



BCA-HPB Green Mark for Healthier Workplaces

GM HW: 2018

(FOR PILOT)

This pilot version of the criteria is for reference only. The GM HW: 2018 criteria will be made available in end-Sep 2018. Announcement will be made via an industry circular on Corenet (www.corenet.gov.sg).

Revision Log

Revision	Description	Date Effective
R0	Pilot version	14/05/2018

Framework – BCA-HPB Green Mark for Healthier Workplaces (GM HW: 2018)

To achieve Green Mark Award



Pre-requisite Requirement
All relevant pre-requisite requirements for the specific Green Mark Rating are to be complied with

Green-Related Requirements



Health and Other Green-Related Requirements

- Section 1 – SUSTAINABLE DESIGN & MANAGEMENT**
- 1.1 Base Building Performance
 - 1.2 Green Lease
 - 1.3 Integrative Design Process
 - 1.4 Environmental Credentials
 - 1.5 Environmental Policy, Targets and Action Plan
 - 1.6 Sustainable Procurement
 - 1.7 Occupant Engagement
- SECTION 2 – ENERGY AND RESOURCE MANAGEMENT**
- 2.1 Lighting Efficiency
 - 2.2 Lighting Zoning and Controls
 - 2.3 Plug Load Efficiency
 - 2.4 Plug Load Management and Operation
 - 2.5 Air-Conditioning Zoning and Controls
 - 2.6 Water Efficient Fittings
 - 2.7 Water Usage Monitoring
 - 2.8 Sustainable Renovation
 - 2.9 Operational Products
 - 2.10 Operational Waste Management

- SECTION 3 – OFFICE ENVIRONMENT**
- 3.1 Occupant Comfort
 - 3.2 Indoor Contaminants Management
 - 3.3 IAQ Trending, Monitoring and Display
 - 3.4 Daylighting
 - 3.5 Artificial Lighting
 - 3.6 Glare Control
 - 3.7 Acoustics
 - 3.8 Universally Accessible Office Design
- SECTION 4 – WORKPLACE HEALTH AND WELL-BEING**
- 4.1 Access to Healthier Food
 - 4.2 Supporting Facilities for Healthier Eating Habits
 - 4.3 Active Workplace Design
 - 4.4 Active Commute
 - 4.5 Fitness Programmes and Exercise Facilities
 - 4.6 Biophilic Features
 - 4.7 Mental Health Management
 - 4.8 Supporting Employee Smoking Cessation Efforts
 - 4.9 Workplace Health Promoting Policies
- SECTION 5 – ADVANCED GREEN AND HEALTH FEATURES**
- 5.1 Energy Efficiency Index (EEI)
 - 5.2 Renewable Energy
 - 5.3 Energy Monitoring and Demand Control
 - 5.4 Energy Disclosure
 - 5.5 Fit-Out Waste Management
 - 5.6 Advanced IAQ Management
 - 5.7 Complimentary Certifications
 - 5.8 Green Mark Decal
 - 5.9 Other Advanced Green Features
 - 5.10 Workplace Health Promotion Activities

POINTS ALLOCATION – BCA-HPB GREEN MARK FOR HEALTHIER WORKPLACES 2018 (GM HW: 2018)

GM Criteria		Points Allocation
Section 1 – SUSTAINABLE DESIGN & MANAGEMENT		
Part A	Base Building Selection	6
1.1	Base Building Performance	3
1.2	Green Lease	3
Part B	Project Team	3
1.3	Integrative Design Process	1
1.4	Environmental Credentials	2
Part C	Management Commitment & User Engagement	9
1.5	Environmental Policy, Targets and Action Plan	3
1.6	Sustainable Procurement	2
1.7	Occupant Engagement	4
Sub-total for Section 1		18
Section 2 – ENERGY AND RESOURCE MANAGEMENT		
Part A	Lighting	11
2.1	Lighting Efficiency	8
2.2	Lighting Zoning & Controls	3
Part B	Plug Loads	8
2.3	Plug Load Efficiency	6
2.4	Plug Load Management and Operation	2
Part C	Air-Conditioning	4
2.5	Air-Conditioning Zoning and Controls	4
Part D	Water	3
2.6	Water Efficient Fittings	2
2.7	Water Usage Monitoring	1
Part E	Materials & Products	12
2.8	Sustainable Renovation	9
2.9	Operational Products	3
Part F	Waste	4
2.10	Operational Waste Management	4
Sub-total for Section 2		42
Section 3 – OFFICE ENVIRONMENT		
Part A	Indoor Air Quality (IAQ)	18
3.1	Occupant Comfort	9
3.2	Indoor Contaminants Management	6
3.3	IAQ Trending, Monitoring and Display	3
Part B	Spatial Quality	12
3.4	Daylighting	2
3.5	Artificial Lighting	3
3.6	Glare Control	1
3.7	Acoustics	3
3.8	Universally Accessible Office Design	3
Sub-total for Section 3		30

