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BCA Green Mark v7.0 Industry Engagement

10 April 2026

Presented by: Senior Manager/ Firdaus Laza
on behalf of Green Mark v7.0 Secretariat
PM / Tracy Liu | EM / Song Ching



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https://go.gov.sg/gmv7

Agenda

1. Opening Remarks by Mr Ang Kian Seng
2. Introduction of GM v7.0
3. Technical Section Sharing
    1. Energy Efficiency
    2. Intelligence
    3. Maintainability
    4. Resilience
    5. Health & Wellbeing
    6. Carbon
    7. Process
4. Interactive Q&A with F&B
5. End

Opening Remark by
Group Director for Environment Sustainability
Mr Ang Kian Seng

BCA Green Mark v7.0

Industry Consultations

Engaged more than 100 stakeholders across the value chain...

Stage 1: Focus Group Industry Consultation
Developers, ESD, FIs, M&E, FM, Architects, C&S, Academia, etc.

Stage 2: Targeted Sessions
Close to 20 firms consisting of GPEs, Developers, FI and TACs

Stage 3: Technical working groups by focus area
Such as Open BMS and CCTV Agile Committee

And more....

Timeline and Evolution of Green Mark

GM Launch

Green Mark Scheme launched with 17 projects certified

2005

GM v 2.0

Version 2
Introduction of Energy Modelling & pre-requisites for EE

2007

GM v 3.0

Version 3
Inclusion of CFD simulation
GM lowest standard became regulation in 2009 for new building

2008

GM v 4.0

Version 4
Introduction of pre-requisites outside of EE

2010

GM: 2015

Green Mark 2015
for New Buildings (Non-Residential) - Re-imagining the tropical green building rating tool.

Removed Certified level to distinguish from regulations.

2015

GM: 2021

Green Mark 2021
Raise standards in energy performance, place greater emphasis on sustainability outcomes which align with the UN Sustainable Development Goals

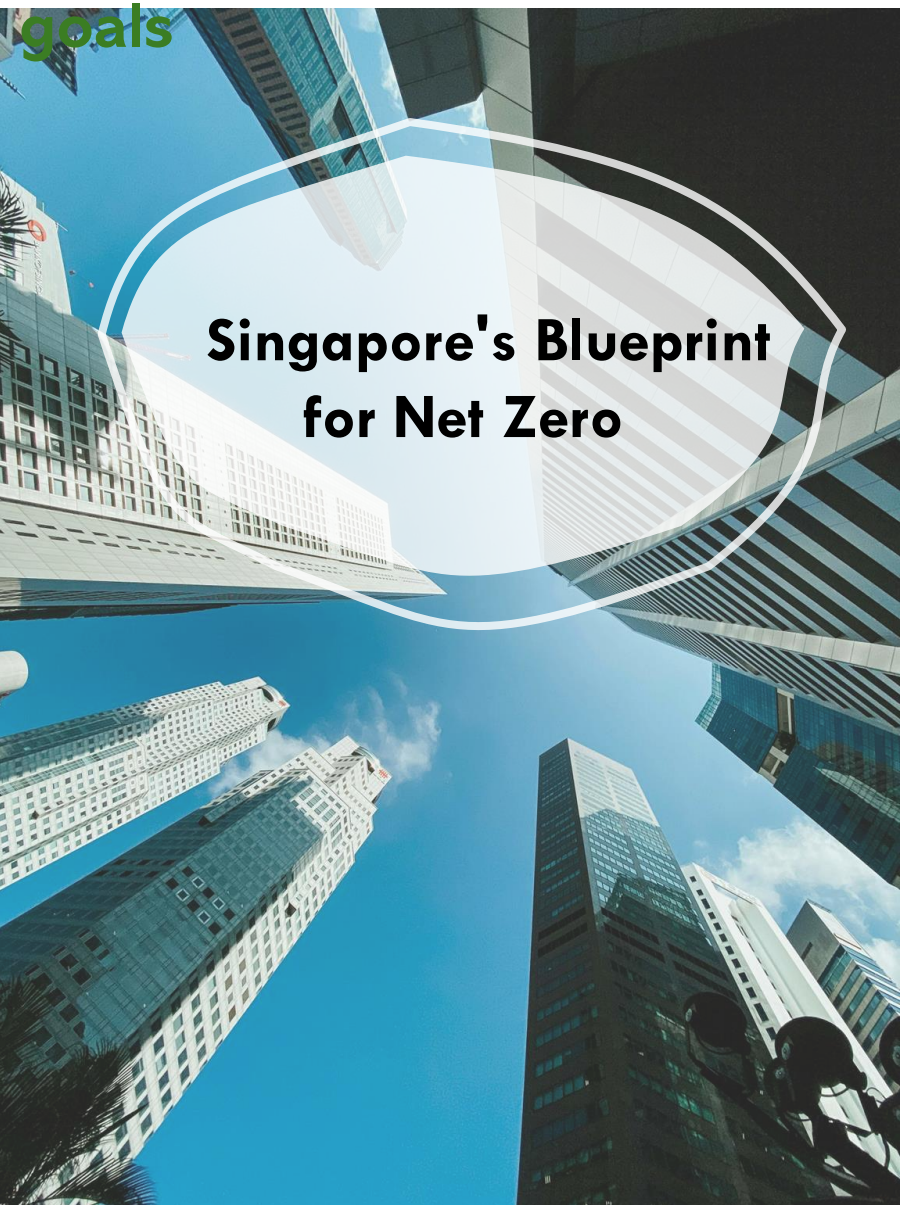
EE section a pre-requisite. Introduction of Badges across sustainability sections

2021

Green Mark v7.0

Green Mark's Impact

Key driver of national sustainability goals



2050 — Achieve Net Zero Emissions

2035 — Reduce Emissions to between 45 and 50 $MtCO_2e$

Nationally Determined Contributions (NDCs)

5 Pillars

2030 — SG GREEN PLAN: City in Nature, Energy Reset, Sustainable Living, Green Economy, Resilient Future

Singapore Green Building Masterplan (SGBMP)
"80-80-80 in 2030"

80%	80%	80%
of buildings (by GFA) to be green by 2030	of new developments (by GFA) to be SLE buildings from 2030	improvement in Energy Efficiency* for best-in-class buildings by 2030
~66 %	~33%	~72%

Green Mark's Impact

BCA Green Mark Certification Scheme

Local Commitment

>2900 Green Mark Buildings In Singapore to date

International Presence

>340 Green Mark Projects across **19 countries**

in parts of Asia, Africa and Middle East

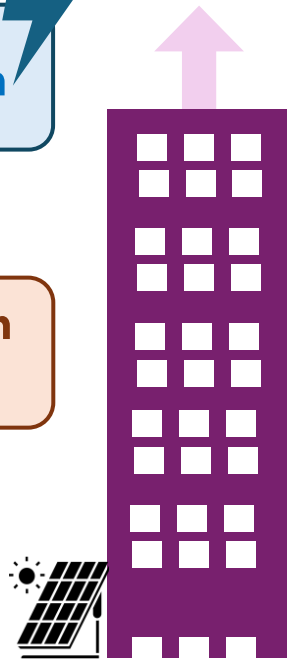
Annual Energy Savings amounting to:

S$1.3 billion

Annual carbon emissions offset of:

> 1.7 million tCO_2e

Over 200 GWh of renewable energy per year is generated from solar panels deployed on Green Mark certified buildings



Sustainability Sections

The scheme also incorporates key sustainability sections covering intelligence, health and well-being, whole-life carbon, maintainability and resilience for a holistic assessment of a building's impact on the environment.





Keppel Infrastructure – Changi
GM Platinum PE



NUS Frontier
GM Platinum ZE with Re badge



80 Anson Road – Non Residential
GM Platinum SLE



Copen Grand
GM Platinum SLE with WLC, HW & Mt badge

From Green Mark 2021 to Green Mark v7.0

The refresh of the Green Mark 2021 scheme to Green Mark v7.0 seeks to accelerate green building adoption across Singapore while ensuring continued alignment of Green Mark criteria with the UN Sustainable Development Goals (UN SDGs).

	EE	In	Hw	Cn	Mt	Re
	Energy Efficiency	Intelligence	Health & Wellbeing	Whole Life Carbon	Maintainability	Resilience
Related UN SDGs	13 CLIMATE ACTION 7 AFFORDABLE AND CLEAN ENERGY 11 SUSTAINABLE CITIES AND COMMUNITIES	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 8 DECENT WORK AND ECONOMIC GROWTH	3 GOOD HEALTH AND WELL-BEING 8 DECENT WORK AND ECONOMIC GROWTH 10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 13 CLIMATE ACTION	8 DECENT WORK AND ECONOMIC GROWTH 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	14 LIFE BELOW WATER 15 LIFE ON LAND 11 SUSTAINABLE CITIES AND COMMUNITIES 13 CLIMATE ACTION

BCA Green Mark v7.0 — Strategic Framework

BCA Green Mark → BCA Green Mark v 7.0

Key Objectives

Adopting a **Pro-Business Approach** across 3 strategic drivers:

1. Decarbonisation & Energy Transition

- Expanding green building coverage
- Advancing mainstream SLE adoption
- Progressing toward Net-Zero and SGBMP

2. Climate-Resilient & Healthy Buildings

- Strengthening resilience against climate change
- Optimising occupant wellbeing
- Fostering community connection

3. Industry-Responsive & Global Alignment

- Aligning with international standards
- Balancing effort with impact
- Streamlining process

Key Changes

- **New BCA Energy Rating** to open for greening building stocks
- **NewSLE_{70}** tier for frontrunners



- **Enable Alternative Cooling Technologies (ACTs)** as energy performance offsets
- **Maintainability section streamlining** by ~ 60% reduction



- **Extended 5-year validity** for buildings with sustained performance (vs current 3-year)
- Streamline criteria based on **impact vs effort analysis**
- **Portfolio certification** under single assessment



1a. Expanding Green Building Coverage + 1b. Mainstreaming Super Low Energy Buildings

Green Mark v7.0

Certification Type	BCA Energy Rating	BCA Green Mark (Holistic)
Requirement	Mandatory energy assessment for all buildings seeking energy performance recognition	Optional comprehensive certification for all buildings seeking holistic sustainability recognition across all green building aspects, in addition to energy performance.
Focus	Pure energy performance rating Receive Energy Rating 	Advanced sustainability assessment Receive Energy Rating + Holistic points scoring across 5 sustainability sections 
Rating Scale	EE_{45}, EE_{50}, EE_{55}, SLE_{60}, SLE_{70}, ZE, PE	Gold (EE_{45}, *only for existing buildings in operation*) GoldPLUS* (EE_{50} + 30 points) Platinum* (EE_{55} + 40 points) *Projects achieving an Energy Rating of SLE_{60} or higher with required points receive dual recognition (e.g. Platinum SLE_{60}, Platinum ZE)
Certificate Issuance	Receive 1 certificate: Energy Rating only	Receive 2 separate certificates: One certificate showing Energy Rating only (e.g. EE_{50}, SLE70, ZE) One certificate showing Holistic rating only (Platinum/GoldPLUS/Gold) **Building Owners can choose what they want to display** Examples: • GoldPLUS + SLE_{60} = Two certificates: GoldPLUS certificate + SLE_{60} certificate • Platinum + ZE = Two certificates: Platinum certificate + ZE certificate

