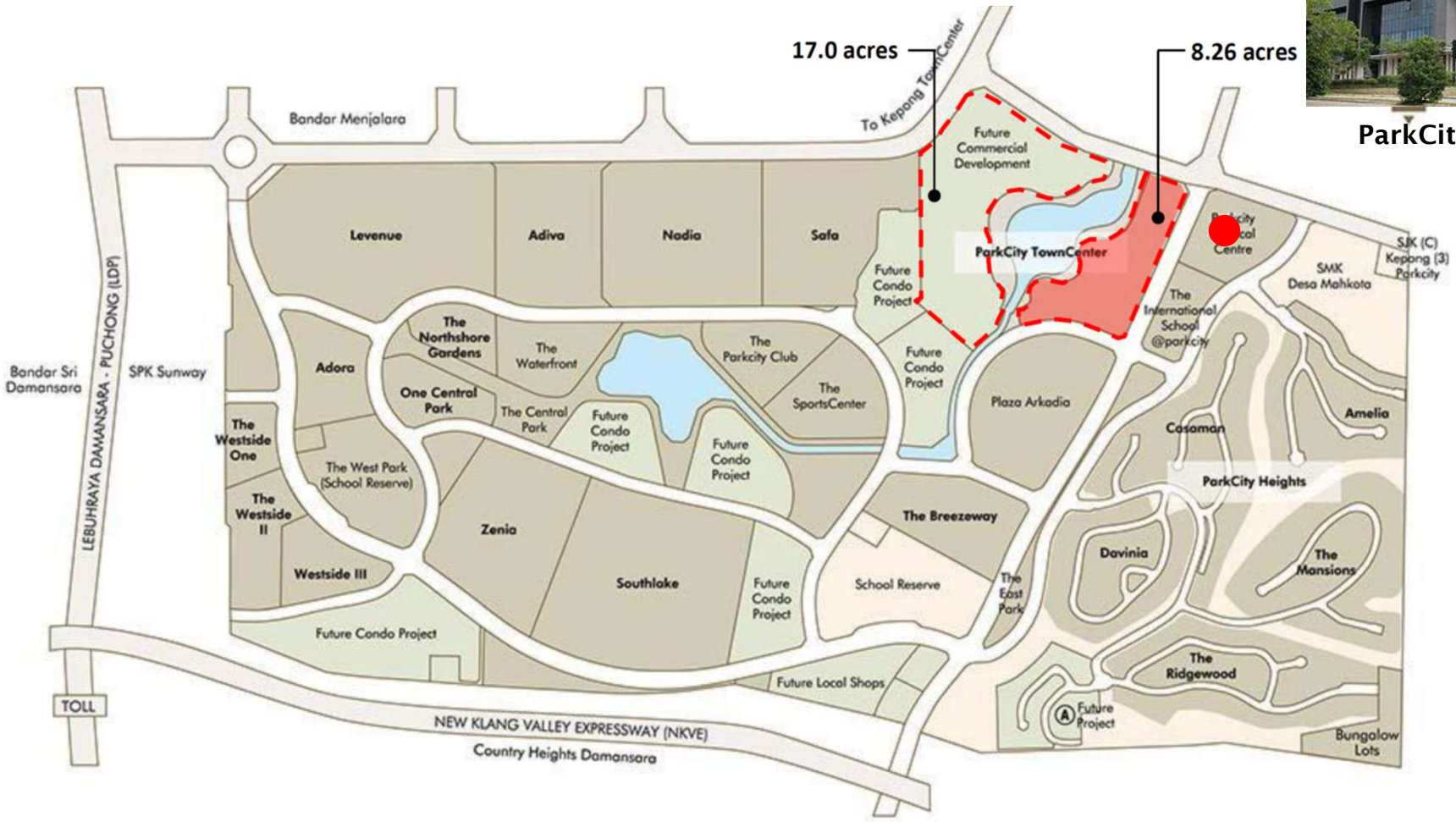
ParkCity Medical Centre

Desa ParkCity Township

KL, Malaysia



ParkCity Medical Centre, 2013

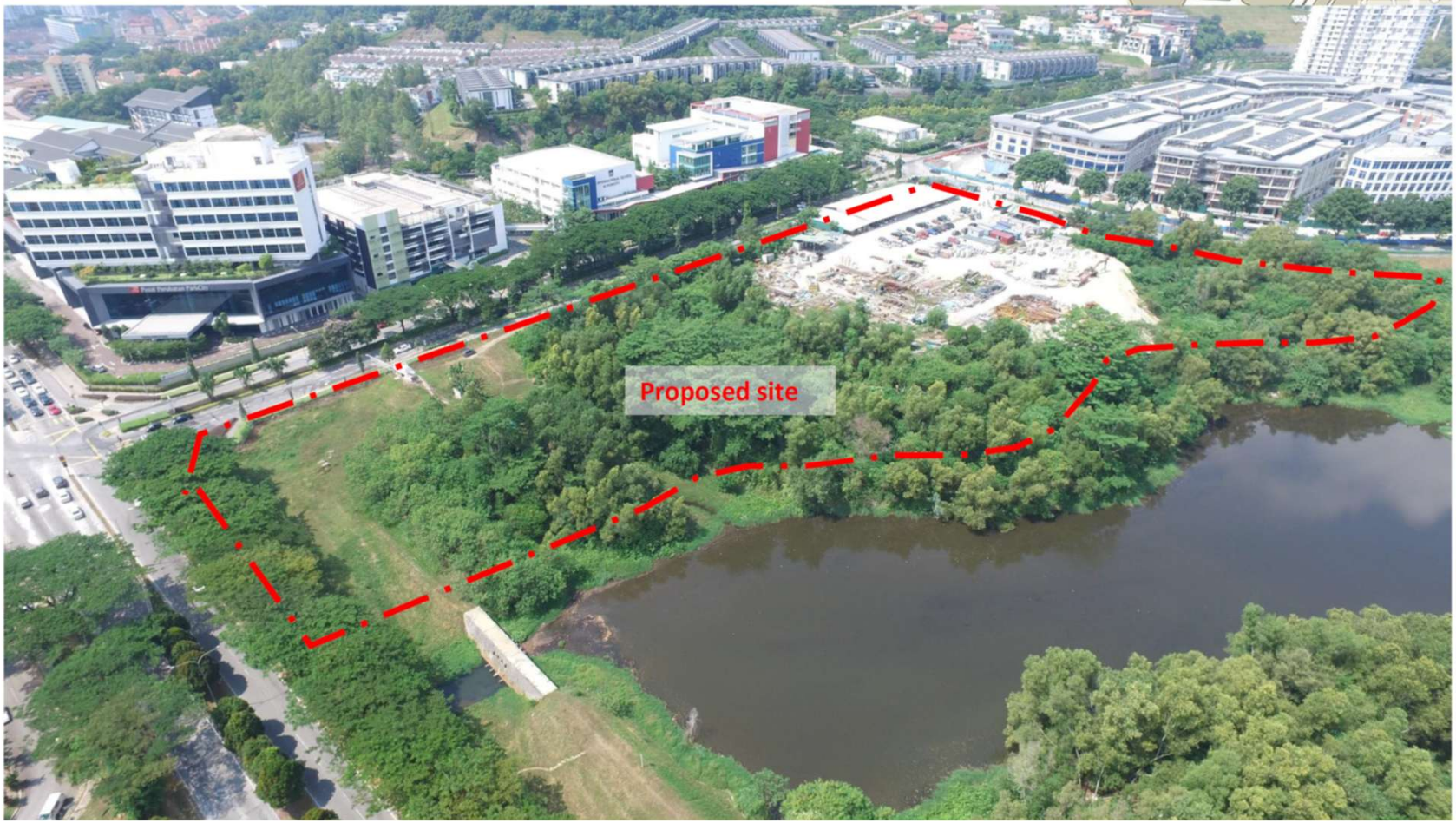


DESA PARKCITY

Desa ParkCity Township

KL, Malaysia





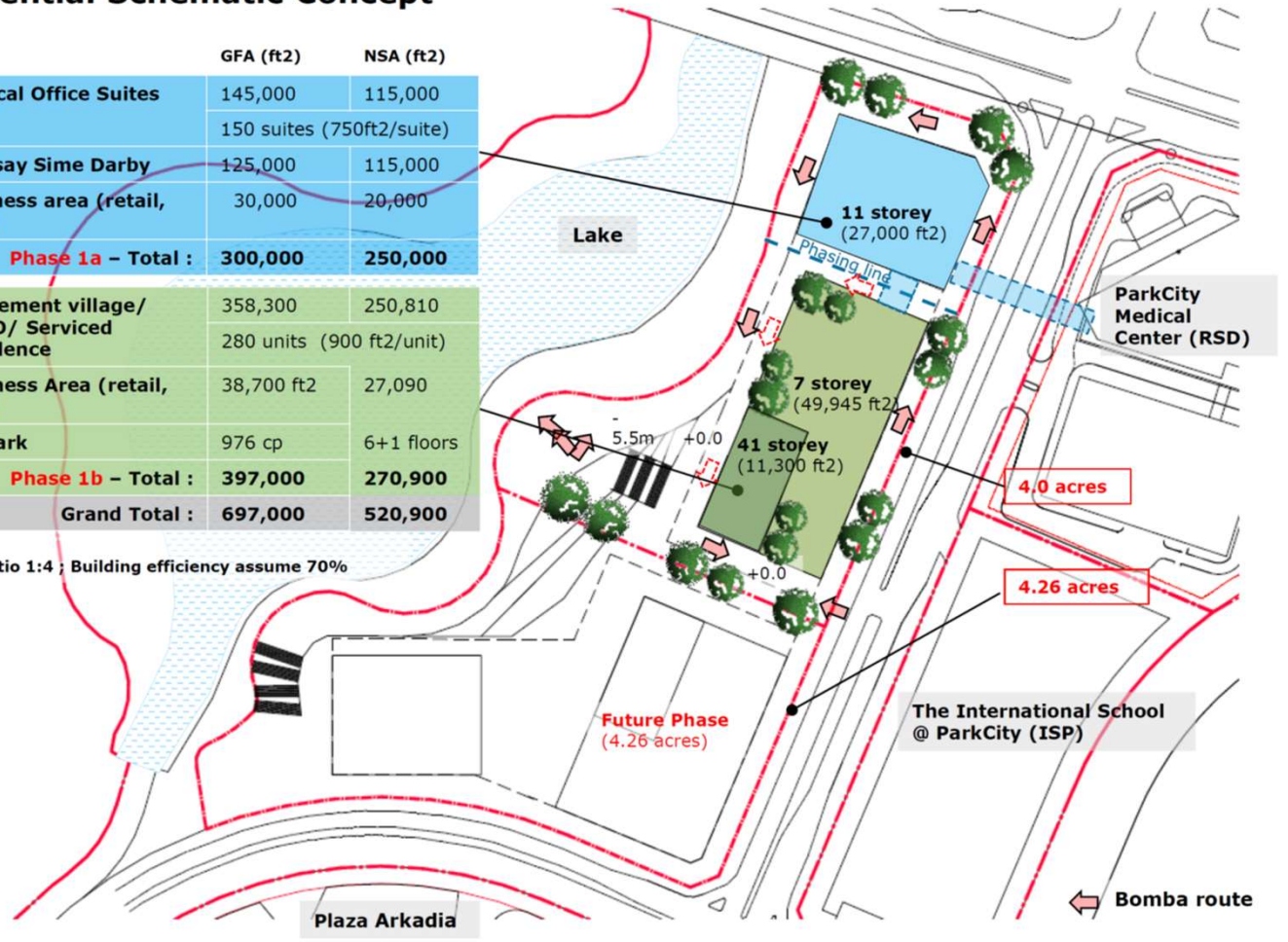
Desa ParkCity Township

KL, Malaysia

Potential Schematic Concept

	GFA (ft2)	NSA (ft2)
Medical Office Suites	145,000	115,000
	150 suites (750ft2/suite)	
Ramsay Sime Darby	125,000	115,000
Business area (retail, F&B)	30,000	20,000
Phase 1a – Total :	300,000	250,000
Retirement village/ SOHO/ Serviced Residence	358,300	250,810
	280 units (900 ft2/unit)	
Business Area (retail, F&B)	38,700 ft2	27,090
Carpark	976 cp	6+1 floors
Phase 1b – Total :	397,000	270,900
Grand Total :	697,000	520,900