Section 4 – WORKPLACE HEALTH & WELL-BEING		
Part A	Promoting Healthier Eating	4
4.1	Access to Healthier Food	3
4.2	Supporting Facilities for Healthier Eating Habits	1
Part B	Promoting Physical Activity	8
4.3	Active Workplace Design	4
4.4	Active Commute	1
4.5	Fitness Programmes and Exercise Facilities	3
Part C	Promoting Mental Well-being	5
4.6	Biophilic Features	2
4.7	Mental Health Management	3
Part D	Promoting Smoke-Free Workplace	2
4.8	Supporting Employee Smoking Cessation Efforts	2
Part E	General Workplace Health	4
4.9	Workplace Health Promoting Policies	4
Sub-total for Section 4		23
Section 5 – ADVANCED GREEN AND HEALTH FEATURES		
Part A	Advanced Green Features	25
5.1	Energy Efficiency Index (EEI)	2
5.2	Renewable Energy	4
5.3	Energy Monitoring and Demand Control	3.5
5.4	Energy Disclosure	1
5.5	Fit-Out Waste Management	1
5.6	Advanced IAQ Management	4.5
5.7	Complimentary Certifications	3
5.8	Green Mark Decal	1
5.9	Other Advanced Green Features	5
Part B	Advanced Health Features	5
5.10	Workplace Health Promotion Activities	5
Sub-total for Section 5		30
TOTAL GREEN MARK POINTS AVAILABLE		143

GREEN MARK AWARD RATING

BCA GREEN MARK AWARD RATING AND PRE-REQUISITE REQUIREMENTS

Green Mark Rating	Green Mark Score
Green Mark Platinum	70 and above
Green Mark Gold ^{PLUS}	60 to < 70
Green Mark Gold	>50 to < 60
Green Mark Certified	Compliance with all pre-requisite requirements

Pre-requisite Requirements for BCA-HPB Scheme	
FOR ALL RATINGS	
<p>1. ENERGY EFFICIENCY INDEX (EEI) To compute and monitor the Energy Efficiency Index (EEI).</p>	All Ratings
<p>2. LIGHTING POWER DENSITY (LPD) To ensure that the overall installed lighting power density (LPD) does not exceed 12 W/m².</p>	
<p>3. INDOOR TEMPERATURE To maintain indoor dry bulb temperature at 23 °C and above to prevent overcooling. The average relative humidity should not exceed 65% for new office premises and 70% for existing office premises.</p>	
<p>4. LOW-VOC PAINTS To use low-VOC paints by an approved local certification body.</p>	
<p>5. ENERGY IMPROVEMENT TARGETS & ACTION PLAN To set site-specific environmental performance targets and action plans for energy.</p>	
<p>6. GREEN & HEALTH AMBASSADOR To appoint a management representative from the corporate real estate team or a green and health ambassador within the office to lead the implementation of the energy improvement plans and also health promotional activities in the office.</p>	
<p>7. EMPLOYEE ENGAGEMENT To conduct at least <u>one green</u> and <u>one health-related</u> activity in a year for the office occupants. Company may tap on external resources to run these activities.</p>	
<p>8. RECYCLING FACILITIES To provide appropriate recycling facilities for collection and storage of common recyclables such as paper, glass, metal and plastic in commingled or sorted form.</p>	
<p>9. POLICY STATEMENT To set in place a policy statement (e.g. included in organisation’s mission statement, core values, HR policies) that supports workplace health promotion.</p>	
<p>10. DEDICATED FUNDS To set aside dedicated funds to run workplace health promotion and green-related activities.</p>	

**Additional Pre-Requisite Requirements:
FOR GOLD, GOLD^{PLUS} AND PLATINUM RATINGS**

11. MINIMUM POINTS SCORE

To ensure that the office meets both green and health objectives, minimum points score shall be achieved according to the table below.

Sectional Focus	Section	Combined minimum points score
Green-Related requirements	Sections 1 & 2	≥ 25 points
Health and Other Green-Related requirements	Sections 3, 4 & 5	≥ 25 points

Gold, Gold^{PLUS} and Platinum Ratings

12. OFFICE ENERGY CONSUMPTION

Green Mark Rating	Energy Efficiency Index (EEI)	
	For offices with occupant density > 12 m ² /pax	For offices with occupant density ≤ 12 m ² /pax
Gold	≤ 80 kWh/m ² /yr	≤ 90 kWh/m ² /yr
Gold ^{PLUS}	≤ 70 kWh/m ² /yr	≤ 80 kWh/m ² /yr
Platinum	≤ 60 kWh/m ² /yr	≤ 70 kWh/m ² /yr

Note: EEI is calculated based on actual utility bills (kWh) or power meter reading for a minimum 3 months after office renovation and staff move-in. It shall exclude the power consumption of data centre/ server room and air-conditioning which is normally provided by the landlord.

$$EEI = [(TBEC - DCEC) / (NLA - DCA)] * (55/OH)$$

Where:

- a) TBEC : Total office energy consumption (kWh/yr)
- b) DCEC : Data centre/ server room/ communications room energy consumption (kWh/yr)
- c) NLA : Nett lettable area (m²)
- d) DCA : Area of data centre/ server room (m²)
- e) 55 : Normalising factor based on 55 hours working week.
- f) OH : Weekly operating hours based on official working hours (hrs/week). For offices whose business nature calls for long operating hours (e.g. due to global operations), the OH shall be based on the landlord's air-conditioning schedule.