Green Mark v7.0 Scoring Requirements

BCA Green Mark (Holistic)

Structure: Energy Savings + 5 scored sustainability sections

	Energy Savings				Intelligence	Health & Wellbeing	Whole Life Carbon	Maintainability	Resilience
	≥45%	≥50%	≥55%	≥60% (SLE)	• *15 points for each sustainability section* • *≥10 points in a section to qualify for a badge for exemplary performance* • *For In-Ops, option to be assessed to qualify specific badges to demonstrate exemplary performance in operation*				
Platinum			✓	✓	40 points				
GoldPLUS		✓			30 points				
Gold	✓				N/A				

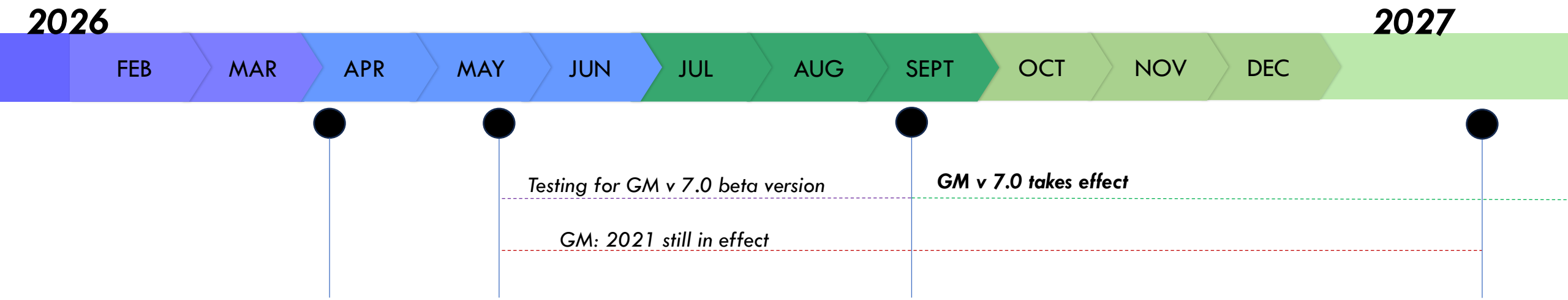
BCA Energy Rating

Structure: Energy Savings

	Energy Savings Only					
	≥45%	≥50%	≥55%	≥60%	≥70%	≥100%
EE_{45}	✓					
EE_{50}		✓				
EE_{55}			✓			
SLE_{60}				✓		
SLE_{70}					✓	
ZE				✓ + RECs if required	✓ + RECs if required	
PE						✓ (only from onsite RE)

From Green Mark 2021 to Green Mark v 7.0

Implementation Roadmap



Phase 1: Industry Preparation (10 Apr 2026)

- Wider industry outreach on refined criteria
- Point impact analysis completion and validation

Phase 2: Pilot (May 2026)

Beta testing for GM v 7.0

Phase 3: Green Mark v 7.0 Launch (IBEW 2026)

New Green Mark available for all projects

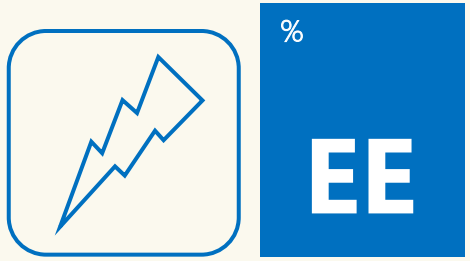
Q2 2027

BCA stops accepting application for GM: 2021

End 2027

Close all GM: 2021 projects

BCA Green Mark v7.0 Energy Efficiency



Presented by:
Principal Manager/ Thomas Pang

Outline of EE Changes

1. New Pre-requisite requirement in EE section (applicable to all ratings)
2. Changes in Pathway 1
3. Changes in Pathway 2
4. Changes in Pathway 3
5. Changes in Residential Building in Pathway 2

Energy Rating and Holistic certification series in parallel

Full certification starting point

Energy Ratings [New]	Holistic GM Ratings	
	Points from 5 Sustainable Sections	
	≥30	≥40
EE_{45} [only for In-Ops]	NA	
EE_{50}	$Gold^{PLUS}$	
EE_{55}	$Gold^{PLUS}$	Platinum
SLE_{60}	$Gold^{PLUS}$ SLE_{60}	Platinum SLE_{60}
SLE_{70}	$Gold^{PLUS}$ SLE_{70}	Platinum SLE_{70}
ZE	$Gold^{PLUS}$ ZE	Platinum ZE
PE	$Gold^{PLUS}$ PE	Platinum PE

- For the new SLE70, same treatment as SLE60, based on onsite energy efficiency measures or onsite RE (not sold as REC)
- To become ZE, minimally meet SLE60 before purchasing RECs to offset
- EE Series will allow projects freely upgrade including re-certification based on actual performance, e.g from EE50 to SLE70
- The detailed permutation table will be available in Certification Standard

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1.1 Solar Feasibility as Pre-requisite - for all buildings (applicable to all pathways)

- For any building with roof top area of the development > 800m^2, including ND, EB, RB and ERB

- As for the 'Feasibility study' report:
  - by consultants or Solar experts
  - Acknowledged by the building owners/developers

  Note: if the building has called tender for PV installation, or PV panels have been installed, it is considered as meeting this pre-requisite

1.2 Requirement of EUI on MEI (applicable to pathway 2 and 3)

- Add EUI threshold based on Mandatory Energy Improvement (MEI)
- Refer to EUI threshold in "*Code on Mandatory Energy Improvement*"

Changes in Pathway 1

1. Add Lab EUI baseline
2. Revise Hospital EUI baseline
3. Introduce EUI for SLE_{70}
4. Remove EUI table for buildings taking DCS supply

EUI requirement for SLE_{70}

Pathway 1

Building Type	EE_{45} (Gold for In ops only)	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
	Commercial				
Office Buildings (Large) (GFA≥15,000m2)	171	155	140	115	80
Office Buildings (Small) (GFA≤15,000m2)	149	135	120	100	75
Hotels (Large) (GFA≥15,000m2)	253	230	220	180	135
Hotels (Small) (GFA≤15,000m2)	204	185	170	130	100
Retail Malls	264	240	210	160	127
	Educational				
IHL (University, Polytechnics and ITE)	143	130	120	90	70
Private Schools and Colleges	121	110	100	80	65
Junior Colleges (MOE)	66	60	50	40	30
Secondary Schools (MOE)	44	40	35	30	18
Primary Schools (MOE)	44	40	35	30	18
	Healthcare				
Hospitals& Specialist Centres	330	300	270	240	180
Community Hospitals	253	230	210	185	140
Polyclinic & Private Clinics	165	150	135	120	90

Add Fixed Metrics for SLE_{70}

Pathway 2

OFFICE				
PARAMETER	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
Reduced Heat Gain (ETTV) [New Development only]	40	38	38	35
Non-AC Areas	-	10%	25%	25%
ACMV TSE , or	0.8	0.74	0.68	
Unitary (total installed capacity <500 RT)	3 Ticks	4 Ticks	5 Ticks	
Max Receptacle load (W/m2)	n.a.			
Lighting Power Budget	Table 2A			
Mechanical Ventilation	Table 2B			

Add Fixed Metrics for SLE_{70}

Pathway 2

OFFICE				
PARAMETER	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
ACMV TSE (with chilled water plant)	0.8	0.74	0.68	0.6
Airside efficiency (For buildings with licensed DCS supply)	0.2	0.18	0.16	0.14
Unitary (total installed capacity <500 RT)	3 Ticks	4 Ticks	5 Ticks	5 Ticks + 25% ac area with ACT

Chilled Water System

Unitary System

Type of Alternative Cooling Technologies (ACT):

- Hybrid Cooling
- Passive Displacement Cooling
- Active Chilled Beam
- Radiant Cooling
- Mixed Mode Ventilation

Open for projects to explore other ACTs, provided projects can show studies or on-site evidence of their energy savings.

Add Fixed Metrics for SLE_{70}

Pathway 2

OFFICE				
PARAMETER	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
Max Receptacle load (W/m2)	n.a.			10
Lighting Power Budget	Table 2A			
Mechanical Ventilation	0.32	0.28	0.25	0.25

Table 2A: Lighting Power Budget (LPB) requirement

Description	Pathway 2 - LPB Targets (W/m2)			
	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
Office, Work and Study				
Offices	6	5.5	5	4
Meeting Room	6	5.5	5	4
Copy/Print Rooms	6	5.5	5	4
Classrooms	6	5.5	5	4
Lecture Theatre	6	5.5	5	4
Computer Rooms	6	5.5	5	4
Reading Areas	6	5.5	5	4
Laboratories	8	7	6	5
Atria, Halls and Retail				
Entrance Hall	6	5	4	3.5
Atriums	6	5	4	3.5
Retail Atriums	6	5	4	3.5

Add Fixed Metrics for SLE_{70}

Pathway 2

OFFICE				
PARAMETER	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
Integrated Energy Management & Control Systems		Lighting controls shall be provided in accordance with SS 530: 2014 Code of Practice for Energy Efficiency Standard for Building Services and Equipment.	*[SLE_{70} to adopt the current SLE_{60} requirement]*	

Add Fixed Metrics for SLE_{70}

Pathway 2

OFFICE				
PARAMETER	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
On-Site Renewables – (to make up the (shortfall of any other parameters)	1.0			
ACT - to make up the (shortfall of any other parameters)	Based on average 25% ac saving of ACT			

To use ACT to makeup the short fall of non-ac area:

$$Required\ ACT\ area = 4 \times \Delta non\ ac\ area$$

To use ACT to makeup the short fall of ETTV:

$$Required\ ACT\ area = 0.02 \times Total\ aircon\ area\ \times \Delta ETTV$$

To use ACT to makeup the short fall of LPB:

$$ACT\ area\ = \frac{(\Delta LPB)(Total\ GFA)(Operating\ hr\ of\ lighting\ system)(Total\ AC\ area)}{(250)(TSE)(Original\ Cooling\ load)(operating\ hr\ of\ ac\ system)}$$

To use ACT to makeup the short fall of MV eff:

$$ACT\ area\ = \frac{(\Delta MV\ eff)(Total\ air\ flow)(Operating\ hr\ of\ MV\ system)(Total\ AC\ area)}{(250)(TSE)(Original\ Cooling\ load)(operating\ hr\ of\ ac\ system)}$$

Pathway 3 : Add energy saving requirement for SLE_{70}

	Pathway 3 – Energy Savings			
	EE_{50}	EE_{55}	SLE_{60}	SLE_{70}
Saving from BAU (2005 Code)	50	55	60	70
Saving from Current Reference ***Including buildings supplied by DCS/DDC/CCS**	30	35	40	55