Note:
Plot ratio 1:4 ; Building efficiency assume 70%



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KL, Malaysia

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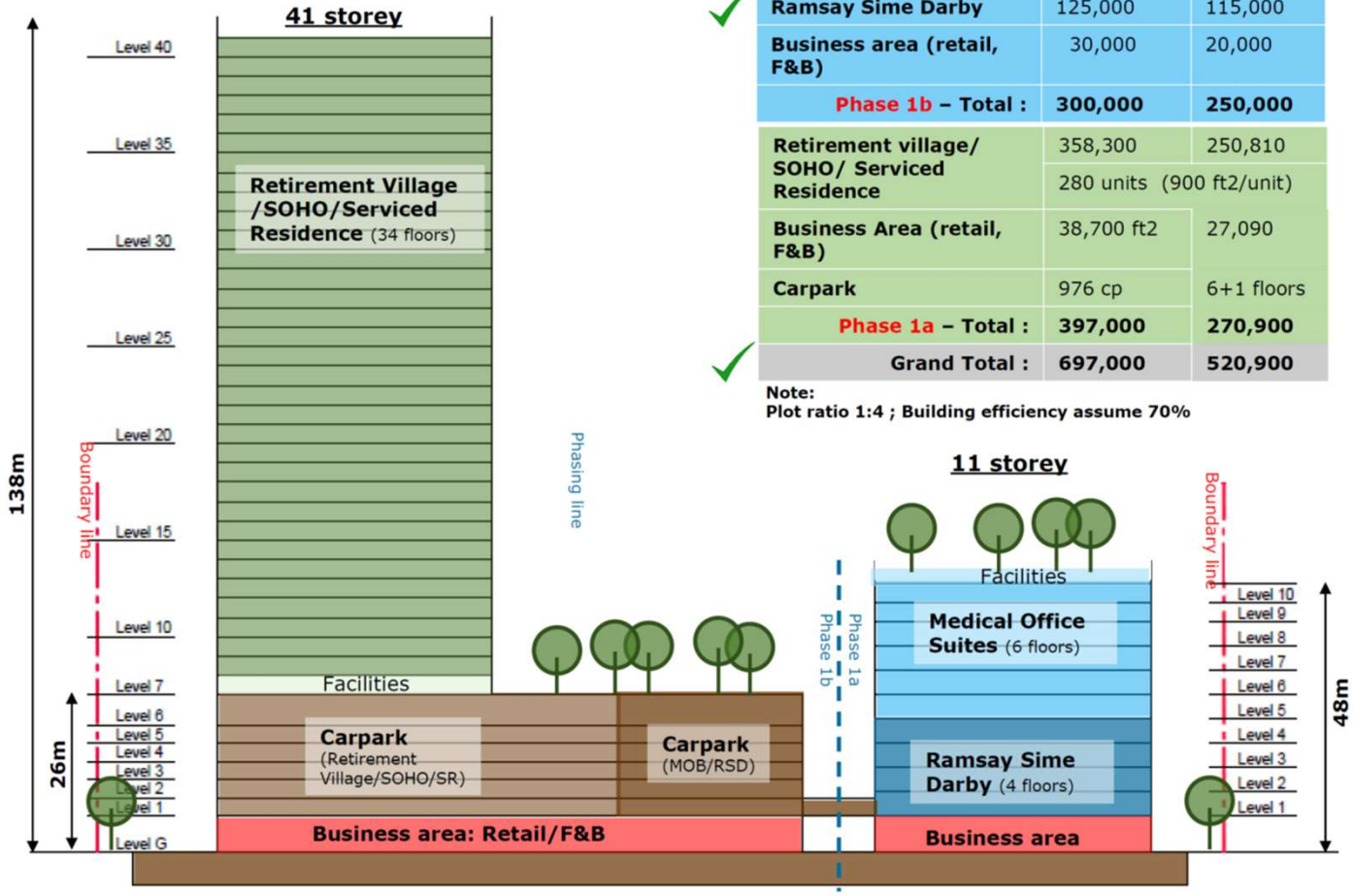