Gold, Gold^{PLUS} and Platinum Ratings

<p>13. LIGHTING POWER DENSITY (LPD)</p> <p>To achieve more stringent LPD standards as set out in the following table.</p> <table border="1" data-bbox="177 259 1066 452"> <thead> <tr> <th data-bbox="177 259 571 304">Green Mark Rating</th> <th data-bbox="571 259 1066 304">Lighting Power Density (LPD)</th> </tr> </thead> <tbody> <tr> <td data-bbox="177 304 571 349">Gold</td> <td data-bbox="571 304 1066 349">≤ 11 W/m²</td> </tr> <tr> <td data-bbox="177 349 571 394">Gold^{PLUS}</td> <td data-bbox="571 349 1066 394">≤ 10 W/m²</td> </tr> <tr> <td data-bbox="177 394 571 439">Platinum</td> <td data-bbox="571 394 1066 439">≤ 9 W/m²</td> </tr> </tbody> </table>	Green Mark Rating	Lighting Power Density (LPD)	Gold	≤ 11 W/m ²	Gold ^{PLUS}	≤ 10 W/m ²	Platinum	≤ 9 W/m ²	<p>Gold, Gold^{PLUS} and Platinum Ratings</p>
Green Mark Rating	Lighting Power Density (LPD)								
Gold	≤ 11 W/m ²								
Gold ^{PLUS}	≤ 10 W/m ²								
Platinum	≤ 9 W/m ²								
<p>14. AIR-CONDITIONING SYSTEM EFFICIENCY</p> <p>If unitary air-conditioning systems are used, all systems should have a minimum rating of 4 ticks or equivalent COP (Coefficient of Performance) under the Singapore Energy Labelling Scheme.</p>	<p>Gold^{PLUS} and Platinum Ratings</p>								
<p>15. ENVIRONMENTAL PERFORMANCE TARGETS & ACTION PLAN</p> <p>To set site-specific environmental performance targets and action plans water and waste.</p>	<p>Gold^{PLUS} and Platinum Ratings</p>								
<p>16. INDOOR AIR QUALITY (IAQ) SURVEILLANCE AUDIT</p> <p>To conduct an IAQ surveillance audit once every three years based on the indicative methods according to SS 554:2016 Code of Practice for 'Indoor Air quality for Air-Conditioned Buildings'.</p>	<p>Gold^{PLUS} and Platinum Ratings</p>								
<p>17. POST OCCUPANCY EVALUATION (POE)</p> <p>To conduct a POE survey annually and take corrective actions accordingly.</p>	<p>Gold^{PLUS} and Platinum Ratings</p>								
<p>18. GREEN PROCUREMENT POLICY</p> <p>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.</p>	<p>Gold^{PLUS} and Platinum Ratings</p>								
<p>19. WORKPLACE HEALTH PROMOTING POLICIES</p> <p>To set at least three health-promoting policies covering at least three of the following topics:</p> <ul style="list-style-type: none"> i) Active living – promoting employees to be more physically active ii) Mental well-being – supporting good mental health for employees iii) Healthy eating – supporting healthier eating amongst employees iv) Smoke-free – creating a smoke-free environment v) Chronic disease management – screening employees for chronic diseases and equipping them with knowledge and skills to manage any known conditions 	<p>Gold, Gold^{PLUS} and Platinum Ratings</p>								
<p>20. WORKPLACE HEALTH PROMOTION PROGRAMME</p> <p>To run a suite of programmes for workplace health promotion based on the identified health needs, for example through surveys such as the Post Occupancy Evaluation (POE). The suite of programmes should target certain goals and objectives, and cover at least the top 3 identified needs in the following topics:</p> <ul style="list-style-type: none"> i) Active living ii) Mental well-being iii) Healthy eating iv) Smoke-free v) Chronic disease management 	<p>Gold, Gold^{PLUS} and Platinum Ratings</p>								

Section 1 – SUSTAINABLE DESIGN AND MANAGEMENT	Green Mark Points (18 Points)														
<p>Part A: Base Building Selection</p>	<p>6 points</p>														
<p>1.1 <u>Base Building Performance</u></p> <p>To encourage the selection and leasing of office space within a green building.</p> <p>a) Green Mark Award for Base Building</p> <p>Building is awarded with Green Mark Gold Award or higher; <u>or</u> Building demonstrates 30% energy savings over last three years</p> <p>b) Green Mark Pearl Award</p> <p>Building is awarded the Green Mark Pearl Award in the last 3 years</p>	<p>Points based on GM Award of base building (Up to 2 points)</p> <table border="1" data-bbox="863 589 1433 745"> <thead> <tr> <th>Achieved GM Award for base building</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>Gold</td> <td>0.5 point</td> </tr> <tr> <td>Gold^{PLUS}</td> <td>1 point</td> </tr> <tr> <td>Platinum</td> <td>2 points</td> </tr> </tbody> </table> <p>Points based on GM Pearl Award rating accorded (Up to 1 points)</p> <table border="1" data-bbox="863 931 1433 1059"> <thead> <tr> <th>GM Pearl Award accorded</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>Pearl Award</td> <td>0.5 point</td> </tr> <tr> <td>Pearl Prestige Award</td> <td>1 point</td> </tr> </tbody> </table>	Achieved GM Award for base building	Point	Gold	0.5 point	Gold ^{PLUS}	1 point	Platinum	2 points	GM Pearl Award accorded	Point	Pearl Award	0.5 point	Pearl Prestige Award	1 point
Achieved GM Award for base building	Point														
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Platinum	2 points														
GM Pearl Award accorded	Point														
Pearl Award	0.5 point														
Pearl Prestige Award	1 point														
<p>1.2 <u>Green Lease</u></p> <p>To encourage tenants to go the extra mile towards sustainability and establish agreed levels of environmental performance between landlord and tenant through the signing of green lease or green clauses. These green clauses shall provide details recommending minimum environmental standards to assist tenants in making their fit-out and downstream operation decisions.</p> <p>a) Maximum lighting power density (LPD) of tenanted spaces beyond the SS 530: 2014 requirement</p> <p>b) Usage of sustainable fit-out materials as stipulated in the green fit-out guidelines</p> <p>c) Sustainable operations e.g. tapping on landlord’s recycling facilities etc.</p> <p>d) Any other commitments to enhance sustainability or the well-being of building occupants (e.g. fitness programmes)</p>	<p>1 point</p> <p>Points for (b) to (d) to be scored based on the extent of the green clauses incorporated (Up to 2 points)</p>														

