



BCA Green Mark for Retail

Version 1.0

To achieve Green Mark Certified

Non-Green Mark Base building

<p><u>ENERGY EFFICIENCY</u></p> <p>Minimum System’s Efficiency</p> <p>Full LED installation or Lighting Density to be 35% better than the baseline stated in Part 1-2 (a)</p> <p>Energy Policy & Management</p> <p>Annual disclosure of retail energy consumption data and energy use intensity (kWh/m²/year) to BCA.</p>
<p><u>SUSTAINABLE OPERATION & MANAGEMENT</u></p> <p>Sustainable Fit-out & Sustainable Operation</p> <p>Demonstration of use of at least one (1) type of sustainable products (SGBC Product certification or SGLS) in renovation and/or at least (1) sustainable consumable material in retail outlets. E.g. (packaging, wrappers, cups, utensils, napkins, etc.). To demonstrate at least 3 items meeting the minimum number in sustainable products and sustainable consumable material.</p>
<p><u>INDOOR ENVIRONMENTAL QUALITY</u></p> <p>Thermal Comfort</p> <p>Indoor dry-bulb temperature to be within 23 to 25 degrees celsius</p>
<p><u>OTHER GREEN FEATURES AND INNOVATIONS</u></p> <p>Display of Green Mark Award</p> <p>To display Green Mark certificate or Green Mark decal at a prominent location.</p>

Point Allocations – BCA Green Mark for Retail

Category	Points Allocations
Energy Related Requirements	
Part 1 : Energy Efficiency	
1-1 Air-Conditioning	14
1-2 Lighting System Efficiency	44
1-3 Energy Efficient Equipment	5
1-4 Energy Efficient Features	7
Subtotal (Part 1)	70
OTHER GREEN REQUIREMENTS	
Part 2 - Water Efficiency	
2-1 Water Efficient Fittings	9
2-2 Water Usage	4
2-3 Water Efficiency Management Plan	2
Subtotal (Part 2)	15
Part 3 - Sustainable Awareness & Operation	
3-1 Sustainable Retail Design	10
3-2 Sustainable Fit-out	20
3-3 Sustainable Operation	4
3-4 Sustainable Business Activities	8
3-5 Waste Management	6
Subtotal (Part 3)	48
Part 4 - Indoor Environmental Quality	
4-1 Lighting Quality	2
4-2 Thermal Comfort	4
Subtotal (Part 4)	6
Part 5 – Other Green Features	
5-1 Green Features	10
Subtotal (Part 5)	10
Total Points Allocated:	149

*For retail tenants operating with no provision of water or toilets, Part 2 – Water Efficiency may be excluded in the computation. The score for other parts will be pro-rated accordingly. Eg. Total points = (Summation of points from Part 1, 3, 4 & 5) X 1.1

Green Mark Award Rating

Green Mark Points	Green Mark Rating
95 and above	Green Mark Platinum
85 to < 95	Green Mark Gold ^{Plus}
75 to < 85	Green Mark Gold
50 to < 75	Green Mark Certified

Retail type	Description
Fashion	Clothing, Shoes, Apparel, Inner wear, etc
Specialty	Jewelry, Watch, Electrical, IT and Optical
General	7-11, Hairdresser, Chemist, Book and media (DVD, Music) shops, Medical Suites, Bank, and News-agents etc

Note:

- * Restaurants are covered under “BCA Green Mark Scheme for Restaurants”
- * Supermarkets are covered under “BCA Green Mark Scheme for Supermarkets”
- * Anchor tenants and other mixed traders will be assessed on the basis of the majority trading type

Pre-Requisite Requirements

1) Lighting System Efficiency

Retail type	Platinum	Gold ^{Plus}	Gold	Certified
Fashion	≤ 25 W/m ²	≤ 29 W/m ²	≤ 32.5 W/m ²	≤ 36 W/m ²
Specialty	≤ 35 W/m ²	≤ 40 W/m ²	≤ 45 W/m ²	≤ 50 W/m ²
General	≤ 17.5 W/m ²	≤ 20 W/m ²	≤ 22.5 W/m ²	≤ 25 W/m ²

For Gold^{Plus} and Platinum – no incandescent lightings or magnetic ballasts to be used

2) Sustainable Fit-out

For Gold^{Plus} and Platinum – use of low VOC paint and low VOC adhesive glue for renovation works (to comply with 3-2 (d) & (e))