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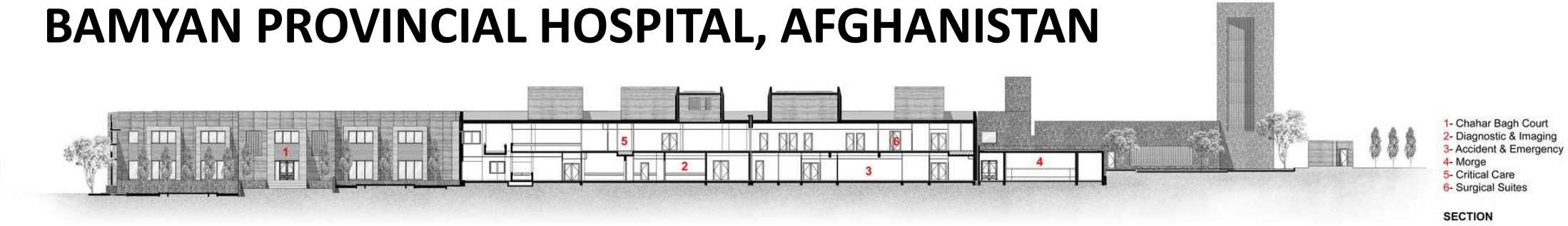
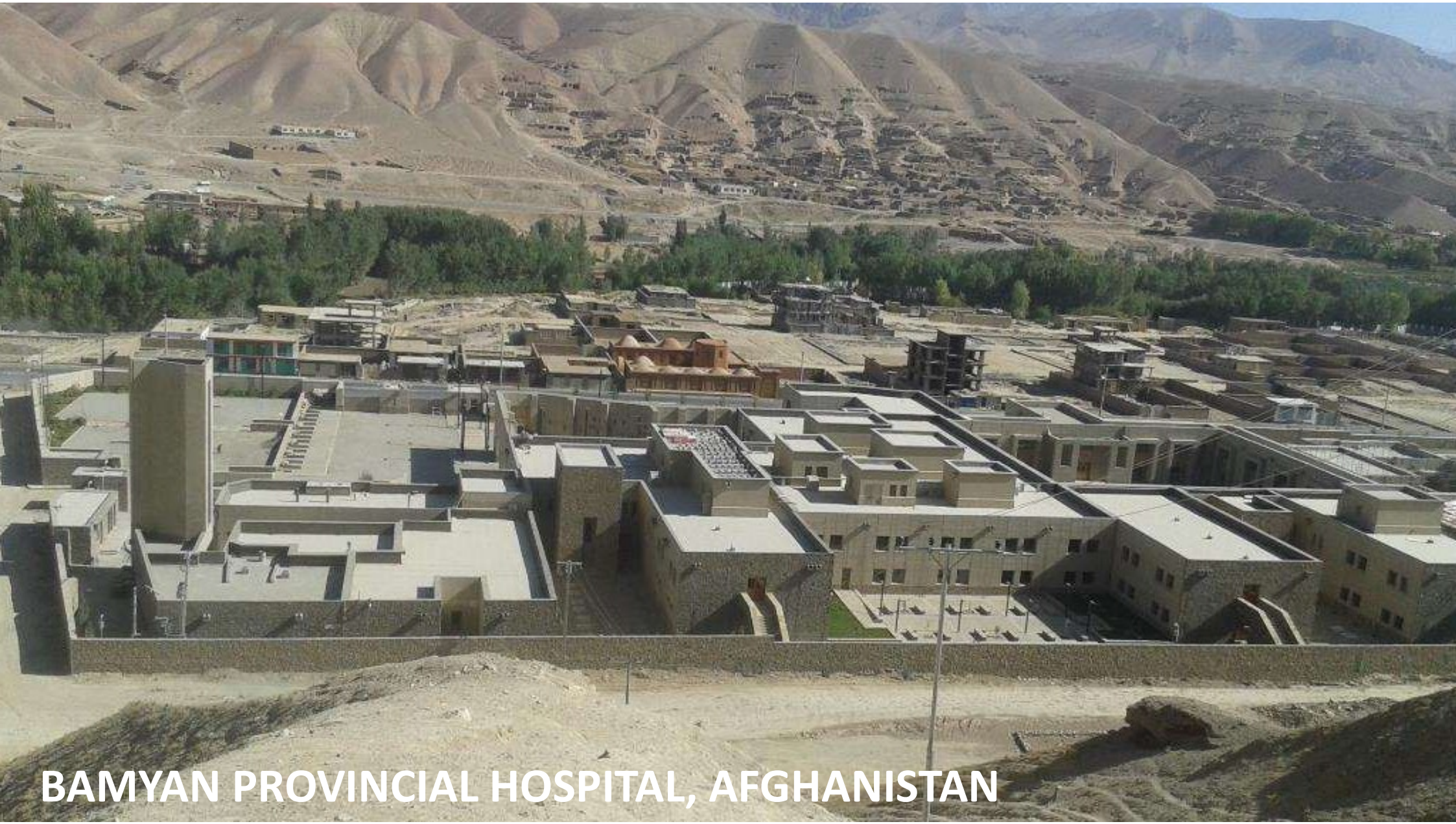
BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN



SECTION



BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN



BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN









BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN









BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN









BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN



BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN



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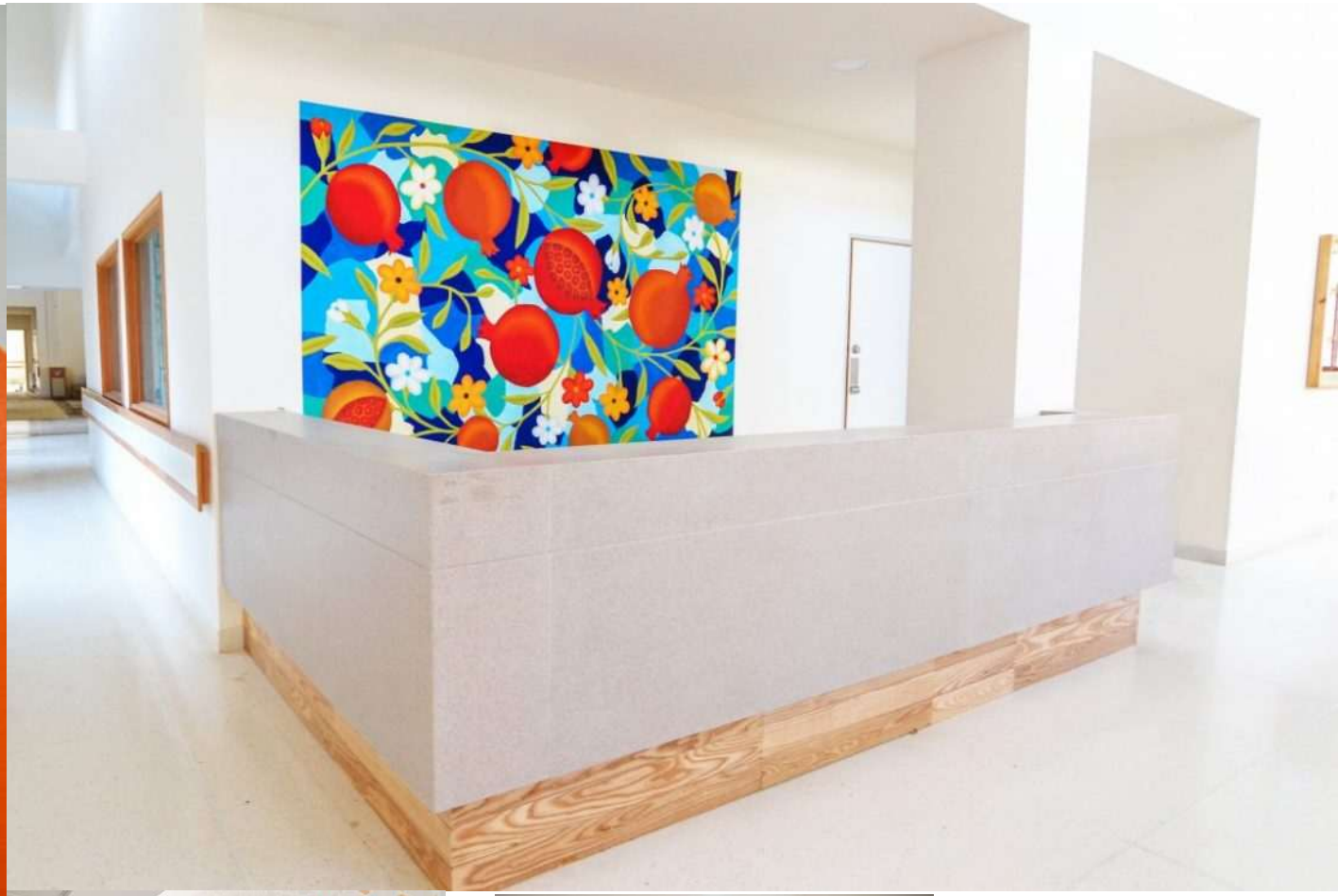
400 kW Solar Panel