*Based on Energy Modelling framework guidelines

Remain unchanged from GM: 2021

Additional Requirements	New	Existing
AC TSE	0.8	0.9
Airside efficiency (for buildings with licensed DCS supply)	0.18	0.2
Savings from Renewable Energy	no cap	
Savings from Passive Design	no cap	

Residential Buildings : Add Fixed Metrics for SLE_{70}

Pathway 2

PARAMETER	SLE_{60}	SLE_{70}
Reduced Heat Gain (RETV) [New Development Only]	20	18
Ventilation Performance via option 1 (Plan level) or option 2 (Simulation) [New Development Only]	60%	70%
ACMV	*[SLE_{70} to adopt the current SLE_{60} requirement]*	
Energy Efficienct Equipment Selection (Household)		
Ventilation Performance - Common areas		
Vertical Transport		

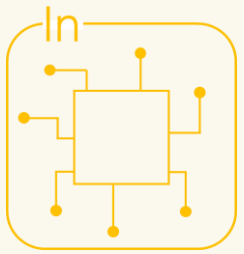
Residential Buildings : Add Fixed Metrics for SLE_{70}

Pathway 2

PARAMETER	SLE_{60}	SLE_{70}
Lighting Power Budget (% saving)	Table 2A	
Mechanical Ventilation % savings	*[SLE_{70} to adopt the current SLE_{60} requirement]*	
Demand Control		
Adoption of Renewable Energy		
Onsite renewable replacement to make up any deficiencies from the above list, with safety factor	1.0	
Alternative Cooling Technology (ACT)		ACT must be in place for the Club House, function room, gym, MCST office and Guard House where applicable (Coverage: at least 80%)

BCA Green Mark v7.0 Intelligence

Presented by:
Principal Manager/ Jusuf Anggono





Overview of Intelligence Section (NRB)

This section focuses on how buildings can harness **smart technologies, open systems, and data-driven processes** to become more **integrated, automated, responsive, and user-centric**

Integrated – 2 points

- **5-Step SMART Process**
  (prerequisite for IN badge)
- Moved from Mt Section
  ~~ture alteration or replacement,~~ Digital Testing and Commissioning, Digital FM Handover
- ~~Good Practices to Facilitate Data Management~~

Data Driven - 5 points

- ~~Asset Information Model (AIM)~~
- Good Practices to Facilitate Data Management
  Performance Dashboard, Open BMS & Open CCTV, Asset Ontology, Integration between Robot, Lifts & Automated Doorways, Robot Fleet Management

Added critical items to future-proof building.

~~Be responsive to issues such as trust, use of data, tracking, and infringement on privacy~~.

- Voluntary Disclosure of Building Operational and Energy Performance Data

Responsive – 8 points

- Energy Efficiency
  Adaptive ACMV Control system for Chiller Plant and Air Distribution System
- **Predictive Maintenance**
  RM&D for Lift, ACMV, & Electrical systems, Smart Fire Extinguishers & Exit Light

Moved from Mt Section

- Deco
  Tenar use Gas (GHG) Emissions Monitoring
- Health & Wellbeing
  Continuous IAQ Surveillance, User Feedback Platform, Community Experience App

Innovation

GM v7.0: Intelligence Section (NRB)

N: New development
E: Existing building

IN1 - Integrated		Score N	Score E
5-Step SMART Process		1	2
Digital Lifecycle:			
	Digital testing & commissioning	1	1
	Digital FM handover	1	-
Max. Score		**2**	

IN2 - Data-driven		Score N	Score E
Good Practices to Facilitate Data Management:			
	Performance dashboard	½	½
	Open BMS	1	1
	Open CCTV	½	½
	Adoption of open metadata schema	1	1
	Integration between Robot, Lifts and automated doorways	1	1 ½
	Robot fleet management	1	2
Data Privacy and Security			
	Data Privacy	½	½
	Data Security	½	½
Disclosure of Building Data			
	Share Operational and Energy Performance Data	½	½
Max. Score		**5**	

IN3 - Responsive		Score N	Score E
Energy Efficiency:			
	Adaptive ACMV control - Water-side opt	1	1
	Adaptive ACMV control - Air-side opt	1	1
Predictive Maintenance:			
	RM&D for Lift	1	1
	RM&D for ACMV	1	1
	RM&D for Electrical System	½	½
	Smart Fire Extinguishers and Exit Light	½	½
Decarbonisation:			
	Tenant Smart Energy Monitoring	1	1
	GHG Emissions Monitoring	½	½
Health & Wellbeing:			
	Continuous IAQ Surveillance	1	1
	User Feedback Platform	½	½
	Community Experience App	½	½
Max. Score		**8**	

Innovation	Score N	Score E
Demonstrate substantial performance to a specific Intelligence indicator or outcome (case-by-case basis) E.g. SmartScore, Digital Twin, Cloud BMS	2	2

IN1 Integrated: 5-Step SMART Process

Requirement	New Building	Existing Building
The objective of adopting the 5-step SMART process is to equip building owners and facilities managers with a structured, strategic framework for implementing smart technologies. This facilitates improved building performance by enhancing energy efficiency, supporting decarbonisation, promoting health and wellbeing, and strengthening building resilience.	1 point	2 point

GM v7.0:

- Propose to move the 5-step SMART process from Mt to In
- As a prerequisite for projects seeking the IN badge
- Add point scoring to encourage project to conduct the analysis
- The project team shall establish "energy usage optimisation for ACMV system" as a business objective and desired outcome, regardless of its implementation. Additionally, the team must justify any decision not to adopt an adaptive ACMV control solution in this report.

IN2 Data-Driven: Good Practices to Facilitate Data Management

Requirement	New Building	Existing Building
ii. The adoption of **Open Building Management System (BMS)** that facilitates an open, no lock-in framework architecture allowing multi-vendor systems and solutions to be connected and supported by a community of systems integrators and developers.	1 point	1 point
iii. The adoption of **Open CCTV system**	0.5 point	0.5 point
iv. The adoption of a common **international standard for asset ontology** helps standardise the semantic descriptions of physical, logical, and virtual assets in buildings, as well as the relationships between them.	1 point	1 point
v. Integration between robots, lifts, and automated doorways:		
• Robot and lift	0.5 point	1 point
• Robot and automated doorways (including turnstile)	0.5 point	0.5 point
vi. Demonstrate **robot fleet management** for at least 2 types of service robots:		
• Scheduled fleet management	0.5 point	1 point
• Interactive fleet management (e.g., through RMF)	0.5 point	1 point

GM v7.0: Propose to add (ii), (iii), and (vi).

IN2 Data-Driven – Open BMS

Open BMS is defined by the following principles:

- **Technically Open**:
  - ✓ Uses open standard protocols (e.g. BACnet, Modbus)
  - ✓ Provides API documentation at no cost
- **Commercially Open**:
  - ✓ Building owner retains full data ownership
  - ✓ Full administrative access granted to the owner
  - ✓ Control logic and configurations accessible for owner use and modification

IN2 Data-Driven – Open CCTV

The Open CCTV is defined by the following principles:

- **Technically Open**:
  - ✓ Uses open standard protocols (e.g. ONVIF)
  - ✓ Provides SDK/API documentation at no cost
- **Commercially Open**:
  - ✓ Full administrative access granted to the building owner across all devices and systems (e.g. cameras, NVRs, DVRs, VMS)
  - ✓ Building owner has full control to add, configure, and integrate devices with third-party systems

IN3 Responsive: Predictive Maintenance

Requirement	New Building	Existing Building
i. **RM&D for Lift**: A digital system to automatically track and log the usage, operations, and response of lifts, to detect lift anomalies, predict future anomalies/breakdowns, and provide several possible recommendations for diagnosis and reduction of such anomalies and breakdowns.	1 point	1 point
ii. **RM&D for ACMV**: A digital system to automatically track the operations of ACMV components, to detect the anomalies, predict future breakdowns, and provide several possible recommendations for diagnosis and reduction of such breakdowns.	1 point	1 point
iii. **RM&D for Electrical Systems**: A digital system that automatically track the operations of Electrical components, to detect the anomalies and predict future breakdowns.	0.5 point	0.5 point
iv. **Smart monitoring system for fire extinguishers and exit lights**: A digital system that enables real-time monitoring, status tracking, and maintenance management of fire extinguishers and exit light.	0.5 point	0.5 point

GM v7.0: Propose to move these Smart FM use cases from Mt to In

GM v7.0: Intelligence Section (RB)

N: New development

IN1 - Integrated	Score
	N
Digital Lifecycle:	
Digital Defects Management	1
Digital FM handover	1
Max. Score	**2**

IN2 - Data-driven	Score
	N
Good Practices to Facilitate Data Management:	
Integration between Robot and Lifts	1
Robot fleet management	1
Data Privacy and Security	
Data Privacy	½
Data Security	½
Max. Score	**3**

IN3 - Responsive	Score
	N
Predictive Maintenance:	
RM&D for Lift	1
Smart Electrical Monitoring System	1
Smart Water Pump System	1
Smart Water Leak Detection System	1
Carpark MV Monitoring System	1
Facility & Property Operations:	
Property Management System	1
Smart Facility Booking System	½
Smart Landscape System	½
Pest Monitoring System	½
Smart Security System	½
Fire Protection Equipment Blockage Monitoring System	½
User Experience & Wellbeing:	
User Feedback Platform	½
Community Experience App	½
Smart Visitor Management System	½
Max. Score	**10**

Innovation	Score
	N
Demonstrate substantial performance to a specific Intelligence indicator or outcome (case-by-case basis)	2

IN3. Responsive: Predictive Maintenance

Requirement	New Building
i. **RM&D for Lift**: A digital system to automatically track and log the usage, operations, and response of lifts, to detect lift anomalies, predict future anomalies/breakdowns, and provide several possible recommendations for diagnosis and reduction of such anomalies and breakdowns.	1 point
ii. **Smart Electrical Monitoring System**: A digital system that automatically tracks electricity usage in common services (e.g. lifts, water pumps, lighting) through sub-meters and sensors. It detects anomalies and predicts potential faults, enabling facility managers to identify inefficiencies, monitor consumption patterns, and optimise operations or maintenance schedules intelligently.	1 point
iii. **Smart Water Pump System**: A digital system that continuously monitors and controls domestic water pumps to ensure efficient and reliable water supply. It uses sensors and analytics to detect anomalies, optimise pump operations, and enable predictive maintenance.	1 point

GM v7.0: Propose to move these Smart FM use cases from Mt to In

IN3. Responsive: Facility & Property Operations

Requirement	New Building
i. **Property Management System**: A digital platform designed to streamline and automate the management of residential operations, including maintenance scheduling, asset tracking, resident communication, billing, and document management. It supports data-driven decision-making, improves workflow efficiency, and enhances service delivery across the property lifecycle.	1 point
ii. **Smart Facility Booking System**: a digital platform that enables residents to reserve shared amenities, such as function rooms, barbecue pits, swimming pools, or tennis courts, through a mobile interface. The system streamlines scheduling, prevents double bookings, and can integrate with access control or payment gateways. It promotes convenience, operational efficiency, and resource optimisation while supporting a contactless and environmentally friendly approach to facility management.	0.5 point

