



Asia Clean Energy Summit 2021

Singapore Case: Building Energy Efficiency

(Developing a national energy efficiency program)



Singapore Green Plan 2030

- City in Nature
- Energy Reset
- Sustainable Living
- Green Economy
- Resilience Future

SG GREEN PLAN

The Singapore Green Plan 2030 is a national sustainability movement which seeks to rally bold and collective action to tackle climate change.

It is a living plan which will evolve as we work with Singaporeans and partners from all sectors to co-create solutions for sustainability. Let's work together to make Singapore a green and liveable home.

City in Nature

Green, Liveable and Sustainable Home for Singaporeans

- Plant 1 million more trees, and have every household within a 10-minute walk from a park by 2030
- Develop over 130 ha of new parks, and enhance around 170 ha of existing parks with more lush vegetation and natural landscapes by end-2026
- Add 1000ha of green spaces by 2035

Sustainable Living

Strengthen Green Efforts in Schools

- Introduce an Eco Stewardship Programme to enhance environmental education in all schools
- Work towards two-thirds reduction of net carbon emissions from schools sector by 2030
- At least 20% of schools to be carbon neutral by 2030

Green Commutes

- 75% of trips during peak periods to be on mass public transport by 2030
- Triple cycling path network to 1,320km by 2030, from 460km in 2020
- Expand rail network to 360km by early 2030s, from around 230km today

Green Citizenry:

Reduce waste and consumption

- Reduce amount of waste to landfill per capita per day by 20% by 2026, and 30% by 2030
- Reduce household water consumption to 130 litres per capita per day

Energy Reset

Cleaner-energy Vehicles

- New diesel car and taxi registrations to cease from 2025, with all new car and taxi registrations to be of cleaner-energy models from 2030
- Further revise road tax structure to bring down road tax for mass-market electric cars
- Target 60,000 electric vehicle (EV) charging points by 2030, with 8 EV-Ready Towns by 2025

Greener Infrastructure & Buildings

- Green 80% of Singapore's buildings (by Gross Floor Area) by 2030
- 80% of new buildings (by Gross Floor Area) to be Super Low Energy buildings from 2030
- Best-in-class green buildings to see 80% improvement in energy efficiency (over 2005 levels) by 2030

Sustainable Towns & Districts

- Reduce energy consumption in HDB towns by 15% by 2030

Green Energy

- Quadruple solar energy deployment to 1.5 gigawatt-peak by 2025
- Tap on cleaner electricity imports, and increase R&D on renewable energy and emerging low-carbon technologies

Green Economy

Sustainability as New Engine of Jobs and Growth

- New Enterprise Sustainability Programme to help local enterprises adopt sustainability practices
- Develop Singapore to be a carbon services hub, and a leading centre for green finance in Asia and globally
- Develop Jurong Island to be a sustainable energy and chemicals park
- Leverage opportunities in sustainable industries to create good jobs for Singaporeans

New Investments to be Carbon and Energy Efficient

- Seek new investments to be among the best-in-class in energy/carbon efficiency

Resilient Future

Safeguarding our Coastlines against Rising Sea Levels

- S\$5b dedicated to coastal and drainage flood protection measures
- Formulation of coastal protection plans for City-East Coast, North-West Coast (Lim Chu Kang and Sungei Kadut) and Jurong Island by 2030

Safeguarding Food Security

- Produce 30% of our nutritional needs locally and sustainably by 2030, through developing land and sea space and skilled workers, funding support, and promoting R&D

Keeping Singapore Cool

- Moderate the rise in urban heat, such as with cool paint and by increasing greenery

Jointly led by:

Singapore Green Plan 2030 Infographics from <https://www.greenplan.gov.sg> www.GreenPlan.gov.sg