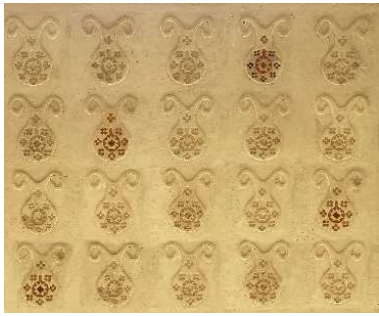
BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN











BAMYAN PROVINCIAL HOSPITAL, AFGHANISTAN

Ng Teng Fong General Hospital & Jurong Community Hospital（2009-2015）



General Hospital：700 beds

Community Hospital：400 beds

Awards: European Heath Design Award 2016, BCA Green Mark Platinum Award 2013, Design & Health International Academy Design Awards 2017



CPG in association with HOK and Studio 505


93%
Acceptable
90%
Comfortable
90%
Breezy
97%
Neutral
80%
Just Right
90%
Agree
90%
Agree
Average indoor temperature 29.2°C
Average Relative humidity 63.7%
Optimum Air flow
Thermal Comfort Satisfaction
Optimal Daylighting
Enhanced Patient Recovery
Enhanced staff Productivity
Every Patient has a Window



Shenzhen Eighth Sun Yat-sen University Hospital



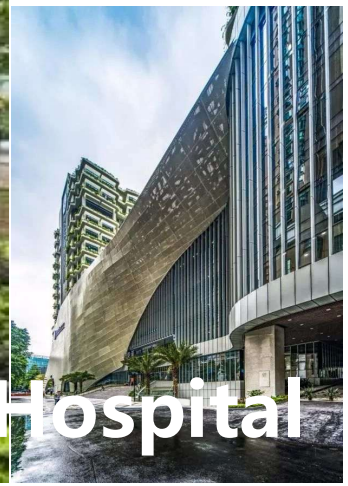




Shenzhen Eighth Sun Yat-sen University Hospital







Shenzhen Eighth Sun Yat-sen University Hospital



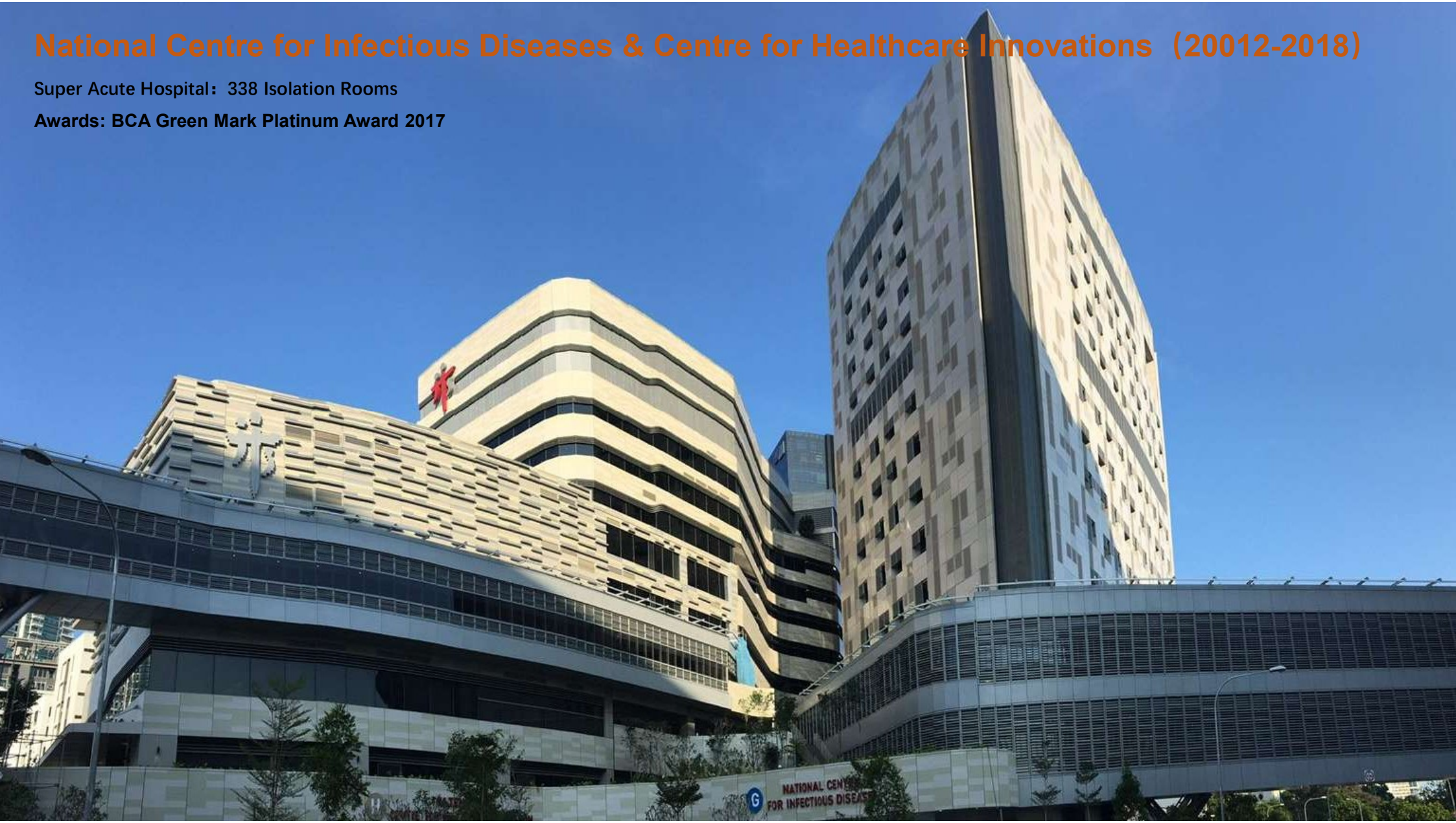


Shenzhen Eighth Sun Yat-sen University Hospital

National Centre for Infectious Diseases & Centre for Healthcare Innovations（20012-2018）

