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# BCA Green Mark for Restaurants

**Point Allocations - BCA Green Mark for Restaurants**

Category		Point Allocations	
<b>(I) Energy Related Requirements</b>			
<b>Minimum 20 points</b>	<b>Part 1 : Energy Efficiency</b>		
	1-1 Energy Efficiency	5	
	1-2 Electricity Usage	2	
	1-3 Air-conditioning	10	
	1-4 Lighting	16	
	1-5 Kitchen Equipment	10	
	1-6 Energy Efficient Features	7	
	<b>Category Score for Part 1 – Energy Efficiency</b>		<b>50</b>
<b>(II) Other Green Requirements</b>			
	<b>Part 2 : Water Efficiency</b>		
	2-1 Water Efficient Fittings	11	
	2-2 Water Usage	2	
	2-3 Water Efficient Practices	4	
	2-3 Water Efficiency Improvement Plans	3	
	<b>Category Score for Part 2 – Water Efficiency</b>		<b>20</b>
	<b>Part 3 : Sustainable Management &amp; Operation</b>		
	3-1 Sustainable Consumable Materials	6	
	3-2 Sustainable Material Selection	5	
	3-3 F&B Operation & Maintenance	6	
	3-4 Post Occupancy Evaluation	4	
	3-5 Waste Management	5	
	3-6 Greenery	2	
	3-7 Public Transport Accessibility	2	
	<b>Category Score for Part 3 – Sustainable Management &amp; Operation</b>		<b>30</b>
	<b>Part 4 : Indoor Environmental Quality</b>		
	4-1 IAQ Performance	6	
	4-2 Indoor Air Pollutants	5	
	4-3 Lighting Quality	4	
	4-4 Thermal Comfort	4	
	<b>Category Score for Part 4 – Indoor Environmental Quality</b>		<b>19</b>
	<b>Part 5 : Other Green Features</b>		
	5-1 Green Features & Innovations	6	
<b>Category Score for Part 5 – Other Green Features</b>		<b>6</b>	
<b>Total Points Allocated :</b>		<b>125</b>	

### BCA Green Mark Award Rating

Green Mark Points	Green Mark Rating
95 and above	Green Mark Platinum
85 to < 95	Green Mark Gold <sup>Plus</sup>
75 to < 85	Green Mark Gold
50 to < 75	Green Mark Certified

**Elective Requirements**

Part 1 - Energy Efficiency	Green Mark Points
<p><b><u>1-1 Energy Efficiency</u></b></p> <p>(a) Encourage selection of energy efficient base building</p> <p style="text-align: center;"><u>Option A</u></p> <p>Building demonstrate 30% energy savings over last three years</p> <p style="text-align: center;">Or</p> <p style="text-align: center;"><u>Option B</u></p> <p>Calculating the restaurant's Energy Efficient Index (EEI)</p> <p>If the restaurant's EEI (exclude kitchen equipments) are 330 kWh/m<sup>2</sup>/year or better</p> <p>(b) Encourage restaurants with energy efficiency improvement plan</p> <p>Setting target to improve outlet energy performance.</p> <p>To show intent, measures and implementation strategies of energy efficiency improvement plans over the next three years.</p> <p>Committed energy savings accrued from proposed measures should be quantified.</p>	<p style="text-align: center;"><u>Option A</u></p> <p style="text-align: center;">3 points</p> <p style="text-align: center;">Or</p> <p style="text-align: center;"><u>Option B</u></p> <p style="text-align: center;">1 point</p> <p style="text-align: center;">2 points</p> <p style="text-align: center;">2 points</p>
<p><b><u>1-2 Electricity Usage</u></b></p> <p>Encourage the design of system that monitor and manage electricity consumption</p> <p>Provision of sub-meter to monitor electricity use of different services such as air-conditioning, lighting, kitchen equipment, etc.</p> <p>Monitoring of electricity consumption.</p>	<p style="text-align: center;">1 point</p> <p style="text-align: center;">1 point</p>
<p><b><u>1-3 Air-conditioning</u></b></p> <p>Encourage the use of better efficient air-conditioning to minimize energy consumption</p> <p>(a) A/C system efficiency</p> <p>Use of air-conditioning system which meet the</p>	

