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# **BCA Green Mark for Office Interior Version 1.1**

## Point Allocations - BCA Green Mark for Office Interior

Category		Point Allocations	
<b>(I) Energy Related Requirements</b>			
<b>Minimum 25 points</b>	<b>Part 1 : Energy Efficiency</b>		
	1-1 Energy Efficiency	4	
	1-2 Electricity Usage	2	
	1-3 Air-conditioning	6	
	1-4 Lighting	16	
	1-5 Office Equipment	10	
	1-6 Energy Efficient Features	7	
	<b>Category Score for Part 1 – Energy Efficiency</b>		<b>45</b>
<b>(II) Other Green Requirements</b>			
<b>Minimum 25 points</b>	<b>Part 2 : Water Efficiency</b>		
	2-1 Water Efficient Fittings	7	
	2-2 Water Usage	2	
	2-3 Water Efficiency Improvement Plan	1	
	<b>Category Score for Part 2 – Water Efficiency</b>		<b>10</b>
	<b>Part 3 : Sustainable Management &amp; Operation</b>		
	3-1 Sustainable Office Design	8	
	3-2 Sustainable Material Selection	5	
	3-3 Office Operation	3	
	3-4 Post Occupancy Evaluation	3	
	3-5 Waste Management	5	
	3-6 Greenery	4	
	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	8	
	4-2 Indoor Air Pollutants	5	
	4-3 Lighting Quality	6	
	4-4 Thermal Comfort	4	
	4-5 Internal Noise Level	2	
<b>Category Score for Part 4 – Indoor Environmental Quality</b>		<b>25</b>	
<b>Part 5 : Other Green Features</b>			
5-1 Green Features & Innovations	5		
<b>Category Score for Part 5 – Other Green Features</b>		<b>5</b>	
<b>Total Points Allocated :</b>		<b>115</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

### Prerequisite Requirements

To be eligible for Green Mark for Office Interior, the office's temperature setting should not be lower than 24 °C unless due to specific needs which will be reviewed on a case by case basis.

To be eligible for Green Mark Gold<sup>PLUS</sup> or Platinum rating, the office has to meet the following pre-requisite requirements:

#### For Green Mark Gold<sup>PLUS</sup> Rating

- Energy Efficiency Index (EEI) of 80Kwh/m<sup>2</sup>/year or lower

*Note: For office where each staff is occupying office space of 12 square meter or lower, higher EEI will be considered on a case by case basis, but the EEI should not be more than 90 Kwh/m<sup>2</sup>/year*

- Lighting power budget of 11 W/m<sup>2</sup> or lower

#### For Green Mark Platinum Rating

- Energy Efficiency Index (EEI) of 70Kwh/m<sup>2</sup>/year or lower

*Note: For office where each staff is occupying office space of 12 square meter or lower, higher EEI will be considered on a case by case basis, but the EEI should not be more than 80 Kwh/m<sup>2</sup>/year*

- Lighting power budget of 10 W/m<sup>2</sup> or lower
- Setting of sustainable and environmentally friendly procurement and purchasing policy and use and purchase of sustainable and environmentally friendly products for office stationery and cleaning products

#### Note:

1. EEI calculation is based on 55 hours working week and excludes air-conditioning usage which is normally provided by landlord.
2. Office interior assessment also excludes server rooms.



<p>areas with different usage/ occupancy needs</p> <p>(ii) 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</p> <p>(iii) Meeting rooms, pantry, etc with specialty occupancies having controls capable of sensing space use and responding to space demand</p>	
<p><b><u>1-4 Lighting</u></b></p> <p>Encourage the use of more efficient lighting to minimise energy consumption from lighting usage while maintaining proper lighting level.</p> <p>(a) Lighting power budget</p> <p>Baseline = Maximum lighting power budget stated in SS530</p> <p>(b) Lighting controls</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/ locations</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) Use of dimmers, i.e. so that lighting can be dimmed during lunch hours</p> <p>(iv) Minimize use of general lighting level by using task lighting</p>	<p>0.3 point for every percentage improvement above the baseline</p> <p>Points awarded = 0.3 x (% improvement)</p> <p>(up to 12 points)</p> <p>Up to 4 points</p>