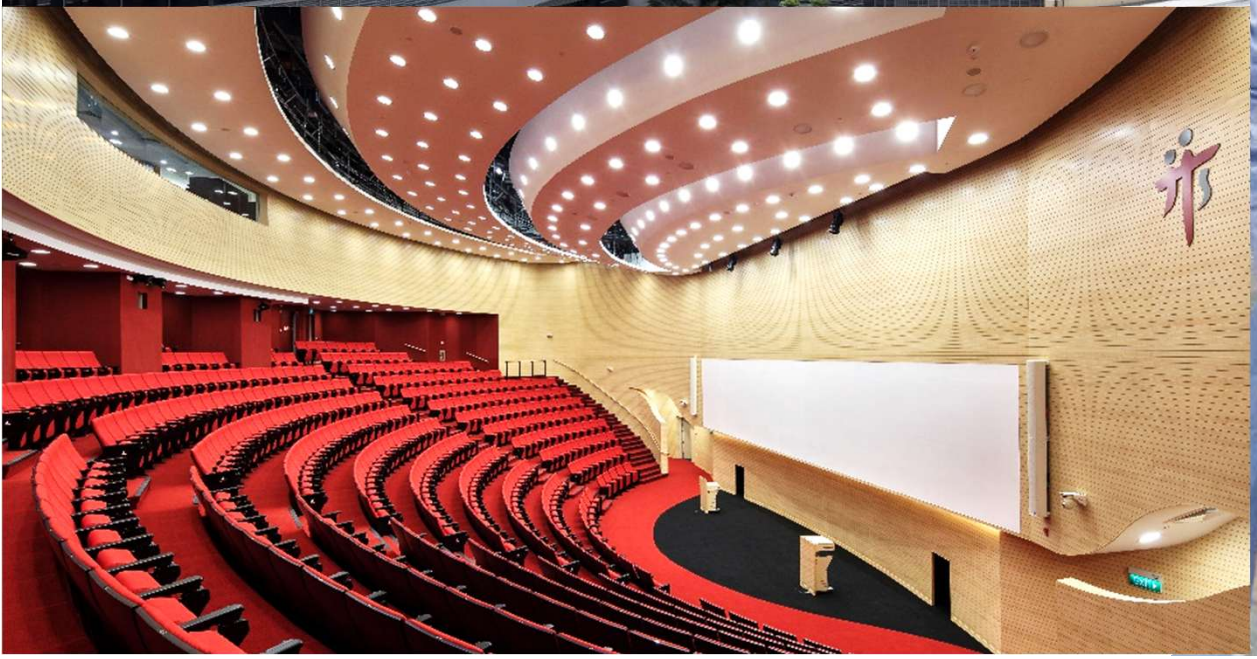
Super Acute Hospital：338 Isolation Rooms

Awards: BCA Green Mark Platinum Award 2017



National Centre for Infectious Diseases







National Centre for Infectious Diseases



National Centre for Infectious Diseases




National Centre for Infectious Diseases



Guangzhou National Respiratory Centre



Guangzhou National Respiratory Centre

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Design Philosophy

Biophilia & Salutogenesis

Contextually Appropriate

Community Connected

Scalability & Modularity

Resilient Planning

What is Health ?



A state of complete **physical, mental, and social well-being**, and not merely the absence of disease or infirmity



World Health Organization

What are the factors affecting Health?



Genes / Family Health History



Age



Behavior & Lifestyle



Quality of Environment



Accessibility & Quality of Healthcare

Factors Influenced by the Physical Environment

Health & the Physical Environment



Behavior & Lifestyle



Quality of Environment



Accessibility & Quality of Healthcare

Promotion — Prevention — Cure

Healthy Places by Design — Healthcare Provision

Spectrum of Health & Wellness Development

Health & the Physical Environment







Healthy Places by Design ← → **Healthcare Provision**

Salutogenic (Bio-Psycho-Social)	Pathogenic (Bio-Medical)
Multi-dimensional view of health	Rigid adherence to the biomedical model
Chronic illness management	Attention solely to acute episodic
Focus on communities and other defined populations	Focus on individuals
Adjustment and adaptation to disease for which there may be no cure	Cure as uncompromised goal
Focus on the diseased person and the disease	Focus on disease

Romano Del Nord

Spectrum of Health & Wellness Development

Health & the Physical Environment







Salutogenic **Pathogenic**



Khoo Teck Puat Hospital (2010)



Ng Teng Feng General Hospital & Jurong Community Hospital (2015)



National Centre for Infectious Diseases (2018)

Spectrum of Health & Wellness Development

Health & the Physical Environment







Healthy Places by Design

Healthcare Provision

Healthy Buildings



Healthy Landscapes



Healthy Cities



Spectrum of Health & Wellness Development

Healthy Places by Design



Behavior & Lifestyle



Quality of Environment

Healthy Buildings



Healthy Landscapes



Healthy Cities

Planned and designed to make healthy choices the preferred and easy choice

Promote healthy behaviors & lifestyles

Improve environmental quality for good health and well-being

Healthy Places by Design









Promote Physical Activity

Promote Healthy Diet

Promote Social & Community Connections

Promote Safety & Lower Risk to Injury

Improve Access to Nature (Biophilia)