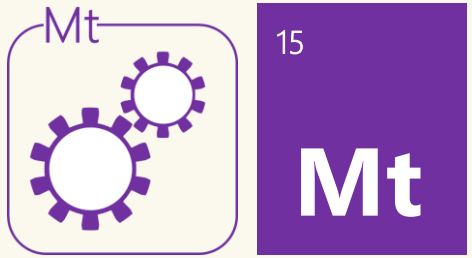
GM v7.0: Propose to move these Smart FM use cases from Mt to In

IN3. Responsive: User Experience & Wellbeing

Requirement	New Building
i. **User Feedback Platform**: a digital system designed to understand, track, and manage occupants' experiences within the building.	0.5 point
ii. **Community Experience App**: a digital solution that provides building occupants with convenient access to various services within the building and its community. This platform supports **HW3.3a Physical and Mental Wellness Programmes**. For example, a digital community experience app can allow occupants to view details and register for wellbeing activity sessions, such as yoga classes, including information on time and location.	0.5 point
iii. **Smart Visitor Management System**: a digital platform that facilitates the secure, contactless, and efficient registration, authorisation, and monitoring of visitors. It typically integrates with access control and lift systems to manage visitor entry to authorised areas, supports real-time notifications and digital logging, and promotes a paperless, user-friendly experience that enhances security and operational sustainability	0.5 point

GM v7.0: Propose to maintain (i) & (ii) and move (iii) from Mt to In

BCA Green Mark v7.0 Maintainability (Mt)



Presented by:
Executive Manager/ Low Siew Kim

Recap: Maintainability (Mt) Section in ***Green Mark 2021***

Design for Maintainability (DfM)

- practice of **integrating operations and maintenance** experience into project planning, **design,** and construction processes to achieve **ease,** accuracy, **safety**, and **economy of maintenance tasks** throughout the life of the facility



GM 2021 Maintainability (Mt) Section

- **upstream DfM considerations** and **design interventions for Smart FM adoption**, for resource-efficient **(i.e. cost effectiveness and labour efficiency)** maintenance regimes

Overview of Maintainability Section

New Non-Residential Buildings (NRB) | New Residential Buildings (RB) | Existing Non-Residential Buildings (ENRB)

GENERAL	ARCHITECTURAL EXTERIOR	ARCHITECTURAL INTERIOR	MECHANICAL	ELECTRICAL	LANDSCAPE	SMART FM	FACILITIES
Integrated Design Approach	General Facade	Floor	Chiller Plant	Lighting System	Softscape	Good Practices	Outdoor games courts
5-Step SMART FM Process	Cladding System: Tile / stone / Metal	Wall and Partitions	VRF	Power Distribution System	Hardscape	Innovation	
Life Cycle Costing	Curtain Wall: Glazing / Others	Ceiling	Air Distribution System	Extra Low Voltage (ELV) System	Vertical Greenery	Advanced Smart FM	
Maintenance Contract	Masonry and lightweight concrete panels	Wet room and Storage	Domestic Water Supply	Lightning Protection System	Roof & Sky Terraces	Robotics and Automation	
	Façade features	Basement	Fire Protection System	Vertical Transportation System	Water retaining structures		
	Entrance lobby	Loading Bay/ Back of house service Areas	Sanitary System	Solar Photovoltaic System	Standalone Structures		
	Roof		BMS System				
			Swimming pool Filtration System	Carpark Entry System			

[RB only]

[RB only]

GM v 7.0 – Mt Section: Overview of Review

Goal: Sharpen focus on

- **Environmental Sustainability outcomes** that align with BCA's strategic objectives
- Outcomes **directly impacting user experience** and meeting public expectations for Mt Badge buildings

	Non-Residential Building (NRB)	Residential Building (RB)	Existing Non-Residential Building (ENRB)
Total criteria in **GM2021** Mt Section	178	136	198

	Non-Residential Building (NRB)	Residential Building (RB)	Existing Non-Residential Building (ENRB)
Total criteria in GM v 7.0 Mt Section	**79 (~44%)**	**56 (~41%)**	**75 (~38%)**

GM v7 – Mt Section: Review Process

1) **Data Centric Approach:**
   - Criteria that are common industry practice **shifted to DfM guide**
   - Criteria that are impactful to user experience **retained in Mt Section**

2) **System Approach:**
   - Criteria which are partial solutions **clustered as singular criterion** for system-level performance

3) **Consolidation Approach:**
   - Alternative criteria with same design intent **consolidated as singular criterion** to be more outcome-based

4) **Holistic Approach:**
   - Criteria synergistic with other GM Sections **redistributed accordingly** for more focused approach

1. Data Centric Approach:

- Criteria that are common industry practice **shifted to DfM guide**
- Criteria that are impactful to user experience **retained in Mt Section**

System	Outcome	Criteria		Review	Remarks
Architectural Interior					
Wet Rooms and Storage	Reduce risk of mould and fungus formation on walls in wet rooms	2.3.2	a. Specify wall finishes with tiles	**Move to DfM Guide**	Common industry practice
			b. Specify wall finishes with anti-mould top-coat	**Move to DfM Guide**	Common industry practice
Mechanical					
Chiller Plant	**Access** to equipment requiring frequent maintenance	3.1.2	d. Provide min. 1.2 m wide access route to the M&E plant rooms ***(pre-req)***	**Move to DfM Guide**	Common industry practice
Air Distribution System	**Access** for maintenance	3.3.1	b. MEWP access to FCU mounted at heights ***(pre-req)***	**Move to DfM Guide**	Common industry practice
Architectural Exterior					
Façade System – Curtain Wall	To reduce risk of **water ingress**	1.3.1	b. Design for a pressure-equalised system	**Retain**	Impacts user-experience
Architectural Interior					
Wet Rooms and Storage	Reduce risk of **water spill** on floor	2.3.4	a. Full vanity washbasin and sloping away from the user	**Retain**	Impacts user-experience

2. System Approach:

- Criteria which are partial solutions **clustered into singular criterion** for system-level performance

System	Outcome	Criteria		Review	Remarks
Architectural Interior					
Wet Rooms and Storage	Reduce risk of **water spill** on floor	2.3.4	a. Design for full vanity washbasin & slope away from the user	**1 Criterion (a+b)**	
			b. Design for soap and tissue dispenser within arm's reach to faucets.		
Mechanical					
Building Management System	Access space above false ceiling for maintenance	3.7.1	a. Provide ceiling access panel with minimum opening of 600 mm x 600 mm	**1 Criterion (a+b)**	
			b. Sensors and actuator should be within reachable distance from the access panel		
Electrical					
Lighting System	More reliable light fittings	4.1.1	a. Comply with test standards LM-80 B30 L70 @ L50,000	**1 Criterion (4.1.1 + 4.1.2 + 4.1.3)**	***Overarching outcome:*** For less frequent replacement of light fittings
Lighting System	Reduce risk of light flickering	4.1.2	a. Comply with test standards (IEC)		
Lighting System	Reduce risk of LED colour shift	4.1.3	a. Comply with test standards (ANSI)		

3. Consolidation Approach:

- Alternative criteria with same design intent **consolidated as singular criterion** to be more outcome-based

System	Outcome		Criteria	Review	Remarks
Landscape					
Hardscape	Reduce risk of damage / degradation to outdoor fixed furniture	5.2.2	a. Specify for engineered wood with water absorption rate not exceeding 0.5%. b. Specify for anti-corrosion coating or stainless steel or aluminium	**1 Criterion**	• Alternative solutions • Combined as one criterion
Mechanical					
Building Management System	Access to control panels for regular maintenance	3.7.2	a. Top of the control panels shall be maximum 1.8 m from FFL b. Provide direct access from scaffolding, ladders etc. and min. 800 mm clear access space in front of the control panels	**1 criteria**	• Alternative solutions • Combined as one criterion

4. Holistic Approach:

- Criteria synergistic with other GM Sections **redistributed accordingly** for more focused approach

GM2021 – Mt Section

- 5 Step Smart FM Report
- Type 1, 2 and 3 solutions
- Outcome-based contracts
- Good design practices for BMS

BMS functionality *(EB only)*

- Backup server
- UPS for BMS panels
- Integration with M&E systems
- Others

CMMS / FMS functionality *(EB only)*

- Failure analysis
- Work order management
- Others

GM v 7.0 – IN Section

- 5 Step Smart FM Report
- Smart FM Solutions + Outcome-based contracts
- Innovations

DfM Guide *(to be updated accordingly)*

- Good design practices for BMS
- BMS functionality
- CMMS / FMS functionality

4. Holistic Approach:

- Criteria synergistic with other GM Sections **redistributed accordingly** for more focused approach

System	Outcome	Criteria		Remarks
General				
Promote inclusion of DfM at planning and design stage	Promote integrated design approach and stakeholder engagement at planning and key design stages.	0ai.	Conduct at least 3 design charrettes during the concept/ detail design stage involving minimally 3 stakeholders	**Dovetailed into Resilience (RE) Section**
Archi Exterior				
Entrance Lobby	Reduce risk of **water ingress** at entrances	1.6.1	a. Design for raised internal level	**Dovetailed into Resilience (RE) Section**
			b. Design canopy/overhang to shelter against wind-driven rain	
			c. Design entrances with transition/buffer zone, e.g. vestibule design	
			d. Design for aluminium drain pan with walk-off mats.	
			[Advanced Efforts] Numerical simulation (wind-driven rain penetration) studies specific to location and context of surroundings of entrances	

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GM v 7.0 – Mt Section: Overview of Review

Goal: Sharpen focus on

- **Environmental Sustainability outcomes** that align with BCA's strategic objectives,
- Outcomes **directly impacting user experience** and meeting public expectations for Mt Badge buildings

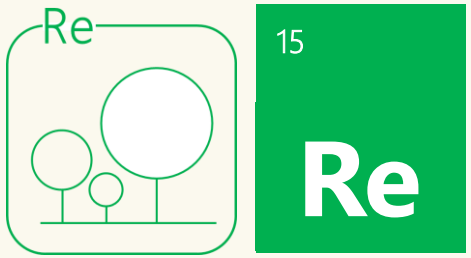
	GM 2021
1	3 frameworks & technical guides (RB / NRB / EB)
2	Embedded Mt scoresheet within GM scoresheet
3	Proration of points for "N/A" criteria
4	No points awarded for complying with prerequisites
5	Different Mt to GM point translation matrix across RB / NRB / EB frameworks
6	Total no. of criteria and points: Non-Residential Buildings **(NRB)**: 178 (91 Mt points) Residential Buildings **(RB)**: 136 (71 Mt points) Existing Non-Residential Buildings **(ENRB)**: 198 (124 Mt points)

Review:
(1) Data Centric Approach,
(2) System Approach,
(3) Consolidation Approach,
(4) Holistic Approach

GM v 7.0
1 combined framework & technical guide
Mt scoresheet integrated within GM scoresheet (similar to other GM sections)
[no change] Proration of points for "N/A" criteria
Mt point awarded for complying with prerequisites
Single Mt to GM point translation across all 3 frameworks (i.e. 3 Mt to 1 GM point)
Total no. of criteria and points applicable to each typology: Non-Residential Buildings **(NRB)**: **79 *(~44%)*** (53 Mt points) Residential Buildings **(RB)**: **56 *(~41%)*** (47 Mt points) Existing Non-Residential Buildings **(ENRB)**: **75 *(~38%)*** (55 Mt points)