<p><b><u>1-5 Office Equipment</u></b></p> <p>Encourage the use of energy efficient office equipment to save energy.</p> <p>Use of energy efficient office equipment such as</p> <ul style="list-style-type: none"> <li>• Computer</li> <li>• Monitor</li> <li>• Fax machine</li> <li>• Printer</li> <li>• Photocopier</li> </ul>	<p>Points awarded based on the number and energy efficiency rating of the equipment use</p> <p>(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 overnight equipment management software to pre-set, back-up and shut down computer at night.</li> <li>■ Use of solar panel to replace electricity</li> <li>■ Use of heat recovery system</li> <li>■ Use of motion sensors for areas with infrequent usage</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 7 points)</p>
<p style="text-align: center;"><b>PART 1 – ENERGY EFFICIENCY CATEGORY SCORE :</b></p>	

<b>Part 2 – Water Efficiency</b>	<b>Green Mark Points</b>
<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 flowrates for water fittings</p> <p>(a) Basin Taps and Mixers                      (b) Flushing Cistern                      (c) Showers                      (d) Sink/Bib Taps and Mixers                      (e) All other water fittings</p>	<p>Rating based on Water Efficiency Labelling Scheme (WELS)</p> <p>Very Good – 4 points                      Excellent – 7 points</p> <p>Points awarded based on the number and water efficiency rating of the fitting type used</p>
<p><b><u>2-2 Water Usage</u></b></p> <p>Encourage the design of system that monitors and manages water consumption</p> <p>Provision of meter to monitor the water usage of each floor</p> <p>Monitoring of water consumption</p>	<p>1 point</p> <p>1 point</p>
<p><b><u>2-3 Water Efficiency Improvement Plans</u></b></p> <p>Targets to improve office water performance should be set. To show intent, measures and implementation strategies of water efficiency improvement plans over the next three years.</p> <p>Committed water savings accrued from proposed measures should be quantified.</p>	<p>1 point</p>
<p style="text-align: center;"><b>PART 2 – WATER EFFICIENCY                      CATEGORY SCORE :</b></p>	

Part 3 – Sustainable Management & Operation	Green Mark Points						
<p><b><u>3-1 Sustainable Office Design</u></b></p> <p>Encourage the selection of more sustainable base building and the adoption of office designs and materials that are environmentally friendly and sustainable.</p> <p>(a) Building is awarded with Green Mark Gold Award or higher.</p> <p>(b) Office renovation conserves at least 50% (by area) of the existing finishing for walls, flooring and ceilings</p> <p>(c) Office layout design encourages open, flexible and maximal space usage such as</p> <ul style="list-style-type: none"> <li>• Provision of open and flexible layout with minimum enclosed space</li> <li>• Provision of space saver, mobile station, etc</li> </ul>	<p style="text-align: center;">Green Mark gold award - 1 point Green Mark gold<sup>PLUS</sup> award - 2 points Green Mark platinum award - 3 points</p> <p style="text-align: center;">(up to 3 points)</p> <p style="text-align: center;">2 points</p> <p style="text-align: center;">3 points</p>						
<p><b><u>3-2 Sustainable Material Selection</u></b></p> <p>Encourage the adoption of office materials that are environmentally friendly and sustainable.</p> <p>(a) Maintain at least 50% (by volume) of the existing furniture</p> <p>(b) Use of environmental friendly products that are certified by approved local certification body.</p>	<p style="text-align: center;">2 points</p> <p style="text-align: center;">Points scored based on the weightage and the extent of coverage &amp; impact</p> <p style="text-align: center;">1 point for high impact item 0.5 point for low impact item (Up to 3 points)</p> <p style="text-align: center;">Weightage based on the extent of environmental friendliness of products</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Good</td> <td style="text-align: center;">Very Good</td> <td style="text-align: center;">Excellent</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1.5</td> <td style="text-align: center;">2</td> </tr> </table>	Good	Very Good	Excellent	1	1.5	2
Good	Very Good	Excellent					
1	1.5	2					
<p><b><u>3-3 Office Operation</u></b></p> <p>Commitment from tenant – environmental policy</p> <p>A green guide for office occupants should be disseminated. Best practices pertaining to reduction</p>	<p style="text-align: center;">1 point</p> <p style="text-align: center;">2 points</p>						