Improve Environmental Quality

Khoo Teck Puat Hospital
Singapore



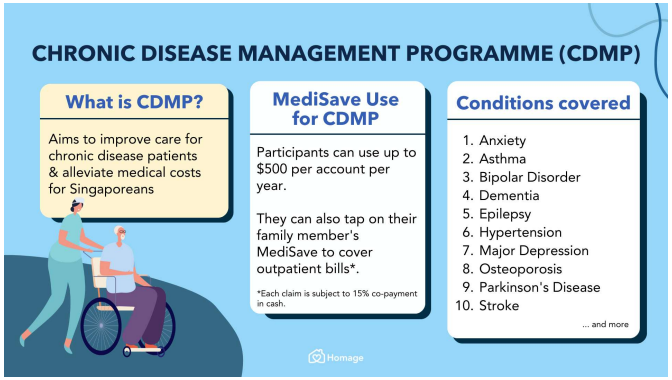




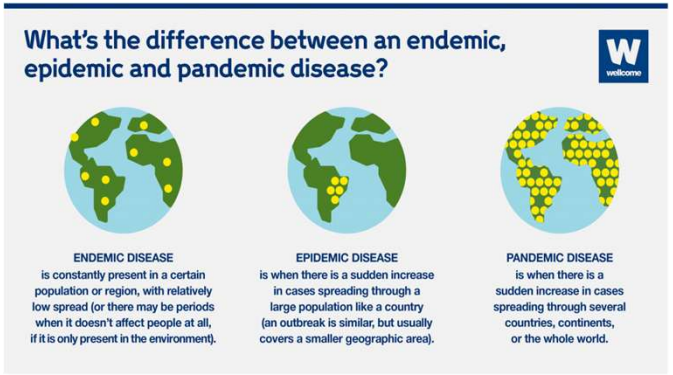
Singapore’s Health Challenges



Rapidly ageing population



Increased prevalence of chronic and mental diseases



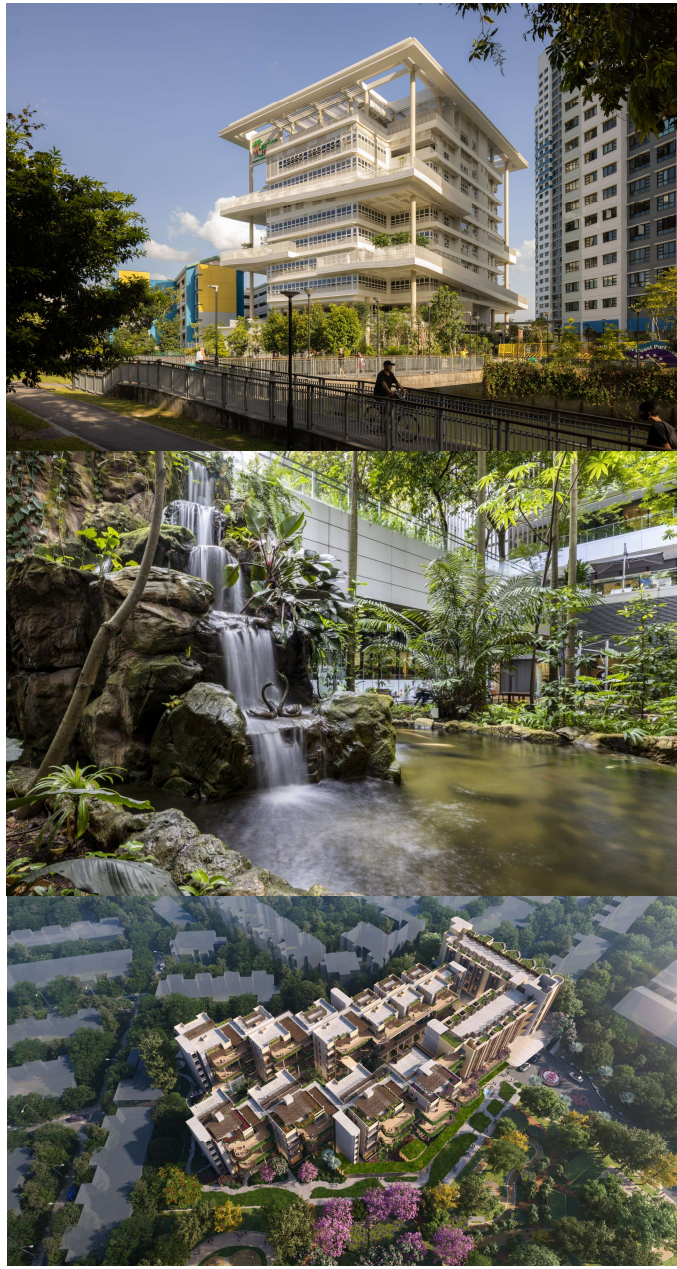
New challenges in pandemic and endemic state with emerging novel infectious diseases



Balancing between intensification and liveability

Health Planning and Design

- **Develop urban planning interventions to integrate social activities and care services**
- **Intentional programming to promote healthy lifestyles, facilitate formation of social networks**
- **Apply social sciences to understand how urban design and biophilia can bring therapeutic benefits and promote healthy lifestyles**
- **Building and urban design to reduce transmission risk, better prepare for future pandemics**