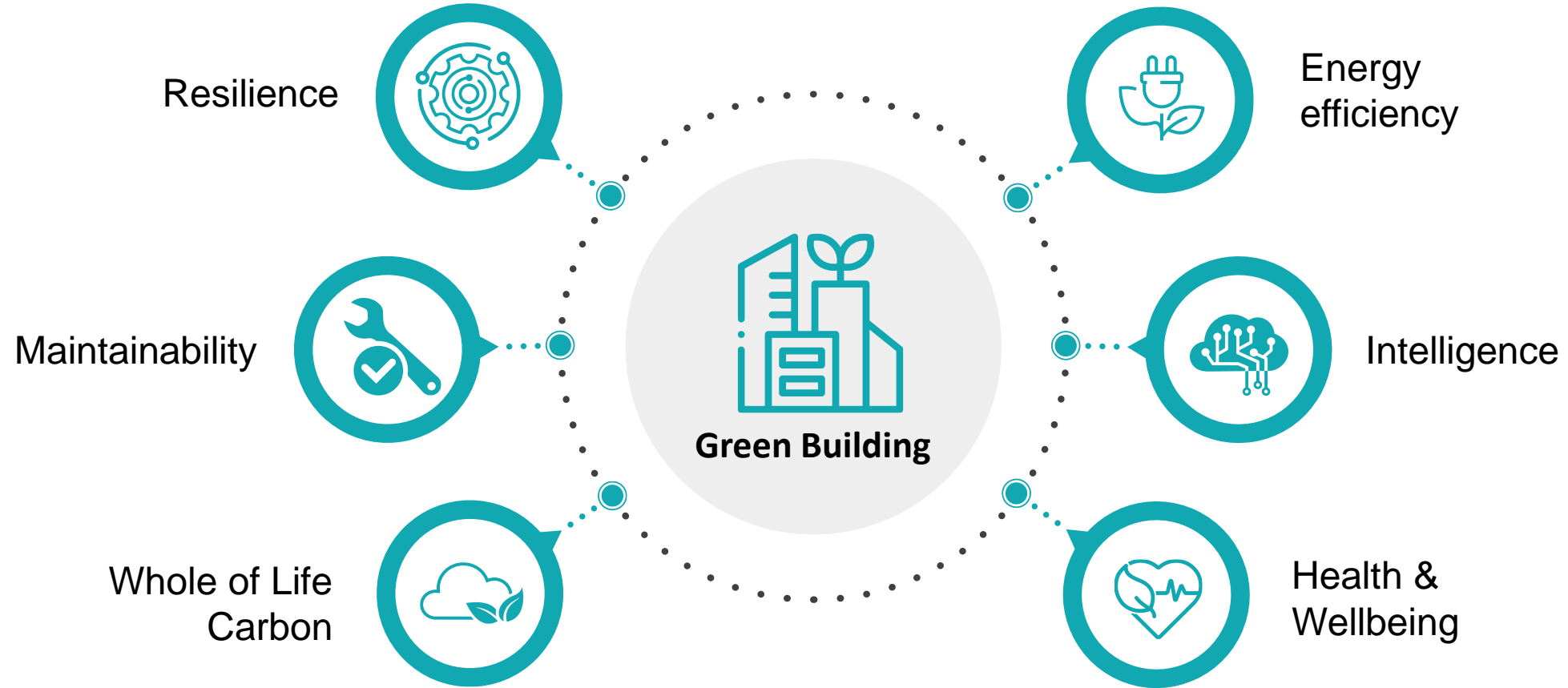
Singapore Green Building Masterplan

- Green 80% of Singapore's building by 2030
- 80% of new developments to be SLE buildings from 2030
- 80% improvement in energy efficiency for best-in class green buildings by 2030