3) Sustainable Operation

For Platinum – participation in green promotional activities annually (to comply with 3-4 (b))

4) Waste Management

For Platinum – dedicated containers for recycling and to set up recycling programme (to comply with 3-5 (a) & (b))

Energy Related Requirements

Part 1 - Energy Efficiency (Total Points: 70)	Green Mark Points																																								
<p>1-1 Air-Conditioning (14 points)</p> <p>Encourage the use of better efficient air-conditioning to minimize energy consumption</p> <p>(a) A/C system efficiency</p> <p>Encourage the use of better efficiency air-conditioned equipment to minimize the energy consumption. (System efficiency in kW/ton)</p> <p>(b) Zoning and controls</p> <p>Encourage the use of air-conditioning design practices that offer greater flexibility and making it easier to serve area with different usage efficiently, such as</p> <p>(i) Zoning of air-conditioning system to serve areas with different usage / occupancies needs</p> <p>(ii) Scheduling control to switch on and/or off the air-conditioning with some localized overwrite control where air-conditioning is needed beyond the scheduled period</p> <p>(iii) Areas with specialty occupancies having control capable of sensing space use and respond to space demand (Demand controlled ventilation)</p>	<p>(i) For tenants in building using Water Cooled Chilled-Water Plant</p> <table border="1"> <thead> <tr> <th colspan="2">Peak Building Cooling Load (RT)</th> <th rowspan="2">Points Awarded</th> </tr> <tr> <th>< 500</th> <th>≥ 500</th> </tr> </thead> <tbody> <tr> <td colspan="2">Efficiency (kW/RT)</td> <td></td> </tr> <tr> <td></td> <td>>0.70 to 0.75</td> <td>2</td> </tr> <tr> <td>>0.75 to 0.85</td> <td>>0.68 to 0.70</td> <td>4</td> </tr> <tr> <td>>0.70 to 0.75</td> <td>>0.65 to 0.68</td> <td>6</td> </tr> <tr> <td>≤0.70</td> <td>≤0.65</td> <td>8</td> </tr> </tbody> </table> <p>(ii) For tenants in building using Air Cooled Chilled-Water Plant or Unitary Air-Conditioners</p> <table border="1"> <thead> <tr> <th colspan="2">Peak Building Cooling Load (RT)</th> <th rowspan="2">Points Awarded</th> </tr> <tr> <th>< 500</th> <th>≥ 500</th> </tr> </thead> <tbody> <tr> <td colspan="2">Efficiency (kW/RT)</td> <td></td> </tr> <tr> <td>>1.0 to 1.1</td> <td>≤1.0</td> <td>2</td> </tr> <tr> <td>>0.85 to 1.0</td> <td>-</td> <td>4</td> </tr> <tr> <td>>0.78 to 0.85</td> <td>-</td> <td>6</td> </tr> <tr> <td>≤0.78</td> <td>-</td> <td>8</td> </tr> </tbody> </table> <p>(Up to 8 points)</p> <p>2 points each (Up to 6 points)</p>	Peak Building Cooling Load (RT)		Points Awarded	< 500	≥ 500	Efficiency (kW/RT)				>0.70 to 0.75	2	>0.75 to 0.85	>0.68 to 0.70	4	>0.70 to 0.75	>0.65 to 0.68	6	≤0.70	≤0.65	8	Peak Building Cooling Load (RT)		Points Awarded	< 500	≥ 500	Efficiency (kW/RT)			>1.0 to 1.1	≤1.0	2	>0.85 to 1.0	-	4	>0.78 to 0.85	-	6	≤0.78	-	8
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<p>1-2 Lighting System Efficiency (44 points)</p> <p>To encourage optimization of lighting system efficiency</p> <p>(a) Lighting power budget baseline</p> <table border="1"> <thead> <tr> <th>Retail type</th> <th>Baseline</th> </tr> </thead> <tbody> <tr> <td>Fashion</td> <td>≤ 36.0 W/m²</td> </tr> <tr> <td>Specialty</td> <td>≤ 50.0 W/m²</td> </tr> <tr> <td>General</td> <td>≤ 25.0 W/m²</td> </tr> </tbody> </table>	Retail type	Baseline	Fashion	≤ 36.0 W/m ²	Specialty	≤ 50.0 W/m ²	General	≤ 25.0 W/m ²	<p>1 point for every percentage improvement above the baseline</p> <p>Points awarded = 1 X (% improvement)</p> <p>(Up to 35 points)</p>																																
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<p>(b) Photo/Motion sensors for non-retail area (eg. Store, fitting rooms, etc.)</p> <p>(c) Controllability of lighting system</p> <p>Encourage the use of lighting control circuits to minimize energy usage, such as provision of the following control strategies</p> <p>(i) Zoning of lighting for different usage/ Location</p> <p>(ii) Dual circuit shop front (1 circuit with high intensity lights with a separate circuit for partial lighting of shop front after hours) or Timer switches on shop front lighting.</p> <p>(iii) Lighting control on general shop lighting (eg controls balancing lighting with ambient lighting levels.)</p>	<p>3 points</p> <p>2 points each (Up to 6 points)</p>
<p>1-3 Energy Efficient Equipment (5 points)</p> <p>Encourage the use of energy efficient equipment such as</p> <ul style="list-style-type: none"> ▪ Computers & monitors ▪ Laptops ▪ Fax machine ▪ Printers & copiers ▪ Inverter based refrigeration ▪ LED, LCD television or AV display ▪ Audio equipment ▪ Other energy efficient features 	<p>Points awarded based on numbers of energy efficient equipment (e.g. Energy Star)</p> <p>(Up to 5 points)</p>
<p>1-4 Energy Efficient Features (7 points)</p> <p>(a) Computation of energy consumption in the form of energy efficiency index EEI (total energy bills in a year divided by tenant area)</p> <p>(b) Encourage and recognize designs that provide good level of day lighting into retail areas. All daylit spaces should be integrated with automatic electric lighting control systems e.g. photocells</p> <p>(c) Use of on-site renewable energy system to offset operating costs.</p>	<p>2 points</p> <p>2 points</p> <p>Points scored based on % replacement of tenant's electricity by renewable energy source</p> <p style="margin-left: 40px;"> <10% replacement - 1 point >10% and <30% replacement – 2 points >30% replacement – 3 points </p>