West Coast Link Nursing Home









Community Activities





Community Activities







West Coast Link Nursing Home









West Coast Link Nursing Home







Activity Terraces











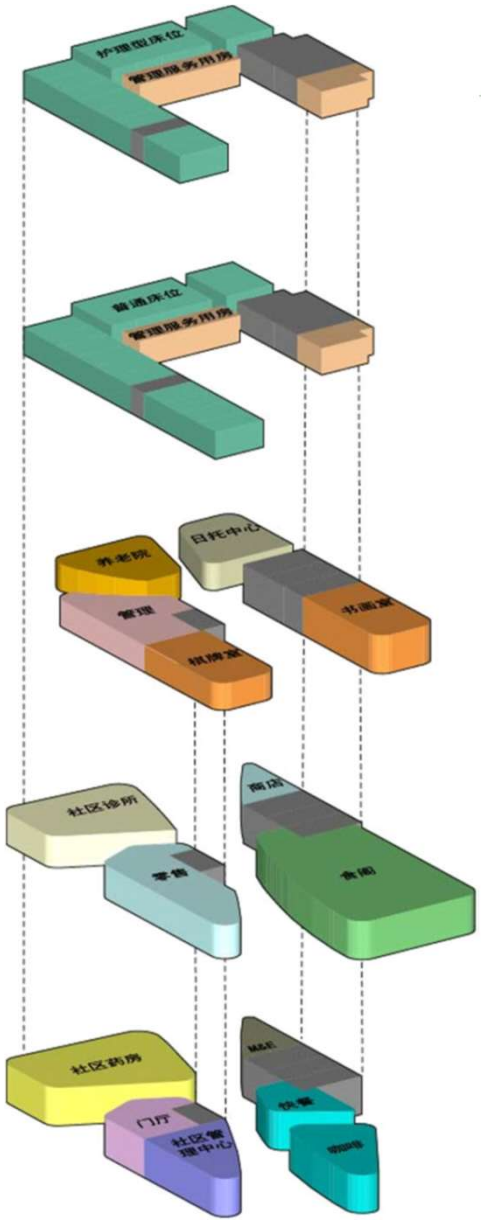
Activity Terraces



West Coast Link Nursing Home

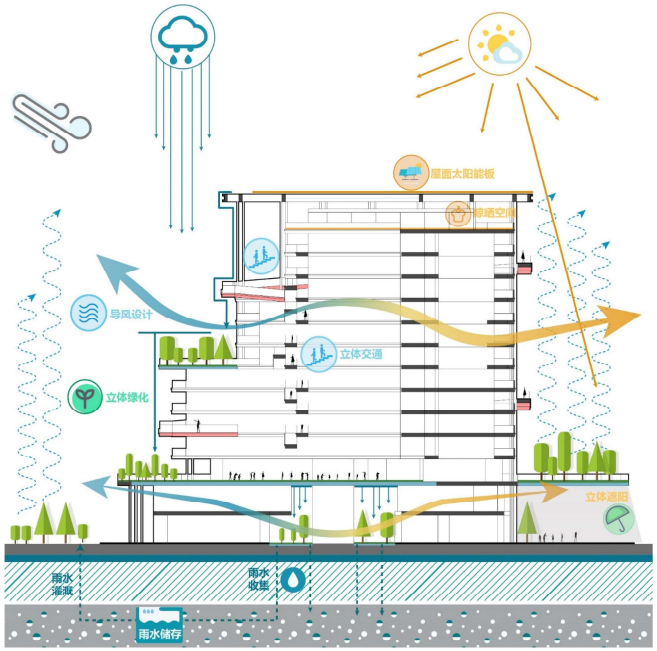

Shenzhen Longgang Nursing Home


Shenzhen Longgang Nursing Home



低碳生态
Low Carbon Strategy

- 屋面太阳能板：提供清洁能源
- 立面遮阳：阳台、外廊遮阳，减少太阳辐射热，降低室内温度
- 导风设计：导风板、中庭拔风，减少空调的使用，增加体感舒适度
- 立体绿化：平台绿化、立面绿化。调节微气候
- 立体交通：便捷的交通减少电梯使用频率
- 晾晒场地：利用太阳能，健康卫生。减少烘干机的使用
- 雨水收集：屋顶花园、院内庭院收集雨水灌溉植物，循环利用，节能减排






Assisted Living @ Parry


Assisted Living @ Parry


Assisted Living @ Parry


Assisted Living @ Parry


Assisted Living @ Parry


Assisted Living @ Parry


Assisted Living @ Parry

Kunming South HSR Health City



Kunming South HSR Health City

连续护理
Care Continuum

保健诊所
综合医院
Primary and Acute
Tertiary Care

急症
Fast

康复医院
Step-Down
Care & Rehab

康复
Cruise

康养，养老院，
乐龄公寓
Assisted Living and
Nursing Home
Aging in Place

慢性
Slow



Kunming South HSR Health City



学生与老年人互相学习和工作





云南示范大学3万名学生

Kunming South HSR Health City



Kunming South HSR Health City











Health Planning and Design

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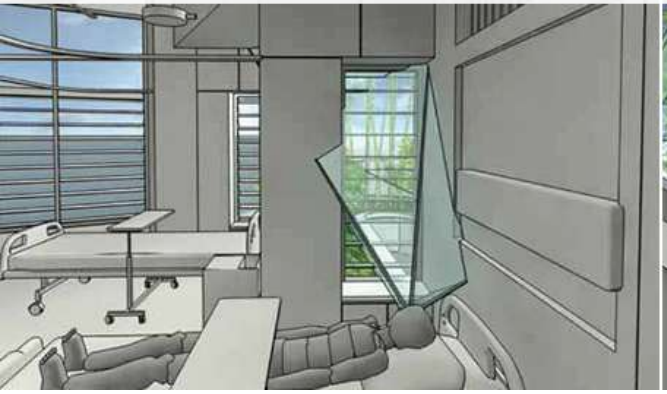
CPG's Patient Centric Design

Patient lying in bed next to window



Patient's field of view when lying down



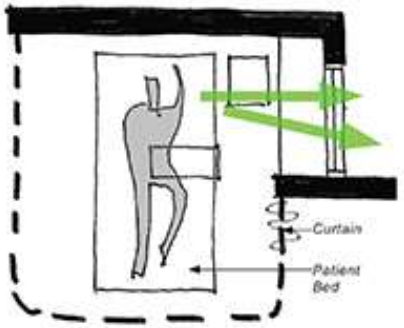


Conventional bed space



Typical size of patient cubicle in conventional ward layout without a window/view

Bed space for NTFGH and JCH



Artist impression of NTFGH/JCH bed space with a window/view

Primary Shading
Light shelves above the windows of the ward and projections of slabs beyond the edges for shading

Secondary Shading
Horizontal louvres protect against the low-angle morning and evening sun

Tertiary Shading
Plants and greenery provide additional shading against both high altitude and low angle sun




93%
Acceptable
90%
Comfortable
90%
Breezy
97%
Neutral
80%
Just Right
90%
Agree
90%
Agree
Average indoor temperature 29.2°C
Average Relative humidity 63.7%
Optimum Air flow
Thermal Comfort Satisfaction
Optimal Daylighting
Enhanced Patient Recovery
Enhanced staff Productivity
Every Patient has a Window

“Health is Made at Home, Hospitals are for Repairs”

Lord Nigel Crisp



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CPG Consultants Pte Ltd
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