<p>efficiency requirement of the air-conditioning system stated in SS 530</p> <p>(b) Zoning and controls</p> <p>(i) Encourage the use of air-conditioning design practices that offer greater flexibility and making it earlier to serve area with different usage efficiently, such as the following</p> <ul style="list-style-type: none"> <li>• Zoning of air-conditioning system to serve areas with different usage/ occupancies needs</li> <li>• Scheduling control to switch on and/or off the air-conditioning with some localized override control where air-conditioning is needed beyond the scheduled period</li> </ul> <p>(ii) If sensors or similar automatic control devices are used to regulate outdoor air flow rate to maintain the concentration of carban dioxide (CO<sub>2</sub>) inside the restaurant not more than 700ppm above the outdoor CO<sub>2</sub></p> <p>(iii) Positive pressurization of dinning areas to prevent infiltration of hot humid air and pollutants from outside</p>	<p style="text-align: center;">1point</p> <p style="text-align: center;">(Up to 5 points)</p> <p style="text-align: center;">2 points</p> <p style="text-align: center;">2 points</p>
<p><b><u>1-4 Lighting</u></b></p> <p>Encourage the use of better efficient lighting to minimise energy consumption from lighting usage while maintaining proper lighting level.</p> <p>(a) Lighting power budget</p> <p style="padding-left: 20px;">Baseline = Maximum lighting power budget stated in SS530</p> <p>(b) Lighting controls</p> <p style="padding-left: 20px;">Encourage the use of lighting control circuits to minimize energy usage, such as provision of the following control strategies</p> <p style="padding-left: 40px;">(i) Zoning of lighting for different usage/ location</p>	<p style="text-align: center;">0.3 point for every percentage improvement above the baseline</p> <p style="text-align: center;">Points awarded = 0.3 x (% improvement)</p> <p style="text-align: center;">(up to 12 points)</p> <p style="text-align: center;">(Up to 4 points)</p>

<p>(ii) Scheduling control to switch on and/or off the lightings with some localized override control where lighting is needed beyond the scheduled period</p> <p>(iii) Controllability of lighting system to suit staff need where applicable</p>	
<p><b><u>1-5 Kitchen Equipment</u></b></p> <p>Encourage the use of energy efficient kitchen equipment to save energy.</p> <p>Use of energy efficient kitchen equipment such as</p> <ul style="list-style-type: none"> <li>• Deep Fryers</li> <li>• Grills</li> <li>• Ovens</li> <li>• Freezers</li> <li>• Cold rooms</li> </ul>	<p>Points awarded based on the number and energy efficiency rating of the equipment use</p> <p style="text-align: center;">(up to 10 points)</p>
<p><b><u>1-6 Energy Efficient Features</u></b></p> <p>Encourage the use of energy efficient features which are innovative and/or have positive environmental impact.</p> <p>Examples :</p> <ul style="list-style-type: none"> <li>■ Use of heat exchanger</li> <li>■ Use of motion sensors for areas with un-frequent usage</li> </ul>	<p style="text-align: center;">2 points for high impact item</p> <p style="text-align: center;">1 point for medium impact item</p> <p style="text-align: center;">0.5 point for low impact item</p> <p style="text-align: center;">(Up to 7 points)</p>
<p style="text-align: center;"><b>PART 1 – ENERGY EFFICIENCY CATEGORY SCORE :</b></p>	