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BCA Green Mark v7.0 Resilience



Presented by:
Senior Manager/ Ar. Darren Tan

Overview of Resilience Section

Evaluates buildings on their climate mitigation and adaptation strategies as well as the use of nature-based or natural climate solutions with actions to protect, sustainably manage, and restore natural or modified ecosystems

Protect - 6 points

- **Conservation**
  Habitat and Ecology, Resources
- **Climate-Resilient Design**
  ~~Outdoor thermal comfort and~~ UHI mitigation measures and Wind-driven Rain Mitigation
- **Contextual Response**
  Environmental modelling, response to site context

Manage - 5 points

- **Leadership**
  Project team, integrated design approach and stakeholder engagement, procurement practices
- **Circularity**
  Tackling various waste streams
- **Resilience Strategy**
  Climate change risk and adaptation strategy for the building, aligned to principles outlined by the Taskforce for Climate Related Financial Disclosures (TCFD)

Restore – 4 points

- **Buildings in Nature**
  Greenery and planting strategy to promote habitat creation for biodiversity
- ~~**Natural Climate Solutions**~~
  ~~Restoration of ecology and Investment, production or purchase of nature-based credits~~

Innovation





Overview of Resilience Section

Evaluates buildings on their climate mitigation and adaptation strategies as well as the use of nature-based or natural climate solutions with actions to protect, sustainably manage, and restore natural or modified ecosystems

Protect - 6 points

- Conserv
  Habitat ar
- Climate-Resilient Design
  ~~Outdoor thermal comfort and~~ UHI mitigation measures and Wind-driven Rain Mitigation
- Contextual response
  Environmental modelling, response to site context

Consolidated requirement under UHI

Moved from Mt Section

Manage - 5 points

- Leadership
  Project team, integrated design approach and stakeholder engagement, procurement practices
- Circu
  Tackling various waste streams
- Resilience Strategy
  Climate change risk and adaptation strategy for the building, aligned to principles outlined by the Taskforce for Climate Related Financial Disclosures (TCFD)

Moved from Mt Section

Restore – 4 points

- Buildings in Nature
  Greenery and planting strategy to promote habitat creation for biodiversity
- ~~Natural Climate Solutions~~
  ~~Restoration of ecology and investment, production or purchase of nature-based credits~~

Point scored under Innovation

Increased focus on climate resilience

Innovation





RE1 Protect

RE1.1b Resources	New Buildings	Existing Buildings
(i) Asset Sustainable Policy and Action Plan shall include:		~~(Cap at 3 Points)~~
a) Energy Management Policy and Energy Improvement Plan	N/A	0.5 Point
b) Water Management Policy and Water Improvement Plan	N/A	0.5 Point
c) Waste Management Policy and 3R Plan	N/A	0.5 Point
(ii) a) PUB Water Efficient Building (Basic) certification	N/A	0.5 Point OR
b) PUB WELS "3-ticks" rating for 90% of all relevant water fittings	1 Point for (ii)(b)	1 Point

GM v7: Propose to reduce to 0.5 points each (from 1 point)

RE1 Protect

RE1.2a Urban Heat Island Mitigation	**New Buildings**	**Existing Buildings**
(i) Adoption of UHI mitigation measures such as: • Green and blue spaces for landscaping and roof • Roofing materials or coatings or cool paints with high Solar Reflectance Index (SRI) > 40 and/or high emissivity >0.9 • Use of solar photovoltaic panels on roof which also provides shading • Unshaded hardscape areas with SRI > 39, inclusive of unshaded carparks, internal roads, plazas, and pedestrian walkways • Use of permeable paving strategies such as gravel or open paving systems. • Other performance-based strategies that demonstrate UHI effect mitigation. The site plan shall be used to calculate the site coverage, at plan view, of mitigation measures adopted.	1 Point 0.5 Point for ≥ 50% site coverage, 1 Point for ≥ 80% site coverage	1 Point 0.5 Point for ≥ 50% site coverage, 1 Point for ≥ 80% site coverage

GM v7: To include high emissivity >0.9

RE1 Protect

RE1.2a Urban Heat Island Mitigation	**New Buildings**	**Existing Buildings**
(ii) Use environmental modelling of the site for urban heat island (UHI) mitigation using future climate projections from the MSS V3 scenarios (2050/2080) to forecast emerging risks and identify critical heat spots. The following metrics will serve as critical thresholds for outdoor thermal comfort: • Physiological Equivalent Temperature (PET) of ≤34°C • Universal Thermal Climate Index (UTCI) of ≤32°C • TSV <+2 • WBGT of <32°C Developments should identify and plan for suitable interventions to mitigate the UHI) effect through massing, material selection, the landscape, (hardscape, softscape) and building surfaces' albedo, etc. The model should be conducted using simulations over the site area, based on 12pm (noon) on 4 representative dates, i.e. 21 Mar, 22 June, 23 Sep and 22 Dec.	2 Points	2 Points

GM v7:

- To include RE1.2a Outdoor Thermal Comfort under Urban Heat Island Mitigation. Modelling to be based on future climate projections to identify climate risks.
- To specify characteristic day (March 21, June 22, September 23 and December 22) and include WBGT of <32°C

RE1 Protect

RE1.2b Wind-driven Rain Mitigation	**New Buildings**	**Existing Buildings**
To minimise water ingress caused by wind driven rains, through optimal design detailing to reduce the frequency of maintenance. i) Design strategies to reduce water ingress and wind-driven rain penetration, such canopies, overhangs, façade screenings, continuous drip edges or pressure-equalised cavity system etc. Demonstrate that these strategies cover high-exposure facade areas, and how façade design detailing (cladding and curtain wall) systems prevents water ingress. ii) To use Computational Fluid Dynamics (CFD) wind driven rain simulation for intense extreme rain events using future climate projections from the MSS V3 (2050/2080 scenarios) to identify high-exposure façade areas and ingress points.	1 Point 2 Points	1 Point 2 Points

GM v7:
Part (i) – Moved from Mt section. Point will be awarded based on design strategies.
Part (ii) – WDR simulation based on future climate projections to identify climate risks.

RE1 Protect

RE1.3 Contextual Response	New Buildings	Existing Buildings
To demonstrate how the site topography, microclimate, access and connectivity has informed the design of the urban form and site layout. A site analysis should be conducted to identify the relationships between human and physical geography of the site and inform how the building responds to these factors.	~~2 Points~~ 1 Point	N/A

GM v7:

- Reduced to 1 point.
- Macro level simulations will not be required to score this criterion. Simulations will be awarded under RE1.2a and RE1.2b for OTC and WDR simulations.

RE2 Manage

RE2.1a Project Team	New Buildings	Existing Buildings
(i) Accredited professionals: ~~GM AP /~~ GM AAP ~~GM AP(FM) / GM AAP(FM)~~	~~0.5 Point (max)~~ ~~[GM AP = 0.25 Point~~ GM AAP = 0.5 Point	~~1 Point (max)~~ ~~[GM AP(FM) = 0.5 Point~~ GM AAP~~(FM)~~ = 1 Point
(ii) Firms certified under Singapore Green Building Services (SGBS) certification scheme, and Certified FM Company (CFMC) accreditation scheme	0.5 Point (max) [1 firm = 0.25 Point]	0.5 Point (max) [1 firm = 0.25 Point]
(iii) Firms certified under Sustainable Net Zero Organisation (SNZO) certification scheme	1 Point	1 Point

GM v7:

- To remove GMAP under RE2.1a (i) as it is a minimum requirement for GM submission.
- Alignment with the unification of GM AAP and GM AAP (FM) qualifications .
- To give points for SNZO certification

RE2 Manage

RE2.1a Project Team	New Buildings	Existing Buildings
(iv) Promote integrated design approach and stakeholder engagement at planning and key design stages. Conduct at least 3 design charrettes during the concept/ detail design stage involving minimally 3 stakeholders from the following group: • Building owner/ representative • Facilities manager (FM)/operator • Design consultants (minimally one representative each from the various disciplines – architecture, civil & structural, mechanical, and electrical, landscape, quantity surveyor, etc.) • Other specialist consultant / supplier (i.e. environmentally sustainable design, lighting specialist, material specialists, façade access consultant, etc.)	0.5 Point	1 Point

GM v7: To move Mt section on integrated design approach and stakeholder engagement to RE.

RE2 Manage

RE2.1b Procurement	New Buildings	Existing Buildings
(ii) Energy performance contracting to implement and deliver energy efficiency, renewable energy and/or energy recovery project with an energy performance contract wherein the EPC firm's remuneration is based on demonstrated energy savings or maintained efficiency levels.	For Non-Residential Buildings 1 Point For Residential Buildings N/A	For Non-Residential Buildings 1 Point For Residential Buildings N/A
(iii) Electrification to future-proof building infrastructure for a decarbonised power grid and reduce reliance on fossil fuel through removal of all on-site combustion, adoption of induction cookers and provision of Electric Vehicle (EV) charging provision.	2 Points	2 Points

GM v7: Include electrification under sustainable procurement

RE2 Manage

RE2.3 Resilience Strategy	New Buildings	Existing Buildings
A comprehensive ***project specific*** climate change risk and adaptation assessment, aligned with the International Sustainability Standards Board (IFRS Sustainability Disclosure Standard S2) framework and principles outlined by the Taskforce for Climate Related Financial Disclosures (TCFD), that:		
i. Use climate-related scenario analysis to identify physical risks, transition risks, and climate-related opportunities and their effects on the project's financial impacts;	~~2 Points~~ 1 Point	~~2 Points~~ 1 Point
ii. Disclose climate-related targets and design approaches at the onset of the project to manage identified risks, including how these are integrated into the strategy and decision-making; **or**	1 Point	N/A
iii. Develop a climate resilience action plan that addresses how the building would be resilient to these events, through current or future design interventions.	N/A	1 Point

GM v7:

- Reduced part (i) to 1 point.
- RE1.2a and RE1.2b will award points for Outdoor Thermal Comfort and Wind Driven Rain simulation, which will address the various climate scenarios.
- Part (i) will now focus on the transition risks and opportunities.

RE3 Restore

RE3.1 Buildings in Nature	New Buildings	Existing Buildings
iii. Provision of 'Wild landscape areas' (10% of site area) to create habitat pockets on the site	1 Point	~~1~~1.5 Points
iv. PUB's ABC Waters Certification	0.5 Point [ABC Waters Certified]	0.5 Point [ABC Waters Certified]
	1 Point [ABC Waters Certified (Gold)]	1 Point [ABC Waters Certified (Gold)]

GM v7:
- Increased points for wild landscape areas for existing buildings to encourage more naturalised planting and connectivity to nature ways.
- To include ABC waters to be under this section.

BCA Green Mark v7.0
Health & Wellbeing





Presented by:
Principal Manager/ Lee Jang Young

Overview of Health and Wellbeing Section

Scores buildings on how they are designed, retrofitted, constructed and operated to facilitate mental, physical and sociological well-being of their occupants. This section has been developed jointly with the Ministry of Health Transformation Office (MOHT) and Centre for Liveable Cities (CLC).