Part B: Project Team	3 points
<p>1.3 <u>Integrative Design Process</u></p> <p>To recognise and encourage an integrated design process such that the renovated office space is an environmentally-sustainable, resource efficient and healthy environment for the occupants.</p> <p>Addressing and negotiating between the various needs of all stakeholders involved in the design, fit-out/ renovation and operation stages to achieve common targets that can result in a balanced and optimised sustainable design outcome.</p> <p>The project team shall include and not be limited to the following representatives:</p> <ul style="list-style-type: none"> • Client • ID consultant • M&E consultant • Fit-out contractor • Facility manager • Green Mark/ Environmental Sustainability Design consultant 	<p style="text-align: center;">1 point</p>
<p>1.4 <u>Environmental Credentials of Project Team</u></p> <p>To recognise key consultants and firms with specialist green credentials who contribute to the sustainable design, fit-out/ renovation and operation stages.</p> <p>Applicable to key project members in the in-house facility management team or external consultants with the following credentials.</p> <p>a) Green Individuals</p> <ul style="list-style-type: none"> • Certified Green Mark Manager (GMM) • Certified Green Mark Facility Manager (GMFM) • Certified Green Mark Professional (GMP) • Certified Green Mark Facility Professional (GMFP) • Singapore Certified Energy Manager (SCEM) <p>b) Green Firm</p> <ul style="list-style-type: none"> • ISO 14001 or ISO 50001 certified • SGBC's Green Services Certified firm • NEA Clean Mark Silver/ Gold Award Accredited 	<p style="text-align: center;">0.5 point each for Certified GMM or GMFM 1 point each for Certified GMP, GMFP or SCEM (Up to 1 point)</p> <p style="text-align: center;">0.5 point each (Up to 1 point)</p>

Part C: Management Commitment & User Engagement	9 points
<p>1.5 <u>Environmental Policy, Targets and Action Plan</u></p> <p>To recognise Senior Management’s commitment and leadership towards a sustainable office.</p> <p>To establish the following policies and documents which contain sustainable targets, implementation strategies and improvement plans to achieve the target set over the next five years with endorsement by Senior Management.</p> <p>a) Environmental Policy for the organisation</p> <p>b) Organisation or site-specific environmental performance targets and action plans</p> <ul style="list-style-type: none"> i) Energy Policy and Improvement Plan ii) Water Policy and Improvement Plan iii) Waste Management Policy and Recycling Plan iv) ISO 14001 or ISO 50001 certifications <p>c) Key appointment holders for the office operation including the persons responsible for review, implementation and roll-out of these action plans with organisation chart made known to the office occupants</p>	<p>0.5 point for each item (Up to 3 points)</p>
<p>1.6 <u>Sustainable Procurement</u></p> <p>This refers to the implementation of various policies and measures to promote sustainable operation within the office.</p> <p>a) Green Procurement Policy</p> <p>Adoption of environmental preferable procurement policy in the operation and maintenance of the building. The objective of this policy is to reduce the adverse environmental impact of building owners’ purchasing decisions by buying goods and products from environmentally responsible product/ service providers</p> <p>b) Performance Based Procurement for Retrofitting</p> <p>Adoption of Energy Performance Contract (EPC) by EPC firms accredited by Singapore Green Building Council (SGBC) for the EE retrofit of lightings (with guaranteed LPD at $\leq 10 \text{ W/m}^2$)</p>	<p>1 point</p> <p>1 point</p>