Part 2 – Water Efficiency	Green Mark Points
<p><b><u>2-1 Water Efficient Fittings</u></b></p> <p>Encourage the use of water efficient fittings covered under the Water Efficiency Labelling Scheme (WELS) or adopt equivalent water efficient flow rates for water fittings</p> <p>(a) Basin Taps and Mixers                      (b) Flushing Cistern                      (c) Showers                      (d) Sink/Bib Taps and Mixers                      (e) Urinals                      (f) All other water fittings</p> <p><i>Note:                      A PUB Water Efficient Building would be entitled to 4 points</i></p> <p>Use of Water Efficient Equipment such as:-</p> <ul style="list-style-type: none"> <li>• Pre-rinse spray valve (&lt; 6 L/ min)</li> <li>• Dishwasher</li> <li>• Air-cooled ice-making machine</li> </ul>	<p>Rating based on Water Efficiency Labelling Scheme (WELS)</p> <p>Very Good – 4 points                      Excellent – 6 points</p> <p>Points awarded based on the number and water efficiency rating of the fitting type used</p> <p>(up to 5 points)</p>
<p><b><u>2-2 Water Usage</u></b></p> <p>Provide the use of private-metering and leak detection system for better control and monitoring</p> <p>(a) Provision of private meters for major water uses (e.g. pre-rinse spray valve, dishwasher, kitchen and common toilets)</p> <p>(b) To keep track of water consumption</p>	<p>1 point</p> <p>1 point</p>
<p><b><u>2-3 Water Efficient Practices</u></b></p> <p>Adopt water efficient practices such as:-</p> <ul style="list-style-type: none"> <li>• Placing frozen food in the refrigerator the night before using it for thawing purposes;</li> <li>• Displaying water conservation posters in the premises;</li> <li>• Involvement of patrons by displaying water conservation cards that inform patrons that water will only be served on request.</li> </ul>	<p>(up to 4 points)</p>



<b>Part 3 – Sustainable Management &amp; Operation</b>	<b>Green Mark Points</b>
<p><b><u>3-1 Sustainable Consumable Materials</u></b></p> <p>Encourage the selection of consumable materials that is environmentally friendly and sustainable, such as the use of those materials which are recyclable/ recycled / non-disposable</p> <ul style="list-style-type: none"> <li>• Food wrappers</li> <li>• Food containers</li> <li>• Carry out bags</li> <li>• Cups</li> <li>• Plates</li> <li>• Serving utensils</li> <li>• Toilet rolls</li> <li>• Napkins/servettes</li> </ul>	<p>(up to 6 points)</p>
<p><b><u>3-2 Sustainable Material Selection</u></b></p> <p>Encourage the adoption of materials that are environmentally friendly and sustainable.</p> <p>(a) Maintain at least 50% (by volume) of the existing furniture or equipment</p> <p>(b) Use of sustainable products in renovation such as :</p> <ul style="list-style-type: none"> <li>• Environmental friendly products that are certified under local certification body</li> <li>• Products with at least 30% recycled content by weight or volume</li> </ul>	<p>2 points</p> <p>1 point for high impact item 0.5 point for low impact item (Up to 3 points)</p>
<p><b><u>3-3 F&amp;B Operation &amp; Management</u></b></p> <p>Commitment from tenant – environmental policy</p> <p>A green guide for the restaurant staff should be disseminated. Best practices to reduce energy use, water use and maintain a good indoor environment should be documented in this green guide. To demonstrate evidences of restaurant staff involvement in environmental sustainability.</p> <p>Food safety management – according to NEA’s grading system</p>	<p>1 point</p> <p>2 points</p> <p>Graded A - 3 points</p>