Physiological - 5 points

- **Active movement design**
  Active mobility (site design), Active Interior (internal design such as internal staircases, furniture)
- **Material emissions**
  Low VOC products, IAQ audits
- **Air Quality and Comfort**
  Thermal comfort, increased outdoor air provision, clean air, Infectious Aerosol Control (latest SS553/ SS554)

Psychological – 5 points

- **Access to nature**
  Biophilic design at key common areas, Provision of accessible planted sky gardens/ terraces
- **Circadian rhythm**
  Views to outside, Circadian lighting
- **Sound**
  Acoustic comfort through greater impact sound insulation, airborne sound transmission reduction

Sociological – 5 points

- **Inclusive**
  Universal Design
- **Communal**
  Restorative spaces, rest areas for outsourced workers
- **Health and wellness programmes**
  Community programmes, peer support programmes, healthy eating programmes etc.

Innovation



Overview of Health and Wellbeing Section

Scores buildings on how they are designed, retrofitted, constructed and operated to facilitate mental, physical and sociological well-being of their occupants. This section has been developed jointly with the Ministry of Health Transformation Office (MOHT) and Centre for Liveable Cities (CLC).

Physiological - 5 points

- **Active movement design**
  Active mobility (site design), Active Interior (internal design such as internal staircases, furniture)
- **Material emissions**
  Low VOC products, IAQ audits
- **Air Quality and Comfort**
  Thermal comfort, increased outdoor air provision, clean air, Infectious Aerosol Control (latest SS553/ SS554)

Mitigate airborne pathogen transmission risk

Psychological – 5 points

- **Access to nature**
  Biophilic design at key common areas, Provision of accessible planted sky gardens/ terraces

Reposition requirement

- **Sound**
  Acoustic comfort through greater impact sound insulation, airborne sound transmission reduction

Sociological – 5 points

- **Inclusive**
  Universal Design
- **Communal**
  Restorative spaces, rest areas for outsourced workers
- **Health and wellness programmes**
  Community programmes, peer support programmes, healthy eating programmes

Incorporated HPB's suggestion

Innovation



HW1.1b Active Interior

(i) Active Furnishing	For Non-Residential Buildings* 1 Point [≥90% of workstations = 1 point. ≥50% of workstations = 0.5 points] For Residential Buildings N/A *applicable to office buildings only	For Non-Residential Buildings* 1 Point [≥90% of workstations = 1 point. ≥50% of workstations = 0.5 points] For Residential Buildings N/A *applicable to office buildings only

- Aims to encourage non-sedentary behaviour (e.g. standing tables, height-adjustable desk, and standing meeting rooms etc.), more applicable to buildings with substantial number of workstations such as office buildings
- Point scoring based on % of workstations → makes it easier for buildings with a handful number of workstations to score (e.g. hotels and retail malls)
- Propose to indicate that this criterion is 'applicable to office buildings only'

HW1.3c Clean Air

HW1.3c Clean Air (NEW)	New Buildings	Existing Buildings
(iii) Infectious Aerosol Control (ASHRAE Standard 241, latest SS553/ SS554)	1 point (Residential: N/A)	2 points (Residential: N/A)

- Aims to mitigate airborne pathogen transmission risk by developing Building Readiness Plan (BRP) to achieve the required Equivalent Clean Air (ECA) during Infection Risk Management Mode (IRMM) according to ASHRAE Standard 241 and/or the latest SS553/ SS554
- New buildings: develop a BRP to meet ECA during IRMM (design stage: potential occupancy type, verification stage: on-site measurement of ventilation/ provision of filtration, adjust BRP according to actual occupancy type/ ventilation and filtration provision)
- Existing buildings: work with tenants to assess the current ventilation and filtration provision at each space and develop a BRP to meet ECA during IRMM
- ASHRAE 241 ECA calculator

ASHRAE Standard 241: Control of Infectious Aerosols

HW2.1 Access to Nature

HW2.1 Access to Nature	New Buildings	Existing Buildings
i. Provision of accessible planted sky terraces, ~~courtyards,~~ and/ or roof top gardens.	1 Point [accessible by all tenants/users = 1 point. Accessible by selected tenants/ users = 0.5 points]	1 Point [accessible by all tenants/users = 1 point. Accessible by selected tenants/ users = 0.5 points]

- Aims to create accessible green spaces that serve as restorative environments while enhancing building occupants' connection to nature
- Requirements include provision of supporting infrastructure/ amenities/ landscape maintenance plan. However, there is no minimum requirement for scoring in terms of accessibility coverage or size of each garden.
- Propose (1) to award points based on accessibility coverage, and (2) to remove courtyards (as it's covered in Green Plot Ratio in Re section)

HW2.1 Access to Nature

HW2.1 Access to Nature	New Buildings	Existing Buildings
(ii) Fixed indoor planting distributed at key common areas. >10% of common area (by floor Area) to have fixed indoor planting, and/or ponds, supporting systems such as grow lights, irrigation systems need to be shown.	0.5 Points	1 Point
(iii) Placement of natural elements and use of mixed textures in key common areas such as atria, entrance lobbies, shared seating areas, and key circulation routes.	0.5 Points	0.5 Points
(iv) In the absence of indoor or accessible planting, to orientate and design common areas for direct visual access to greenery.	~~0.5 Points~~	~~0.5 Points~~

- Propose to combine (ii), (iii) and (iv) and position it as Biophilic design at key common areas

(ii) Biophilic design at key common areas such as atria, entrance lobbies, shared seating areas, and key circulation routes

- Fixed indoor planting and/or ponds with supporting systems such as grow lights and irrigation systems (>10% of key common area by floor Area)
- Placement of natural and/or artificial elements of nature such as stone surfaces, pebbles, pictures of nature/ waterfall (>10% of key common area by floor Area)

HW2.3a Sound Zoning Approach

HW2.3a Sound Zoning Approach	New Buildings	Existing Buildings
~~Orienting and locating noise-sensitive buildings and spaces away from exterior sourced noises. Using less noise-sensitive spaces (e.g. MSCP, pedestrian/cycling pathways) and/or natural or engineered barrier (e.g. balconies, toilets/kitchen, dense landscaping) as buffers from exterior sourced noises~~	~~0.5 Points~~	~~0.5 Points~~

- Aims to implement passive and/or active acoustic control measures to minimise exterior sourced noises by creating positive soundscapes, to improve the aural comfort of occupants
- Propose to remove this criterion as this is a widely adopted practice, e.g. HDB, URA (planning with setbacks/ buffers), NParks (tree/green softscape barriers along the road) and LTA (road planning with noise impact considerations) etc. and HW2.3b (ii) Internal Noise Level already addresses exterior sourced noises as an outcome-based requirement

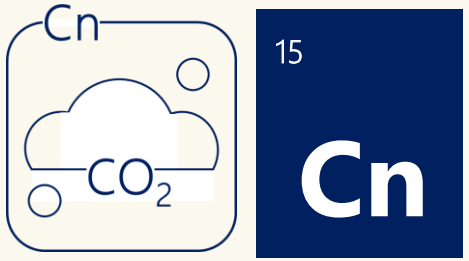
HW3.3a Physical Activity and Mental Wellness Programmes

HW3.3a Physical and Mental Wellness Programmes	New Buildings	Existing Buildings
Structured, regular fitness and mental wellness programmes for all staff, or occupants through engagement of external facilities and resources, e.g. subsidised gym memberships, health assessments, personal training, fitness classes, mass workouts, talks and workshops, counselling, peer support programmes. (Min. 6 events a year)	For Non-Residential Buildings N/A For Residential Buildings N/A	For Non-Residential Buildings 0.5 Points For Residential Buildings ~~N/A~~ 0.5 Points

- As per HPB's suggestion, 'peer support programmes (mentorship, buddy system etc.)' to be included in the examples
- Propose to allow existing residential buildings to score for this, provided proper physical/ mental wellness programmes are organised for residents

bca.gov.sg

BCA Green Mark v7.0
Whole Life Carbon



Presented by:
Senior Manager/ Edwin Koh

Overview of Whole Life Carbon Section

Scores buildings on their Whole Life Carbon performance based on international calculation methodologies, upfront (embodied) carbon, use of sustainable construction methods, and the sustainable fitting-out of buildings. The section will also evaluate on the plans, and delivery of those plans to transition the building towards zero carbon emissions

CN1: Carbon – 5 points

- **Whole of Life Carbon(WLC) Assessment**
  Following BS EN 15978 and BS EN 15804
  Recognition of existing buildings WLC accounting
- **Embodied Carbon Calculation**
  Reduction of Upfront carbon in Concrete, Steel and Glass from Reference to Baseline values (incl. superstructure + substructure+ EC Guide Scope)
- **Roadmap to Net Zero Operational Carbon**
  2030 Energy Transition plan to deliver net zero in operations by 2030

CN2: Construction – 5 points

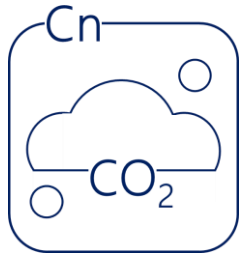
- **Sustainable Construction**
  ~~Low CUI (<0.35~~); Use of Low Carbon Concrete and Adoption of Sustainable Building Systems DfMA, Use of Low Embodied Carbon Steel (a) Reinforcing Steel (b) Structural Steel
- **Sustainable Products & Finishes**
  60% by value Architectural and Landscaping SGBP 2 ticks and above
  60% by value MEP systems SGBP labelled
- **Conservation, Resource Recovery & Waste Management**
  ~~Green and Gracious Builders~~, conservation of building structure and demolition protocol, Recognition of Carbon optioneering study/ & retention of foundation/building structures, Decarbonisation of construction processes

CN3: Fit Out – 5 points

- **Green Lease**
  Environmentally preferable purchasing policy for building operations, environmental performance targets & provision of annual electrical bills by tenants
- **Fit Out Products**
  >=80% of fit out materials used shall be SGBP 2 ticks and above
- ~~**Tenancy Offsets**~~
  ~~Procurement of carbon offsets for tenant operations and fit outs~~

Innovation





15
Cn

Overview of Whole Life Carbon Section

Scores buildings on their Whole Life Carbon performance based on international calculation methodologies, upfront (embodied) carbon, use of sustainable construction methods, and the sustainable fitting-out of buildings. The section will also evaluate on the plans, and delivery of those plans to transition the building towards zero carbon emissions

CN1: Carbon – 5 points

- Whole of Life Carbon(WLC) Assessment
  Following BS EN 15978 and BS EN 15804
  Recognition of existing buildings WLC accounting

Extend to existing buildings

- Embodied Carbon Calculation
  Reduction of Upfront carbon in Concrete, Steel and Glass from Reference to Baseline values (incl. superstructure + substructure+ EC Guide Scope)