80-80-80 by 2030 Infographic
Source: BCA website

Components of Green Building



Typical Office Building Energy Usages

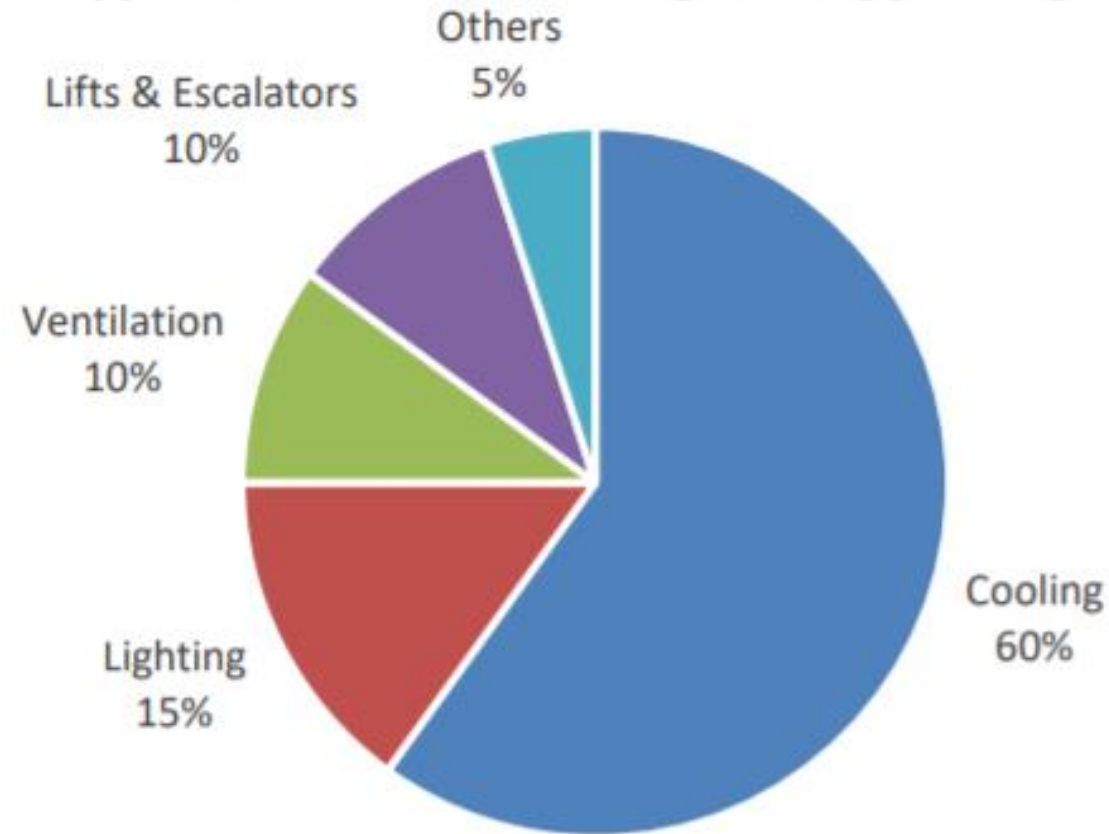


Figure 3: Typical Office Building Energy Usages

Source: BCA's Super Low Energy Building Technology Roadmap

Green Mark Certified Buildings in Singapore

43% of buildings in Singapore (by gross floor area) are Green Mark certified

Platinum Positive Energy	2
Platinum Zero Energy	16
Platinum Super Low Energy	28
Gold Positive Energy	1
Gold ^{PLUS} Zero Energy	1
Gold ^{PLUS} Super Low Energy	2
Platinum	939
Gold ^{PLUS}	742
Gold	1192
Certified	499

Singapore Green Mark 2021

GM: 2021 RATINGS

	Energy Savings				Intelligence	Health & Well-being	Whole Life Carbon	Maintainability	Resilience
	>50%	≥55%	≥60%	ZE	<ul style="list-style-type: none"> 15 points for each sustainability section ≥10 points in a section to qualify for a badge for exemplary performance 				
A. Full GM: 2021 certification									
SLE (incl. ZE, PE)			✓	✓					N/A
Platinum SLE (incl. ZE, PE)			✓	✓					40 points
Gold ^{PLUS} SLE (incl. ZE, PE)			✓	✓					30 points
Platinum		✓							40 points
Gold ^{PLUS}	✓								30 points

Green Mark (GM2021) Platinum rating criteria,

- (1) Energy Efficiency – min 55% energy savings based on code of 2005, or 35% energy savings based on prevailing code
- (2) Sustainability sections – total **40 points** from 5 sections

For Super Low Energy, SLE buildings, min 60% energy savings based on code of 2005, or 40% energy savings based on prevailing code.