<p>1.7 Occupant Engagement</p> <p>This refers to the provision of relevant information and guidance to the occupants as to how they can contribute positively to the reduction of the office’s environmental impact.</p> <p>a) Green and Health Committee</p> <p>To encourage owners and tenants who are advocating sustainability and wellness to come together to promote sustainability and health-related initiatives for the office.</p> <ul style="list-style-type: none"> • Member of the landlord’s green and health committee established for tenants of the building • Establish own green and wellness committee for the office <p>b) Green and Health Education</p> <p>To create awareness among the office occupants on the green features of the base building and office provision, the health and wellness policies and programmes, and how they can contribute towards sustainability as end-users.</p> <ul style="list-style-type: none"> • Green and health newsletters/ user guide • Green and health corner (notice board, intranet, etc.) • On-boarding programme for new staff • Others <p>c) Green and Health-Related Activities</p> <p>To encourage occupant engagement through green and health-related activities. Points can be scored based on the number and scale of green and health-related activities held in a year.</p> <p>Examples of green and health-related activities include organisation-wide events such as:</p> <ul style="list-style-type: none"> • Car-free day • Beach clean-ups • Upcycling workshops • Mass walks • Sports tryouts • Others 	<p>0.5 point each (Up to 1 point)</p> <p>0.5 point each (Up to 1 point)</p> <p>0.5 point for each green and health activity (up to 2 points)</p>
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Section 2 – ENERGY AND RESOURCE MANAGEMENT	Green Mark Points (42 Points)
Part A: Lighting	11 points
<p>2.1 <u>Lighting Efficiency</u></p> <p>Encourage the use of energy efficient lighting to minimise energy consumption from lighting usage while maintaining proper lighting level based on the maximum lighting power density (LPD) stipulated in SS 530: 2014</p> <p><i>Note: Design should include task lighting required to achieve intended lux level for workspace. Please refer to Annex A for the baseline of lighting power density.</i></p>	<p>Points scored = 0.2 x (% improvement) (Up to 8 points)</p>
<p>2.2 <u>Lighting Zoning and Controls</u></p> <p>Encourage the use of lighting control circuits to minimize energy usage, such as provision of the following control strategies</p> <p>a) Zoning of lighting for different usage/ locations</p> <p>b) Scheduling control to switch on and/or off the lightings with some localized override control where lighting is needed beyond the scheduled period</p> <ul style="list-style-type: none"> • Lighting on timer control/ connected to occupancy sensors • Toggle switch for light extension for different zones beyond pre-set period 	<p>1 point</p> <p>2 points</p>
Part B: Plug Loads	8 points
<p>2.3 <u>Plug Load Efficiency</u></p> <p>Encourage the selection and use of energy efficient labelled office equipment to reduce the overall energy consumption.</p> <p>Use of energy efficient labelled office equipment (such as under Energy Star, Singapore Energy Labelling Scheme or equivalent) to support general office function shall include but not limited to the following:</p> <ul style="list-style-type: none"> • Computers, laptops, monitors • Multi-function devices (including printers, photocopiers and fax machines) • TVs 	<p style="text-align: center;">Points awarded based on the total power consumption and energy efficiency rating of the equipment used (Up to 6 points)</p> <p><i>Note: If technical specifications for all models of the office equipment are not available, points can be scored if more than 80% of the applicable equipment type based on key models are shown. Points shall be capped at 4 points.</i></p>

<p>2.4 Plug Load Management and Operation</p> <p>Encourage the use of active plug load control strategies to minimise energy usage during operation.</p> <p>a) Active plug load management based on operation schedule (automatic cut-off switches with user override)</p> <p>b) Overnight equipment management system</p> <p>c) Other strategies/ systems</p>	<p>1 point each (Up to 2 points)</p>											
<p>Part C: Air-Conditioning</p>	<p>4 points</p>											
<p>2.5 Air-Conditioning Zoning & Controls</p> <p>Encourage the use of air-conditioning design practices that offer greater flexibility and makes it easier to serve area with different usage efficiently, such as the following</p> <p>a) Zoning of air-conditioning system to serve areas with different usage/ occupancy needs</p> <p>b) 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> <ul style="list-style-type: none"> • Air-conditioning on timer control • Alternative cooling modes for after office hours (e.g. auxiliary air-con for selected areas only, localised cooling through fans, etc.) <p>c) Meeting rooms, pantry, etc. with specialty occupancies having controls capable of sensing space use and responding to space demand</p>	<p>1 point</p> <p>2 points</p> <p>1 point</p>											
<p>Part D: Water</p>	<p>3 points</p>											
<p>2.6 Water Efficient Fittings</p> <p>Encourage the use of water efficient fittings under Water Efficiency Labelling Scheme (WELS) or adopt equivalent water efficient flow-rate/ flush volume for water fittings:</p> <ul style="list-style-type: none"> • Basin taps and mixers • Showers • Sink/Bib taps and mixers • Urinals and Urinal Flush Valves • Dual flushing cistern for WC <p style="text-align: center;"><u>Or</u></p> <p>Achieve PUB Water-Efficient Building Certificate</p>	<p>Points scored based on the number and water efficiency rating of the fitting type used (Up to 2 points)</p> <table border="1" data-bbox="858 1662 1484 1944"> <thead> <tr style="background-color: #c8e6c9;"> <th rowspan="2">Rating based on Water Efficiency Labelling Scheme (WELS)</th> <th colspan="2">Weightage</th> </tr> <tr style="background-color: #c8e6c9;"> <th>For fittings in landlord and tenant areas</th> <th>For fittings in tenant area only</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">✓✓</td> <td style="text-align: center;">2</td> <td style="text-align: center;">0.5</td> </tr> <tr> <td style="text-align: center;">✓✓✓</td> <td style="text-align: center;">3</td> <td style="text-align: center;">1</td> </tr> </tbody> </table> <p style="text-align: center;"><u>Or</u></p> <p>1 point for Basic certification 2 points for Silver/ Gold certification</p>	Rating based on Water Efficiency Labelling Scheme (WELS)	Weightage		For fittings in landlord and tenant areas	For fittings in tenant area only	✓✓	2	0.5	✓✓✓	3	1
Rating based on Water Efficiency Labelling Scheme (WELS)	Weightage											
	For fittings in landlord and tenant areas	For fittings in tenant area only										
✓✓	2	0.5										
✓✓✓	3	1										