Transit to baseline value and expand coverage

- [illegible] net zero in operations by 2030

CN2: Construction – 5 points

- Sustainable Construction
  ~~Low CUI (<0.35~~); Use of Low Carbon Concrete and Adoption of Sustainable Building Systems DfMA, Use of Low Embodied Carbon Steel (a) Reinforcing Steel (b) Structural Steel

Promote low embodied carbon steel

- Sustainable Pro
  60% by value Architectural and Landscaping SGBP 2 ticks and above
  60% by value MEP systems SGBP labelled

- Conservation, Resource Recovery & Waste Management
  ~~Green and Gracious Builders~~, conservation of building structure and demolition protocol, Recognition of Carbon optioneering study/ & retention of foundation/building structures, Decarbonisation of construction processes

Recognise adaptive reuse/conservation
Promote decarbonization of construction processes

CN3: Fit Out – 5 points

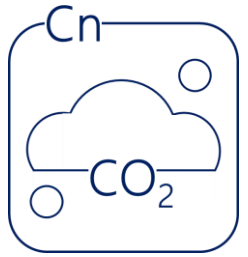
- Green Lease
  Environmentally preferable purchasing policy for building operations, environmental performance targets & provision of annual electrical bills by tenants

Recognise tenants' efforts

- Fit O
  >=80% of fit out materials used shall be SGBP 2 ticks and above

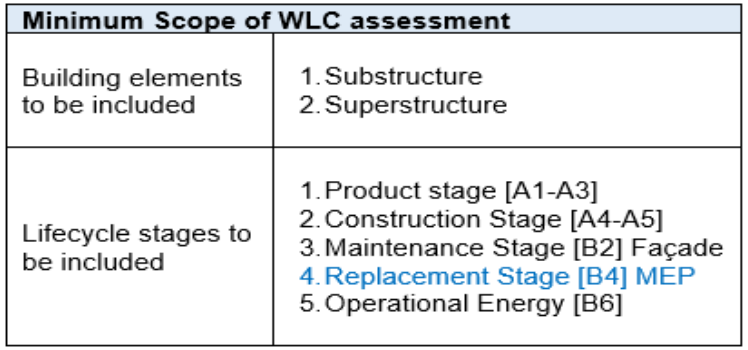
- ~~Tenancy Offsets~~
  ~~Procurement of carbon offsets for tenant operations and fit outs~~





15
Cn

CN1 Carbon – (i) Minimum Scope WLC Assessment

CN1.1 (i) Minimum Scope Requirement of WLC Assessment	New Building	Existing Building/ A&A works w indep. substructure
	**Non Residential** **3 pt (i)** **Residential** **3 pt (i)**	**Non Residential** **N.A** / **3 pt (i)** **Residential** **N.A** / **3 pt (i)**

Proposal:

Extend scoring for Minimum scope WLC assessment criteria to cover **Existing buildings with A&A works with independent substructures:**

- Use of **SBCC (BECC + MECC)** to account for Stages A & B of building life cycle
- Replacement stage [B4] will cover **MEP systems** to align with MECC carbon accounting

[Note: New and Existing building projects scoring under CN1.1(i) will be excluded from scoring under CN 1.1(ii)(a)].

Desired outcome: To advance **capability** on building life cycle accounting for **Whole Life Carbon** and establish **local** carbon benchmark ecosystem for SG's building stock

Singapore Building Carbon Calculator (SBCC)

Localised Carbon Tools to Compute Carbon

A: Upfront Carbon stage







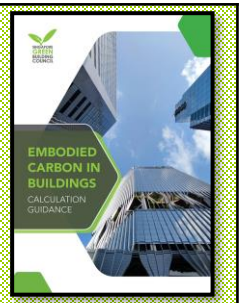


A1 to A3	A4	A5

Mechanical & Electrical Carbon Calculator (MEC
[M&E equipment](Excel based)

Building Embodied Carbon Calculator (BECC 2.0)

For **New buildings**
[Architectural and
Civil & Structural Materials Carbon Calculator]
(Excel based) and (Web based)



NEW

For **Existing buildings from 1960s to 1980s**
[Architectural and
Civil & Structural Materials Carbon Calculator]
(Excel based)

Soft launched at IGBC 2025

CN1 Carbon – (ii) Embodied Carbon Computation

CN1.1 (ii) Embodied Carbon Computation	New Building	Existing Building/ A&A works w indep. substructure
(ii) Embodied Carbon Computation a) Calculation of embodied carbon of the development b) >10% Reduction from the baseline embodied carbon c) >30% Reduction from the baseline embodied carbon	**Non Residential:** 0.5 pt (ii)(a) 1 pt (ii)(b) 2 pts (ii)(c) **Residential:** 0.5 pt (ii)(a) 1 pt (ii)(b) 2 pts (ii)(c)	**Non Residential** N.A/ [1 pt (ii)(a)] N.A/ [1 pt (ii)(b) N.A/ [2 pts (ii)(c)] **Residential** N.A/ [1 pt (ii)(a)] N.A/ [1 pt (ii)(b) N.A/ [2 pts (ii)(c)]

	Baseline values (kgCO2e/m2)
Non-Residential	900
Residential	1000
Industrial	2500

*Baseline values based on A1-5 emissions for superstructure and **substructure** and normalised against **SGFA***

Exemplary performance beyond 40% reduction will be recognised under the Innovation Section

Proposal

- Transit from benchmarking against Reference value to **Baseline value** based on A1 to A5 emissions to include substructure
- Normalise upfront carbon against SGFA for all building typologies
- Baseline to account for scope of materials in *SGBC's Embodied Carbon in Buildings Calculation Guidance*

Desired outcome: To establish the robustness of **upfront carbon baseline** ecosystem of different building typologies for procurement, measurement, reporting and embodied carbon reduction towards decarbonisation.

CN2 Construction – 2.1(i) Use of Low Embodied Carbon Steel

CN2.1 Sustainable Construction	New Building	Existing Building/ (A&Aworks w indep. substructure)
(i) Use of Low Embodied Carbon Steel a) Low Embodied Carbon Reinforcing steel Use of low embodied carbon reinforcing steel certified by SGBC or equivalent local certification bodies for: 1. ≥ 50% of total superstructural steel works by mass 2. ≥ 80% of total superstructural steel works by mass b) **Low Embodied Carbon Structural Steel** Use of low embodied carbon structural steel certified by SGBC or equivalent local certification bodies for: 1. ≥ 50% of total superstructural steel works by mass 2. ≥ 80% of total superstructural steel works by mass	**Non Residential:** 0.25 to 1 pt (i)(a)(1.) 0.50 to 2 pt (i)(a)(2.) 0.25 to 1 pt (i)(b)(1.) 0.50 to 2 pt (i)(b)(2.) **Residential** 0.25 to 1 pt (i)(a)(1.) 0.50 to 2 pt (i)(a)(2.) 0.25 to 1 pt (i)(b)(1.) 0.50 to 2 pt (i)(b)(2.)	**Non Residential:** NA/ 0.25 to 1 pt (i)(a)(1.) NA/ 0.50 to 2 pt (i)(a)(2.) NA/ 0.25 to 1 pt (i)(b)(1.) NA/ 0.50 to 2 pt (i)(b)(2.) **Residential:** NA/ 0.25 to 1 pt (i)(a)(1.) NA/ 0.50 to 2 pt (i)(a)(2.) NA/ 0.25 to 1 pt (i)(b)(1.) NA/ 0.50 to 2 pt (i)(b)(2.)

Reinforcing / Structural Steel		Points
GWP (kgCO2e/tonne)		
Reinforcing steel/ Structural steel with least SGBP 1 tick or equivalent administered by local certification bodies	≤1700	0.25 (NR)(R)[(i)(a)/(b)(1.)] 0.5 (NR)(R)[(i)(a)/(b)(2.)]
Reinforcing steel/ Structural steel with least SGBP 2 ticks or equivalent administered by local certification bodies	≤1350	0.5 (NR)(R)[(i)(a)/(b)(1.)] 1.0 (NR)(R)[(i)(a)/(b)(2.)]
Reinforcing steel/ Structural steel with at least SGBP 3 ticks or equivalent administered by local certification bodies	≤1000	0.75 (NR)(R)[(i)(a)/(b)(1.)] 1.5(NR)(R)[(i)(a)/(b)(2.)]
Reinforcing steel/ Structural steel with at least SGBP 4 ticks or equivalent administered by local certification bodies	≤650	1.0 (NR)(R) [(i)(a)/(b)(1.)] 2.0 (NR)(R) [(i)(a)/(b)(2.)]

Proposal

- To recognise the use of low embodied carbon reinforcing and structural steel to drive greater embodied carbon reduction, along with low carbon concrete recognition. This is also aligned with SGBC's certification of steel to include GWP metric as pre-requisite requirements.
- To sunset CUI criteria.

Desired outcome: To accelerate the construction industry's decarbonisation efforts by promoting adoption of low embodied carbon reinforcing and structural steel, in alignment with SGBC's Global Warming Potential (GWP) Certification requirements for steel.

CN2 Construction – 2.1(iii) Use of Low Carbon Concrete

CN2.1 Sustainable Construction	New Building	Existing Building/ (A&A works w indep. substructure)
(iii) Use of Low Carbon Concrete certified by SGBC or equivalent local certification bodies (using CEM II – V cements under SS EN 197-1) for ≥ 80% of applicable superstructure works by volume	**Non Residential:** 0.25 pt/0.75 pt/1 pt (iii) **Residential** 0.5 pt/1.5 pt/2 pt (iii)	**Non Residential:** N.A/ 0.25 pt/0.75pt/1 pt (iii) **Residential:** N.A/ 0.5 pt/1.5 pt/2 pt (iii)

Ready-Mixed Concrete Compressive Strength Class Category						Points
Concrete Compressive Strength Class	**C25/30**	**C32/40**	**C40/50**	**C50/60**	**≥ C60/75**	
GWP (kgCO2e/m2)						
Concrete products with least SGBP 2 ticks or equivalent administered by local certification bodies	≤310	≤370	≤415	≤460	≤500	0.25 (NR) 0.5 (R)
Concrete products with at least SGBP 3 ticks or equivalent administered by local certification bodies	≤280	≤330	≤375	≤410	≤455	0.75 (NR) 1.5 (R)
Concrete products with at least SGBP 4 ticks or equivalent administered by local certification bodies	≤250	≤300	≤340	≤370	≤410	1.0 (NR) 2.0 (R)

Proposal

- To incorporate GWP values corresponding to the SGBP tick ratings, from a minimum concrete strength class C25/30 and above for low carbon concrete

Desired outcome: To accelerate the construction industry's decarbonisation efforts by promoting adoption of low carbon concrete, in alignment with SGBC's Global Warming Potential (GWP) Certification requirements for concrete.