Source: Building Construction Authority

Green Mark Professionals

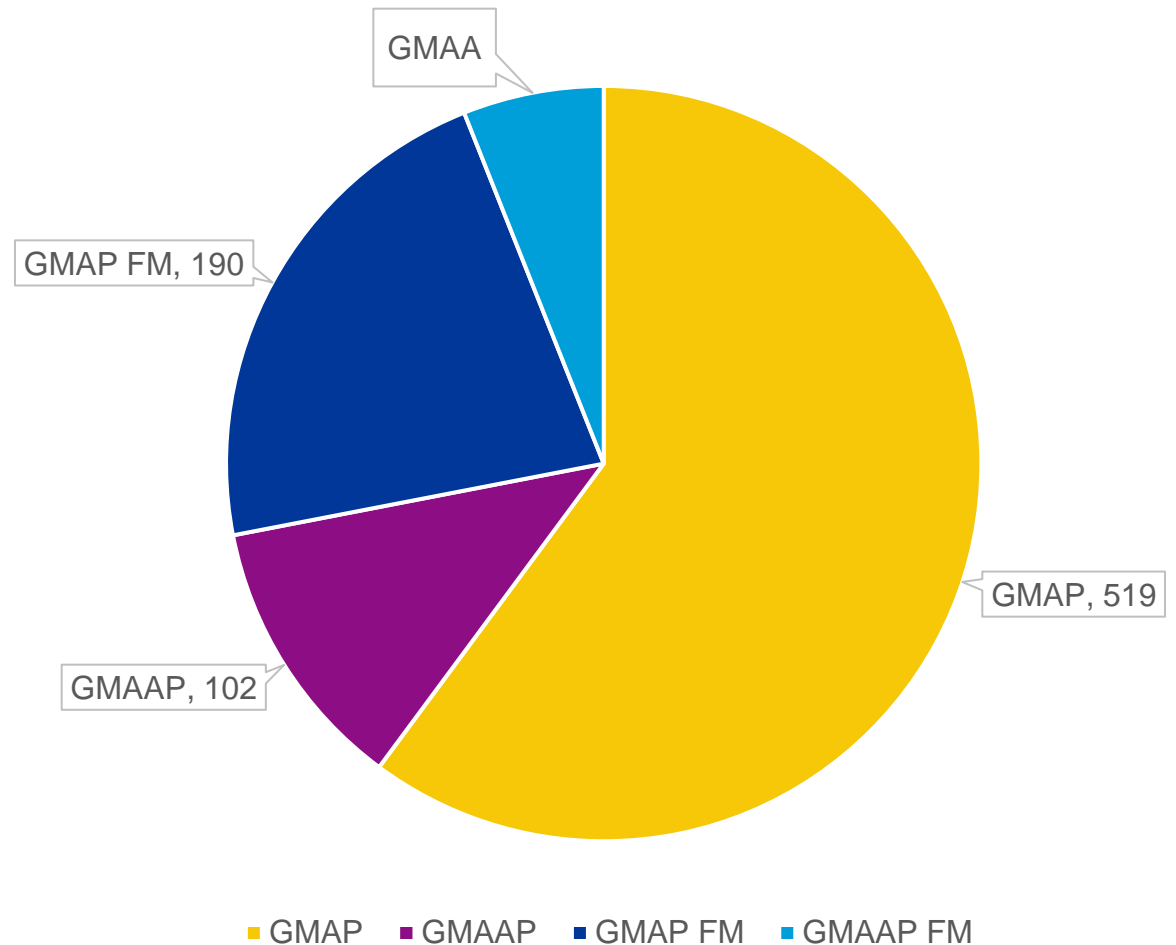
863 GMAPs

GMAP – Green Mark Accredited Professional

GMAAP – Green Mark Advanced Accredited Professional

GMAP FM – Green Mark Accredited Professional (Facilities Management)

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Energy Performance Contracting – Zero Capital Partnership Scheme (ZCPS)



Assist smaller building owners to implement energy efficient retrofit projects



Working with EPC firm to achieve greater energy efficiency with zero capital outlay

To find out more, visit SGBC website >>

<https://www.sgbc.sg/sgbc-certifications/zero-capital-partnership/zero-capital-partnership>



Thank You