Other Green Requirements

Part 2 - Water Efficiency (Total Points: 15) <i>*for tenants with no water usage, please see notes at pg. 1</i>	Green Mark Points
<p>2-1 Water Efficient Fittings (9 points)</p> <p>Encourage the use of water efficient fittings under Water Efficiency Labeling Scheme (WELS) or adopt equivalent water efficient flow-rate/flush volumes for water fittings.</p> <ul style="list-style-type: none"> ▪ Basin taps and mixers ▪ Showers ▪ Sink/Bib taps and mixers ▪ Urinals 	<p><u>Rating based on Water Efficiency Labeling Scheme (WELS)</u></p> <p>Good – 3 points Very Good – 6 points Excellent – 9 points</p> <p>Points awarded based on the number and water efficiency rating of the fitting type used (Up to 9 points)</p>
<p>2-2 Water Usage (4 points)</p> <p>Encourage the design of system that monitor and manage water consumption</p> <p>(a) Provision of meter to monitor the water usage</p> <p>(b) Monitoring of water consumption</p>	<p>2 points</p> <p>2 points</p>
<p>2-3 Water Efficiency Management Plan (2 points)</p> <p>Establish baseline water consumption performance and targets for improvements over the baseline. To show intent, measures and implementation strategies of water efficiency improvement plans over the next three years. Committed water savings accrued from proposed measures should be quantified. (PUB water efficiency management plan is acceptable as evidence)</p>	<p>2 points</p>
Part 3 - Sustainable Awareness & Operation (Total Points: 48)	Green Mark Points
<p>3-1 Sustainable Retail Design (10 points)</p> <p>Encourage the selection of more sustainable base building and the adoption of retail designs and materials that is environmentally friendly and sustainable.</p> <p>(a) Building is awarded with Green Mark certified or higher award.</p> <p>(b) Renovation consists of retaining at least 50% (by area) of the existing finishing for walls, flooring and ceilings. For heritage or renovation refit works.</p>	<p>Green Mark Certified award – 1 point Green Mark Gold award – 3 point Green Mark Gold^{plus} award – 5 point Green Mark Platinum award – 7 point (up to 7 points)</p> <p>3 points</p>