<p>of energy use, water use and maintenance of a good indoor environment should be documented in this green guide. Evidence of office occupants' involvement in environmental sustainability should also be demonstrated.</p>	
<p><b><u>3-4 Post Occupancy Evaluation</u></b></p> <p>Conduct yearly post occupancy evaluation to assess occupant's satisfaction with the indoor environmental conditions.</p> <p>List of corrective actions taken following the post occupancy evaluation.</p>	<p>2 points</p> <p>1 point</p>
<p><b><u>3-5 Waste Management</u></b></p> <p>Encourage recycling facilities within office to reduce waste going to landfill.</p> <p>Provision of recycling facilities (for recycling glass, paper, metal as well as one for non-recyclable waste)</p> <ul style="list-style-type: none"> <li>(i) At a central location</li> <li>(ii) At every floor or strategic locations to encourage recycling</li> </ul> <p>Waste collecting and monitoring</p> <p>Waste management improvement plan</p>	<p>1 point</p> <p>2 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</p> <p>(a) Sky garden, roof garden or common recreation areas for staff with greenery</p> <p>(b) Planter or potted plants</p>	<p>Up to 2 points</p> <p>Extent of Coverage : At least 1% of the office area 1 point</p> <p>Extent of Coverage : At least 2% of the office 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><b>PART 3 – ENVIRONMENTAL PROTECTION</b></p> <p><b>CATEGORY SCORE :</b></p>	

Part 4 – Indoor Environmental Quality	Green Mark Points
<p><b>4-1 IAQ Performance</b></p> <p>Encourage and recognize good indoor air quality (IAQ) to ensure the comfort and well-being of office occupants</p> <p>(a) Conduct IAQ audit once every three years and ensure that the following recommended IAQ parameters are met</p> <p><i>Note : IAQ parameter recommended by NEA's Guidelines for Good Indoor Air Quality in Office Premises or Singapore Standard Code of Practice for "Indoor Air Quality for Air-conditioned Buildings"</i></p> <p>(b) Develop an active IAQ management programme</p> <p>(c) CO2 monitoring to ensure delivery of sufficient/ minimum outside air requirements</p>	<p>5 points</p> <p>1 point</p> <p>2 points</p>
<p><b>4-2 Indoor Air Pollutants</b></p> <p>Minimise airborne contaminants, mainly from inside sources to promote a healthy indoor environment.</p> <p>Use and purchase of sustainable and environmentally friendly products such as</p> <ul style="list-style-type: none"> <li>• cleaning products recognised by approved local certification body or equivalent</li> <li>• environmental -friendly janitorial paper products</li> <li>• Office stationery</li> </ul> <p>Setting of sustainable and environmentally friendly procurement and purchasing policy</p>	<p>Up to 4 points</p> <p>1 point</p>
<p><b>4-3 Lighting Quality</b></p> <p>To encourage good workplace lighting quality to promote productivity and comfort of occupants</p> <p>(a) Lighting level.</p> <p>(b) Controllability of lighting system</p> <p>(c) High frequency ballasts Improve workplace lighting quality by avoiding low frequency flicker associated with fluorescent</p>	<p>2 points</p> <p>Extent of Coverage : At least 90% of occupants able to adjust lighting control to suit their task needs and preference 2 point</p> <p>Extent of Coverage : At least 90% of all applicable areas that are served by fluorescent luminaries 2 points</p>



Part 5 – Other Green Features	Green Mark Points
<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>• Use of printing access through swipe access card to help minimize unnecessary printing.</li> <li>• Provision of internal staircase to discourage usage of lifts</li> <li>• Use of non-disposable cups for meetings and staff</li> <li>• Provision of green walls</li> <li>• Use of tele-conferencing to reduce travelling needs</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 5 points)</p>
<p><b>PART 5 – OTHER GREEN FEATURES CATEGORY SCORE :</b></p>	

### Green Mark Score

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