CN2 Construction – Conservation, Resource Recovery and Waste Management

CN2.3 Conservation, Resource Recovery and Waste Management Requirement	New Building	Existing Building/ (A&Aworks w indep. Substructure)
(i) Existing building structures are retained partially or in full through asset enhancement initiative, adaptive reuse or conservation. a) Provision of Carbon optioneering study b) Retain foundation c) Retain existing building structures and recovery of demolished building materials (minimally concrete and steel) for reuse and/or recycling and waste management. *# Denotes point scoring for New building development redeveloped from existing buildings in brown field projects. Point scoring is not applicable for greenfield new building projects*	**Non Residential** 0.5 (i)(a)# 0.5 (i)(b)# 1.0 (i)(c)# **Residential** 0.5 (i)(a)# 0.5 (i)(b)# 1.0 (i)(c)#	*(Apply to existing bldgs > 30 yrs old undergoing major retrofitting works)* **Non Residential** N.A [0.5 pt (i)(a)] N.A [0.5 pt (i)(b)] N.A [1.0 pt (i)(c)] **Residential** N.A [0.5 pt (i)(a)] N.A [0.5 pt (i)(b)] N.A [1.0 pt (i)(c)]

Proposal

- To encourage and provide greater recognition to existing buildings which demonstrate efforts in retaining existing structures through asset enhancement initiative, adaptive reuse or conservation.

Desired outcome: Reduce environmental footprint of the built environment, promote sustainability, improve resilience, preserve cultural heritage, revitalise communities and support circular economy

CN2 Construction: Conservation, Resource Recovery and Waste Management

CN2.3 Conservation, Resource Recovery and Waste Management Requirement	New Building	Existing Building/ (A&A works w indep. Substructure)
(iii) Decarbonisation of construction processes (Example: Adoption of electric construction machinery and energy storage solutions)	**Non Residential** 1 pt **Residential** 1 pt	**Non Residential** N.A [1 pt] **Residential** N.A [1 pt]

Energy Efficiency Grant (EEG)

Greening the Construction Process

Co-funding energy-efficient construction equipment:



- Electric Crawler Crane
- Electric Excavator
- Electric Wheel Loader
- Battery Energy Storage System
- Hydraulic Excavator with energy-recovery

Base Tier:
Up to **S$30,000** per firm*

Advanced Tier:
Up to **S$350,000** per firm**

*70% and 30% of pre-approved EE equipment costs for **SMEs** and **non-SMEs** respectively

Grant quantum computed based on the lower of: i) **SME/non-SME support rate or ii) EE equipment's expected **lifetime carbon abatement**

https://go.gov.sg/energyefficiencygrant

Applicants can apply EEG through the Business Grants Portal (BGP)

Proposal:

- Introduce a new criterion (iii) Decarbonisation of construction processes
- To sunset Green and Gracious Builders Award (GGBA) recognition criterion

Desired outcome: Promote electrification and reduction in carbon emissions in construction and support builders in their Scope 1 & Scope 2 emissions reduction.

CN3 Fit Out

CN3.1 Green Lease	New Building	Existing Building/ (A&Aworks w indep. substructure)
A comprehensive Green Lease* (or equivalent) to be incorporated into the tenancy agreement, that establishes agreed levels of environmental performance between the landlord and the tenants for	**Non Residential**	**Non Residential**
(i) ≥ 70% of the net lettable area	0.5pt (i), 0.5 pt (i)(a)	1pt (i), 0.5 pt (i)(a) /0.5pt(i), 0.5 pt (i)(a)
(a) tenants' provision of annual electrical bills to landlord	1 pt (ii), 1 pt (ii)(a)	1.5pt (ii), 1 pt (ii)(a) /1.0 pt (ii), 1 pt (ii)(a)
(ii) 100% of net lettable area		
(a) tenants' provision of annual electrical bills to landlord	1.0 pt (iii)	0.5 pt (iii)
(iii) Base buildings with ≥ 20% NLA that require tenants to seek GMI certification through building owners'/landlord's green lease	0.5 pt (iv)	0.5pt (iv)
Performance		
(iv) ≥ 20% NLA where tenants with at least GMI Platinum and above certification	0.5 pt (v)	0.5pt (iv)
(v) Tenants with at least GMI Carbon Badge	**Residential**	**Residential**
	N.A	N.A

Proposal

- To recognise tenants' efforts in submission of annual electrical bills for landlords' direct monitoring and review for energy improvement plans and targets.
- To encourage and recognise exemplary sustainability performance through tenants' efforts in GMI certification to complement Green lease agreement with building owners

Desired outcome: To encourage greater partnership between landlord and tenants in shaping users' behaviour on energy consumption monitoring and reduction to drive environmental performance.

BCA Green Mark v7.0 Processes

Presented by:
Senior Consultant/ Jeffery Neng

Green Mark v7 — Process Improvements

“Less friction for you. Same rigour on quality.”

What we are rolling out in GM v7:

1. Bundle your building re-certifications for a significantly streamlined process
2. Get two extra years of GM certificate validity for your best-performing buildings
3. Skip a full Green Mark assessment when upgrading your chiller
4. Stop the repetitive verification of the same digital tools for every project

Green Mark v7 — Process Improvements

A focused review to streamline certification and reduce compliance burden

1

Green Mark Portfolio

Streamline recertification for building owners managing portfolios of similar buildings.

2

Extended GM Validity

5-year certificate validity for buildings demonstrating sustained energy performance.

3

Major Energy Use Changes

Lighter recertification path for existing buildings undergoing chiller retrofits.

4

Digitalisation

Standardised templates and streamlined digital tool adoption to streamline certification processes.

1. Green Mark Portfolio

Pro-enterprise batch recertification for building owners managing similar properties

Problem: Standalone assessments one by one for similar buildings — time-consuming and administratively heavy.

Bundle buildings into a single 'Parent' portfolio application, managed by one ESD representative. Speedier assessments and less administrative drag.

Key Conditions

- Applicable only for recertifications
- Managed by one ESD firm and one GM responsible person
- No rigid minimum property requirements — consult BCA directly to determine eligibility and agree on a customised timeline

Portfolio vs Standalone — Comparison

	Portfolio	Standalone
Criteria	GM In-ops or Energy Rating	GM In-ops or Energy Rating
Scope	Large portfolios of similar buildings. Customisable upon consultation	1 building at a time
ESD Rep	One ESD rep for all	Per building
Timeline	Customisable upon consultation	Flexible

Apply via GM Online (to be confirmed)

2. Extended 5-Year GM Validity

Rewarding buildings with sustained energy performance

Problem: Standard GM In-Ops recertification runs on a 3-year cycle — repetitive for consistently well-performing buildings.

Solution: An extended 5-year certification validity (vs the standard 3-year cycle) for Pathway 1 EUI projects that demonstrate sustained energy performance.

How to qualify:

Standard In-Ops GM
Meet all standard recertification requirements

+

EUI at 12 months
Meet EUI target for past 12 months

+

EUI at 24 months
Meet EUI target for past 24 months

+

EUI at 36 months
Meet EUI target for past 36 months

→

5-Year Validity
Extended certificate awarded

Note: Applicable only for Pathway 1 EUI projects under GM In-Operations.

Standard cycle: 3 years

Recertification required every 3 years

Extended cycle: 5 years ✓

2 extra years for sustained performers

2. Extended Validity — Worked Examples

Office Building, GFA 25,000m² (Pathway 1 EUI). Previous rating: Platinum

Scenario A — Standard 3-year cycle

EUI (12 months)	135
EUI (24 months)	141
EUI (36 months)	N/A
Threshold (Platinum)	140

Platinum · 3-Year Validity

EUI36 not available → Cannot confirm sustained performance

Scenario B — Qualifies for 5 years

EUI (12 months)	135
EUI (24 months)	130
EUI (36 months)	135
Threshold (Platinum)	140

Platinum · 5-Year Validity

All 3 EUI readings meet threshold → Extended validity granted

3. Existing Buildings with Major Energy Use Changes

Lighter recertification path for chiller retrofits and major energy upgrades

Problem: Existing buildings undergoing chiller retrofits are subjected to full GM:2021 assessment — high compliance burden that discourages energy-efficiency upgrades.

Solution: Existing buildings with major energy use changes can be recertified under the simpler GM In-Operations pathway.

Conditions to qualify:

Condition 1 — Previously GM Certified	Condition 2 — Fulfilled GM In-Ops Requirements	Condition 3 — No Major A&A Works Triggered
Building must hold a valid Green Mark certification under any version.	No commitments allowed — energy efficiency must be measured and demonstrated with actual data (e.g. EUI, TSE etc).	Retrofit must not involve building envelope alterations or GFA increases that trigger ES legislation for new developments.

Note 1: In GM v7, the certificate will state both the original full-certification version (e.g. GM:2015) and the current In-Ops version (e.g. GM:2021 In-Ops).
Note 2: Full GM recertification remains required if the works fall under ES of Buildings framework or involve building envelope alterations.

4. Digitalisation — Standardised Templates

Reducing administrative burden through consistent submission formats

Problem: Multiple correspondences extend submission timelines due to inconsistent document formats across consultants.

Solution: Standardised Excel templates (downloadable from BCA website) to ensure consistent submissions and reduce back-and-forth.

Suggested templates:

Excel Template	Excel Template	Excel Template	Excel Template
AC System (Chiller)	**AC System (DCS)**	**AC System (VRF)**	**Lighting**

Before → After

Current Process

- Consultant submits in own format
- Assessor requests clarification
- Multiple rounds of correspondence
- Extended project timelines

Future Process ✓

- Consultant uses BCA standard template
- Consistent format, faster review
- Fewer clarification rounds
- Streamlined processing times

4. Digitalisation — Digital Tool Adoption Framework

Streamlining approval of in-house and commercial digital tools for GM submissions

Problem: Assessors must verify the same digital tool assumptions for every single project — inefficient for all parties.

Solution: Firms submit a one-time declaration of compliance for their digital tool. Once approved by BCA, the tool can be used across all GM projects.

Streamlined approval process:

Step 1	Step 2	Step 3	Step 4	Step 5
Firm adopts digital tool (e.g. ETTV calculator)	**Assess tool assumptions** Internal review by firm	**Submit declaration to BCA** One-time compliance submission	**BCA reviews & approves** Assessment of tool validity	**Use tool across all GM projects** Subject to periodic audit

Verify once · Use across all GM projects · Subject to periodic BCA audit checks

Example: A firm adopts an in-house ETTV tool → submits declaration → BCA approves → tool used for all subsequent GM submissions without re-verification.

** Solutions are subject to periodic audit checks by BCA. BCA may suspend use if any deviation from approved assumptions is found.*

Summary — GM v7 Process Improvements

Less friction for you. Same rigour on quality.

1 Green Mark Portfolio

Batch recertification for similar buildings

- Bundle buildings under one application
- One ESD rep manages all
- Customisable timeline — consult BCA

Speedier assessments · Less admin drag

2 Extended 5-Year Validity

Reward sustained energy performers

- Pathway 1 EUI projects qualify
- Meet EUI targets at 12, 24 & 36 months
- No extra assessment cycle

3 years → 5 years for sustained performers

3 Major Energy Use Changes

Lighter path for chiller retrofits

- Previously GM-certified buildings eligible
- Recertify via GM In-Ops (not full GM)
- Demonstrate actual EUI — no commitments

No full reassessment for chiller upgrades

4 Digitalisation

Cut waste, not audit quality

- Standardised templates (AC, lighting)
- One-time digital tool declaration to BCA
- Approved tool reused across all projects

Verify once · Use many times