<p>2.7 <u>Water Usage Monitoring</u></p> <p>Facilitate continual monitoring of water use within the development through the provision of water meters for major water uses.</p> <ul style="list-style-type: none"> • Provision of local private meters for all major water uses in the office • Provision of leak detection system with alert features • Provision of smart meters for remote monitoring • Provision of water usage portal, dashboard or other equivalent forms that display metered data, trending of water consumption and relevant parameters which facilitate better management of water consumption during building operation 	<p>0.5 point each (Up to 1 point)</p>												
<p>Part E: Materials and Products</p>	<p>12 points</p>												
<p>2.8 <u>Sustainable Renovation</u></p> <p>a) Existing Provisions</p> <p>Encourage the retention of existing provisions and minimise wastage from renovation from office fit-out.</p> <p>i) Office renovation conserves at least 25% (by area) of existing finishing for walls, flooring and ceilings</p> <p>ii) Retain and reuse of at least 25% (by number/volume) of the existing furniture or use of furniture with end-of-life take back services</p> <p>b) Flexible Layout</p> <p>To encourage design of open, flexible and reconfigurable layouts for maximum space usage.</p> <ul style="list-style-type: none"> • Provision of open and flexible layout with minimum enclosed space for ≥ 50% of office area • Provision of space savers, compactors, mobile stations, etc. • Agile working facilities (e.g. hot desking, touchdown areas, lockers for staff with no assigned desks, etc.) • Multi-functional spaces e.g. pantry areas for townhall sessions, small meetings, etc. • Central areas for administrative facilities, (e.g. printers, photocopiers, stationary areas etc.) • Others 	<p>Points based on extent of retention of base building provisions (Up to 2 points)</p> <table border="1" data-bbox="879 1111 1425 1238"> <thead> <tr> <th>Extent of conservation</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>≥ 25%</td> <td>1 point</td> </tr> <tr> <td>≥ 50%</td> <td>2 points</td> </tr> </tbody> </table> <p><i>Note: Excludes painting or touching up to paint work arising from office renovation.</i></p> <p>Points based on extent of office furniture that is retained and/ or reused (Up to 2 points)</p> <table border="1" data-bbox="879 1485 1425 1612"> <thead> <tr> <th>Extent of retention and reuse</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>≥ 25%</td> <td>1 point</td> </tr> <tr> <td>≥ 50%</td> <td>2 points</td> </tr> </tbody> </table> <p>0.25 points each (Up to 1 point)</p>	Extent of conservation	Point	≥ 25%	1 point	≥ 50%	2 points	Extent of retention and reuse	Point	≥ 25%	1 point	≥ 50%	2 points
Extent of conservation	Point												
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≥ 50%	2 points												
Extent of retention and reuse	Point												
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≥ 50%	2 points												

<p>c) Renovation Products/ Materials</p> <p>Usage of green certified renovation products/ materials by an approved local certification body. Examples of green products include the base layer and finishes layer under the following categories:</p> <ul style="list-style-type: none"> • Internal walls • Floors • Ceilings • Doors 	<p>Points scored = Weightage x Impact (Up to 4 points)</p> <table border="1" data-bbox="877 302 1428 459"> <thead> <tr> <th>Impact</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>High impact item (≥80% of applicable use)</td> <td>1 point</td> </tr> <tr> <td>Low impact item (<80% of applicable use)</td> <td>0.5 point</td> </tr> </tbody> </table> <p><i>Note: If the certified green product does not indicate a rating, the product shall be assumed to be equivalent to a “Good” rating. Points are capped at 1.5 points per category to encourage the selection and usage of green products across all categories.</i></p>	Impact	Point	High impact item (≥80% of applicable use)	1 point	Low impact item (<80% of applicable use)	0.5 point
Impact	Point						
High impact item (≥80% of applicable use)	1 point						
Low impact item (<80% of applicable use)	0.5 point						
<p>2.9 Operational Products</p> <p>Encourage the selection and usage of renovation products and materials that are environmentally-friendly and sustainable within the office.</p> <ul style="list-style-type: none"> • Cleaning products recognised by approved local certification body or equivalent • Environmental-friendly janitorial paper products • Office stationery 	<p>3 points</p>						
<p>Part F: Waste</p>	<p>4 points</p>						
<p>2.10 Operational Waste Management</p> <p>Promote and encourage waste reduction and recycling among occupants, tenants and visitors.</p> <p>a) Reduce</p> <ul style="list-style-type: none"> • Follow-me printing or secure printing, with printing options set to default greyscale and duplex printing • Digitalising internal processes e.g. HR/ administrative processes, approval, claims, payments to suppliers, etc. • Dissemination of information and circulars through emails, intranet, sharepoint, staff notice board, etc. • Encouraging staff to bring their own electronic devices to meetings instead of printing • Others <p>b) Reuse</p> <ul style="list-style-type: none"> • Use of non-disposable cups for meetings and by staff • Use of non-disposable cutlery and crockery • Use of erroneous single sided print outs • Ordering of office supplies in bulk to cut down on packaging waste 	<p>0.5 point each (Up to 2 points)</p> <p>0.5 point each (Up to 1 point)</p>						

c) Recycle

- Provision of facilities for the collection and storage of common recyclables in commingled (e.g. recyclables and non-recyclables) or sorted form (such as paper, glass, metal and plastic)
- Provision of facilities for the recycling of specialised waste stream such as E-waste, printer toners/ cartridges, light bulb/ fluorescent tubes, and food waste

Points based on extent of recycling efforts
(Up to 1 point)

Location of recycling bins	Point
At central location	0.5 point
At strategic locations	1 point