<p>3-2 Sustainable Fit-out (20 points)</p> <p>(a) Use of sustainable products in renovation such as:</p> <ul style="list-style-type: none"> • Environmental friendly products that are certified by approved local certification body or equivalent (SGBC Product Certification or SGLS) • Products with at least 30% recycled content by weight <p>(b) Green procurement policy Adoption of sustainable and environmental-friendly procurement and purchasing policy in the operation. (Eg. Reducing transport distances, packaging, or controlling packaging types by preselecting aware wholesale sources of supply.)</p> <p>(c) Sustainable consumable materials Selection of consumable materials that is environmentally friendly and sustainable such as the use of those materials which are recyclable/ recycled / non-disposable or readily degradable nature (Eg. Packaging, food wrappers, cups, utensils, napkins, etc)</p> <p>(d) Use of low VOC paints for renovation works</p> <p>(e) Use of low VOC adhesives glue for renovation works</p> <p>(f) Supply extra exhaust capacity and makeup air for areas where hazardous gases or chemicals may be present or used (e.g. nail salons, hair salons, etc)</p>	<p>Points awarded per feature item 2 point for high impact item 1 point for low impact item (Up to 6 points)</p> <p>2 points</p> <p>2 points awarded per feature item (up to 6 points)</p> <p>2 points</p> <p>2 points</p> <p>2 points</p>
<p>3-3 Sustainable Operation (4 points)</p> <p>(a) Operational Excellence: Produce a manual detailing shop opening, daily running and shut down procedures that minimize energy consumption. Policies regarding store supplied packaging and recycling procedures and policy</p> <p>(b) The plans and manual must be disseminated, actively implemented and regularly reviewed.</p>	<p>2 points</p> <p>2 points</p>
<p>3-4 Sustainable Business Activities (8 points)</p> <p>(a) Sustainable Marketing: Use of recycled collaterals or incorporating sustainability values in marketing strategies.</p> <p>(b) Sustainability promotional activities - committed to Earth Hour Day or World Environment Day activities in the mall, or another publicity activity of similar kind, would not include just turning off lights on earth hour day.</p> <p>(c) Include environmentally friendly products as part of sales product lineup</p>	<p>2 points</p> <p>2 points</p> <p>2 points</p>

<p>(d) Privileges for customers who bring their own shopping bags</p>	<p>2 points</p>
<p>3-5 Waste Management (6 points)</p> <p>(a) Installation of a dedicated container readily accessible by staff and customers to facilitate recycling.</p> <p>(b) Promote and encourage waste minimization and recycling among staff and customers through various avenues including regular briefings, meetings, putting up waste minimization and recycling posters at strategic locations. Needs to set up comprehensive recycling and reuse programme with proper documentation of efforts.</p> <p>(c) In store packaging management – Giving customers the options of no packaging or supplying packaging from recycled product</p>	<p>2 points</p> <p>2 points</p> <p>2 points</p>
<p>Part 4 – Indoor Environmental Quality (Total Points: 6)</p>	<p>Green Mark Points</p>
<p>4-1 Lighting Quality (2 points)</p> <p>To encourage good workplace lighting quality to promote productivity and comfort</p> <p>Use of High frequency ballast</p>	<p>All applicable areas in the entire retail area that are served by fluorescent luminaries</p> <p>> 60% - 1 point</p> <p>> 90% - 2 point</p> <p>(Up to 2 points)</p>
<p>4-2 Thermal Comfort (4 points)</p> <p>(a) Indoor dry-bulb temperature should be within 23 to 25 degrees celsius</p> <p>(b) Measures and reminders to maintain air-conditioning set-point to 24 Degrees Celsius or higher for all air-conditioned areas</p>	<p>2 points</p> <p>2 points</p>
<p>Part 5 – Other Green Features (Total Points: 10)</p>	<p>Green Mark Points</p>
<p>5-1 Green Features and Innovations</p> <p>To encourage the use of other green features which are innovative or/and have positive environmental impact.</p> <p>Examples :</p> <ul style="list-style-type: none"> • Use of greenery to create a more conducive environment. • Innovations with demonstrable carbon or energy reducing outcomes. • Innovation encapsulating social sustainability values. • Educational corners / Green Corners 	<p>Points awarded for each item:</p> <p>2 points for high impact item</p> <p>1 point for medium impact item</p> <p>0.5 point for low impact item</p> <p>(Up to 10 Bonus Points)</p>