

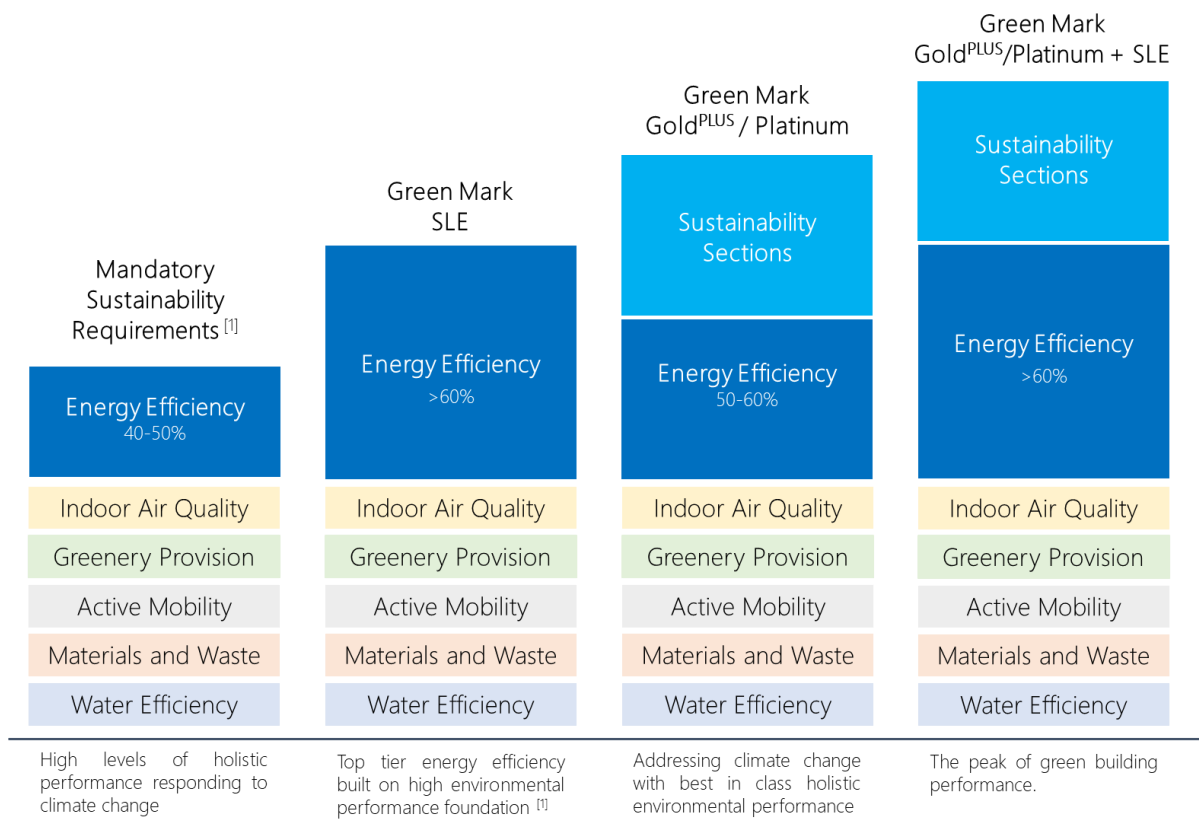
## **BCA GREEN MARK 2021 CERTIFICATION SCHEME**

The BCA Green Mark 2021 (GM: 2021) is an internationally recognised green building certification scheme tailored for the tropical climate. It encourages the industry and professionals to collaborate and develop green building solutions, raising Singapore's built environment's sustainability standards. As part of the review, BCA also consulted key industry stakeholders including the Trade Associations and Chambers such as the Real Estate Developers' Association of Singapore and the Association of Consulting Engineers Singapore. The BCA GM: 2021 aims to support in achieving the outcomes under the Singapore Green Building Masterplan:

- a. 80% of all buildings to be green (43.6% as of March 2021)
- b. 80% of new developments to be SLE buildings from 2030

### **BCA Green Mark 2021 (BCA GM: 2021)**

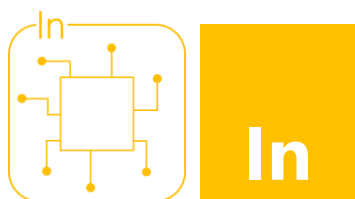
The revised BCA GM: 2021 certification scheme will raise energy efficiency requirements and environmental sustainability standards for new and existing buildings.



[1] Mandatory requirements are based on development control and building plan provisions for new buildings. For existing buildings under retrofit, the requirements would vary depending on the type and extent of the works being undertaken.

Under the BCA GM: 2021, there will not be separate criteria for various categories of buildings and developments such as shopping malls, hotels and schools. Buildings would need to meet higher minimum Energy Efficiency levels and score sufficient points in the Sustainability Sections to be certified under the BCA GM: 2021. The certification will be applicable to (a) new, (b) existing buildings and developments, and (c) “In Operation”, i.e., buildings and developments which have been certified under BCA Green Mark in the past.

**Sustainability Sections:**  
**Intelligence (In)**



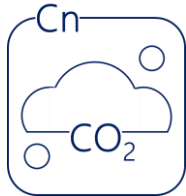
The Intelligence section assesses buildings on integrated digital technologies and systems, and data management environments within the building design, construction, retrofit and operation of the building, that enable fully integrated, automated, intelligent, and responsive buildings.