Section 3 – OFFICE ENVIRONMENT	Green Mark Points (30 Points)									
Part A: Indoor Air Quality (IAQ)	18 points									
<p>3.1 Occupant Comfort</p> <p>Ensure office space and policies are optimised and inclusive for enhanced satisfaction and well-being of the majority of occupants.</p> <p>a) Thermal Comfort</p> <p>Indoor dry-bulb temperature within 23°C to 25 °C and relative humidity <65% for consistent indoor conditions and comfort air-conditioning</p> <p>b) Temperature Control</p> <p>i) Occupants are able to control the indoor temperature by zones according to their preference and thermostat set-point does not go below 23°C</p> <p>ii) Occupants have access to devices to enhance individual thermal comfort (e.g. fans)</p> <p>c) Post Occupancy Evaluation (POE)</p> <p>i) Conduct yearly post occupancy evaluation to assess occupant’s satisfaction with the indoor environment</p> <p>ii) Communicate aggregate results with occupants</p> <p>iii) List of corrective actions taken following the post occupancy evaluation</p> <p>iv) Verify effectiveness of corrective actions and close the loop</p> <p><i>Note: Please see Annex B for a sample of the POE survey. The POE sample size should be at least 10% of the regular occupant population. When total regular occupants < 50 staff, minimum of 30% of these occupants should be surveyed. The overall POE survey should have >80% of the regular occupants expressing no dissatisfaction which can infer that the occupants find the indoor air quality to be in the acceptable range.</i></p> <p>d) Indoor Air Quality (IAQ) Surveillance Audit</p> <p>Conduct periodic IAQ surveillance audit based on the indicative methods according to SS 554:2016 Code of Practice for ‘Indoor Air quality for Air-Conditioned Buildings’.</p> <p>e) IAQ Management Plan</p> <p>Develop an active IAQ management programme to ensure the quality of the indoor environment throughout the course of the office operation</p>	<p>0.5 point</p> <p>0.5 point</p> <p>0.5 point</p> <p>2 points</p> <p>0.5 point</p> <p>1 point</p> <p>1 point</p>	<table border="1" data-bbox="879 1688 1453 1816"> <thead> <tr> <th style="background-color: #d9ead3;">Frequency of IAQ audits</th> <th style="background-color: #d9ead3;">Point</th> </tr> </thead> <tbody> <tr> <td>At least once every 3 years</td> <td>1 point</td> </tr> <tr> <td>At least once every 2 years</td> <td>1.5 points</td> </tr> <tr> <td>At least once a year</td> <td>2 points</td> </tr> </tbody> </table> <p>1 point</p>	Frequency of IAQ audits	Point	At least once every 3 years	1 point	At least once every 2 years	1.5 points	At least once a year	2 points
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At least once a year	2 points									

3.2 Indoor Contaminants Management

Encourage the adoption of indoor contaminant pollution control measures and air treatment strategies that can safeguard the health of occupants.

a) VOC Limits for Interior Fittings and Finishes

Encourage use of green products certified under the Singapore Green Building Product certification with Very Good or above rating, of which the VOC emission rate standards meet more stringent VOC emission limits. Examples include:

- i) Adhesives and sealants (including tile grouting)
- ii) Floor coverings such as carpets, laminates and vinyl flooring (excluding tiles)
- iii) Ceiling coverings such as ceiling boards
- iv) Wall coverings (excluding tiles)
- v) Varnish, stains lacquers or other trims (including doors and furniture)

b) Air Purging

- i) Conduct pre-occupancy flush out after the completion of construction and all fitting-out of interior finishes (including fixed furniture and furnishings) for all occupied spaces to remove the contaminants
- ii) Local isolation and exhaust systems to remove pollutants at source e.g. utility areas (for printing and photocopying), toilets, cleaning & chemical storage

Note: To reduce indoor contaminants, separate storage for chemicals and cleaning agents (e.g. bleach and ammonia-based agents) should be considered.

c) Pesticides and Repellent Products

Encourage the selection and usage of registered public health pesticides and repellent products as approved by NEA. These vector control products should be suitable for indoor use and does not cause pollution to the air or water quality.

Points scored based on % of applicable areas with such provision by category:
(Up to 3 points)

Category (for >80% of applicable area)	Point
Internal walls	1 point
Floors	1 point
Ceilings	1 point
Doors	0.5 point
Fixed furniture or system furniture	1 point

Note: Points are capped per category to encourage the selection and usage of low-VOC products across all categories.

1 point

1 point

1 point

<p>3.3 <u>IAQ Trending, Monitoring and Display</u></p> <p>a) IAQ Trending and Monitoring</p> <p>Provide permanent trend logging and monitoring of the following parameters, with at least 1 measuring point per floor centralised at any regular occupied space and linked to a centralised system to ensure that health and safety standards are continuously met during operational times.</p> <p>i) Temperature and relative humidity</p> <p>ii) At least one common indoor air pollutant such as CO₂, formaldehyde, total volatile organic compound (TVOC) or particulate matters (e.g. PM 2.5/ PM 10)</p> <p>b) IAQ Display</p> <p>To provide display panels at each floor or tenancy indicating the following information to raise awareness among the tenants, building occupants and visitors on the office's indoor air conditions.</p> <ul style="list-style-type: none"> • Temperature and relative humidity • CO₂ concentration • Others (e.g. formaldehyde, TVOC, particulate matters) 	<p style="text-align: center;">0.5 point</p> <p style="text-align: center;">0.5 point for each parameter (up to 1.5 points)</p> <p style="text-align: center;">0.5 point for each parameter (Up to 1 point)</p>
<p>Part B: Spatial Quality</p>	<p style="text-align: center;">12 points</p>
<p>3.4 <u>Daylighting</u></p> <p>To encourage effective daylighting to enter occupied spaces whilst minimising heat gain and visual discomfort arising from potential glare.</p> <ul style="list-style-type: none"> • Enclosed rooms located away from windows • Low workstation partition heights ≤ 1.2m from finished floor level or ≤ 0.5m from the desk plane • Perimeter lighting along windows to be interlocked with photocell sensors • Light shelf to draw daylighting deeper into the open office area • Others 	<p style="text-align: center;">0.5 point each (Up to 2 points)</p>
<p>3.5 <u>Artificial Lighting</u></p> <p>a) Lighting Level</p> <p>The measured indoor lighting levels should comply with the recommended illuminance (average lux level) stated in SS 531: 2013.</p>	<p style="text-align: center;">1 point</p>