<p><b><u>3-4 Post Occupancy Evaluation</u></b></p> <p>Conduct yearly post occupancy evaluation to assess staff’s satisfaction with the indoor environmental conditions.</p> <p>Provide customer feedback survey form in obvious location to facilitate customer to give feedback on services, environment, etc</p> <p>List of corrective actions taken following the staff and customer feedback.</p>	<p>2 points</p> <p>1 point</p> <p>1 point</p>
<p><b><u>3-5 Waste Management</u></b></p> <p>Encourage recycling facilities within the restaurant to reduce wastage.</p> <p>Provision of recycling facilities for</p> <ul style="list-style-type: none"> <li>• Food waste</li> <li>• Used frying oil</li> </ul> <p>Waste collecting and monitoring</p> <p>Waste management improvement plan</p>	<p>(up to 3 points)</p> <p>1 point</p> <p>1 point</p>
<p><b><u>3-6 Greenery</u></b></p> <p>Encourage greater use of greenery to create a more conducive office environment such as planter or potted plants</p>	<p>Extent of Coverage : At least 1% of the F&amp;B area 1 point</p> <p>Extent of Coverage : At least 2% of the F&amp;B area 2 points</p>
<p><b><u>3-7 Public Transport Accessibility</u></b></p> <p>Promote the use of public transport or bicycles to reduce pollution from individual car use.</p> <p>(a) Good access to nearest MRT/LRT or bus stops.</p> <p>(b) Adequate bicycles parking lots.</p>	<p>1 point</p> <p>1 point</p>
<p align="center"><b>PART 3 – ENVIRONMENTAL PROTECTION</b></p> <p align="center"><b>CATEGORY SCORE :</b></p>	

Part 4 – Indoor Environmental Quality	Green Mark Points
<p><b><u>4-1 IAQ Performance</u></b></p> <p>Encourage and recognize good indoor air quality (IAQ) to ensure the comfort and wellbeing of office occupants</p> <p>(a) SOP to ensure good indoor environment through proper cleaning practice and schedule and hygiene practice</p> <p>(b) Prevent migration of odours and other pollutants from the kitchen to the dining areas by implementing effective kitchen exhaust.</p> <p>(c) Provision of odour removal system for toilets and dining areas</p>	<p>2 points</p> <p>2 points</p> <p>2 points</p>
<p><b><u>4-2 Indoor Air Pollutants</u></b></p> <p>Minimise airborne contaminants, mainly from inside sources to promote a healthy indoor environment.</p> <p>Use and purchase of environmental- friendly products such as</p> <ul style="list-style-type: none"> <li>• cleaning products recognised under local certification body</li> <li>• Soap for customers</li> </ul> <p>Setting of environmental-friendly procurement and purchasing policy</p>	<p>(Up to 4 points)</p> <p>1 point</p>
<p><b><u>4-3 Lighting Quality</u></b></p> <p>To encourage good workplace lighting quality to promote safety and productivity and comfort of kitchen staff</p> <p>Lighting level for kitchen – 300lux</p> <p>To encourage and recognize designs that provides good level of day lighting for dining customers</p>	<p>2 points</p> <p>2 points</p>
<p><b><u>4-4 Thermal Comfort</u></b></p> <p>Ensure thermal comfort of office occupants</p> <p>(a) Comfort level Comply with SS 553</p>	

(b) Controllability of temperature	2 points  2 points
<b>PART 4 – INDOOR ENVIRONMENTAL QUALITY CATEGORY SCORE :</b>	

<b>Part 5 – Other Green Features</b>	<b>Green Mark Points</b>
<p><b><u>5-1 Green Features and Innovations</u></b></p> <p>Encourage the use of other green features which are innovative and/or have positive environmental impact.</p> <p>Examples :</p> <ul style="list-style-type: none"> <li>■ CO2 monitoring of kitchen area to detect leakage of CO2 from CO2 cylinders used in making carbonated drinks</li> <li>■ Air sterilization system to limit the level of bacteria, mould and other bio-contaminants</li> <li>■ Treatment of kitchen exhaust with green technologies such as UVC emitters, electronic air filtration, etc</li> <li>■ Green wall</li> <li>■ etc</li> </ul>	<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 6 points)</p>
<b>PART 5 – OTHER GREEN FEATURES CATEGORY SCORE :</b>	

## Green Mark Score

$$\text{Green Mark Score} = \sum \text{Category Score [ (Part 1 – Energy Efficiency) + (Part 2 – Water Efficiency) + (Part 3 – Sustainable Management & Operation) + (Part 4 – Indoor Environmental Quality) + (Part 5 – Other Green Features)]}$$