## Health and Well-being (Hw)



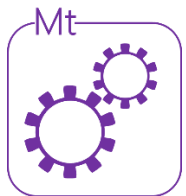
The Health and Well-being section scores buildings on how they are designed, retrofitted, constructed, and operated to facilitate the mental, physical, and social well-being of their occupants. This section has been jointly developed with the Ministry of Health Office for Healthcare Transformation (MOHT)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

## Whole Life Carbon (Cn)



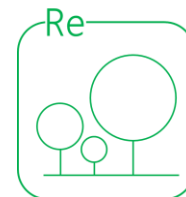
The Whole Life Carbon section scores buildings on their Whole Life Carbon performance based on international calculation methodologies, has a strong focus on embodied carbon (i.e. carbon footprint of the construction materials), use of sustainable construction methods, and the sustainable fitting-out of buildings. The section will also evaluate the plans, and delivery of those plans to transition the building towards zero carbon emissions.

## Maintainability (Mt)



The Maintainability section assesses buildings on their Design for Maintainability (DfM) strategies and smart Facilities Management technologies to optimise labour efficiency and cost effectiveness of downstream maintenance regimes.

## Resilience (Re)



The Resilience section evaluates buildings on their resilience and adaptability to climate change and their use of nature-based or natural climate solutions\* to protect, sustainably manage, and restore natural or modified ecosystems.

*\* These solutions involve natural processes to reduce or remove greenhouse gases and/or and help us adapt to the impacts of climate change.*

“The refreshed BCA Green Mark 2021 Scheme is an outcome of the co-creation process that has brought together many passionate stakeholders and industry experts. The scheme represents our shared vision for a green and sustainable future. We hope that it will help Singapore meet our sustainability targets in the Singapore Green Building Masterplan and create more opportunities for our green building practitioners. I am very encouraged by the passion and commitment by the green

building community, having had the opportunity to participate in this collaborative effort. Let us work together for a more sustainable future for Singapore.”

*- Architect Tang Kok Thye, President of the Singapore Green Building Council*

## BCA GM: 2021 Ratings

	Energy Savings					Intelligence	Health & Well-being	Whole Life Carbon	Maintainability	Resilience
	>50%	≥55%	≥60%	ZE		<ul style="list-style-type: none"> <li>15 points for each sustainability section</li> <li>≥10 points in a section to qualify for a badge for exemplary performance</li> </ul>				
<b>A. Full GM: 2021 certification</b>										
SLE (incl. ZE, PE)			✓	✓						N/A
Platinum SLE (incl. ZE, PE)			✓	✓						40 points
Gold <sup>PLUS</sup> SLE (incl. ZE, PE)			✓	✓						30 points
Platinum		✓								40 points
Gold <sup>PLUS</sup>	✓									30 points
<b>B. GM: 2021 In- Operation</b>										
	Energy Saving					Intelligence	Health & Well-being	Whole Life Carbon	Maintainability	Resilience
	≥40%	≥50%	≥55%	≥60%	ZE	Option to be assessed to qualify specific badges to demonstrate exemplary performance in operation				
SLE (incl. ZE, PE)			✓	✓						N/A
[Platinum/ Gold <sup>PLUS</sup> ] SLE (incl. ZE, PE)			✓	✓		<ul style="list-style-type: none"> <li>Water consumption</li> <li>Energy and Water Improvement Plan</li> <li>Cooling Towers Cycles of Concentration</li> <li>Indoor environmental Quality (IAQ Audit, CO2 Controls, Luminance and Noise Level)</li> <li>Occupancy Evaluation</li> <li>Waste audits</li> <li>Tenants/ Occupancy engagement</li> </ul>				
Platinum		✓								
Gold <sup>PLUS</sup>		✓								
Gold	✓									

## **Updated and aligned to international benchmarks and goals**

BCA GM: 2021 has been aligned to international sustainability goals and requirements such as the United Nation Sustainability Development Goals, World Green Building Council Health & Wellbeing Framework, global real estate reporting frameworks like Global Real Estate Sustainability Benchmark (GRESB) and recommendations under the Taskforce for Climate Related Financial Disclosures (TCFD)\*. Developers and building owners pursuing BCA GM: 2021 certification for their developments and buildings will continue to have access to green finance. The BCA GM: 2021 also focuses on environmental sustainability aspects -- such as whole-of-life carbon, health and well-being, climate resilience, design for maintainability and adoption of integrated digital solutions -- which promote outcomes that are aligned with the United Nations Sustainable Development Goals.

*\* The TCFD recommendations provide a framework for companies to disclose climate-related risks and opportunities relating to their ESG performance. BCA GM: 2021 promotes the use of TCFD recommendations in the evaluation of project-specific climate-related risks and opportunities.*

## **BCA Green Mark Super Low Energy (Residential Buildings) (BCA GM SLE: RB)**

As part of the BCA GM: 2021 certification scheme and to push for more SLE developments in Singapore, BCA and the industry created a new standard for super low energy residential buildings.

This standard emphasises passive design\* for the residential units and common areas, active designs\* through high performance, energy-efficient systems, smart energy management using sensors to control the use of services such as lighting, fans, air-conditioning and escalator operations, and the use of renewable energy such as solar power for common facilities such as swimming pools, gymnasiums and function rooms.

*\* Good design strategies (e.g., active and passive designs) can be cost-effective as they reduce the energy consumption of a building's cooling systems and lighting. Some good design strategies include optimising north-south orientation, window-to-wall ratio, shading at balconies, maximising natural / cross ventilation in the design of bedrooms and living rooms, and types of glass used.*