<p>b) Colour Rendering Index (CRI)</p> <p>Lightings should meet the minimum colour rendering index (R_a or CRI) stated in SS 531: 2013</p> <p>c) Flicker-Free Luminaires</p> <p>Provision of fluorescent luminaires and LED lighting that avoid flicker and stroboscopic effects</p> <ul style="list-style-type: none"> • High frequency ballasts (frequency >20kHz) for fluorescent luminaires • LED lighting with driver output frequency <200Hz and <30% flicker <p>d) Circadian Lighting Design</p> <p>To adopt lighting design that aligns indoor lighting parameters with the human circadian rhythm (internal body clock) to provide appropriate visual stimulus that enhances comfort and productivity.</p> <ul style="list-style-type: none"> • Provision of luminaires with dynamic control of Colour Temperature and illumination level • Luminaire programmed for higher or lower Colour Temperatures depending on time of the day and season of the year 	<p>0.5 point</p> <p>0.5 point</p> <p>0.5 point</p> <p>0.5 point</p>
<p>3.6 <u>Glare Control</u></p> <p>a) Potential Glare Mitigation</p> <p>Provision of any of the following strategies to reduce glare from windows and artificial lighting</p> <ul style="list-style-type: none"> • Diffused overhead lighting • Use of light colour and matte finishes • Operable window blinds and screens • Glazing treatments/ Solar films • Workstation design to avoid glare (e.g. reduced reflective surfaces, adjustable height for monitor screens, anti-glare filters etc.) 	<p>0.5 point each (Up to 1 point)</p>
<p>3.7 <u>Acoustics</u></p> <p>To ensure a basic level of acoustic comfort for occupant health and well-being.</p> <p>a) Design and Layout</p> <ul style="list-style-type: none"> • Design and layout of office to avoid noise generated in immediate proximity/ facing the noise sources e.g. utility rooms, AHU rooms, server rooms, etc. Where such layouts are unavoidable, proper insulation should be done such that noise is attenuated and noise reverberation is minimised. • Provision of phone booths for private phone calls to avoid disturbance to others 	<p>0.5 point</p> <p>0.5 point</p>

<p>Section 4 – WORKPLACE HEALTH & WELL-BEING</p>	<p>23 points</p>						
<p>Part A: Promoting Healthier Eating</p>	<p>4 points</p>						
<p>4.1 <u>Access to Healthier Food Options</u></p> <p>To improve the nutritional value of food made available to employees on day to day basis.</p> <p>a) On-site workplace eateries on board HPB’s Healthier Dining Programme within the premise (Refer to https://www.hpb.gov.sg/healthy-living/food-beverage/healthier-dining-programme)</p> <p>b) Offer healthier options for catering i.e.</p> <ul style="list-style-type: none"> • Include whole-grains in all staple options • Offer plain water as default beverage option • Fresh fruits as an option for desserts • Coffee and tea offered must have syrup/sugar served on the side, not pre-added • Limit deep fried items (less than 10% of catered food items) <p>(For the list of caterers who offer healthier options, please refer to: https://www.hpb.gov.sg/healthy-living/food-beverage/wog-healthier-catering-policy/about-the-healthier-catering-policy)</p> <p>c) Pantries and vending machines offer healthier snacks and drinks</p> <ul style="list-style-type: none"> • Healthier Choice Symbol products • Unsweetened drinks 	<p>1 point if any of the workplace eateries are on board the programme</p> <p>1 point if all 5 criteria are met for at least one event in the last 3 months</p> <p>Points based on extent of provision (Up to 1 point)</p> <table border="1" data-bbox="874 1093 1449 1193"> <thead> <tr> <th>Extent of coverage</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>≥ 50% of snacks and drinks</td> <td>0.5 point</td> </tr> <tr> <td>≥ 80% of snacks and drinks</td> <td>1 point</td> </tr> </tbody> </table>	Extent of coverage	Point	≥ 50% of snacks and drinks	0.5 point	≥ 80% of snacks and drinks	1 point
Extent of coverage	Point						
≥ 50% of snacks and drinks	0.5 point						
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<p>4.2 <u>Supporting Facilities for Healthier Eating Habits</u></p> <p>a) Provision of water coolers/ dispensers at convenient points within office premises for staff access. A minimum of one point should be provided for each floor.</p> <p>b) Provision of dedicated communal eating spaces furnished to support self-preparation of food and discourage eating at desks</p> <ul style="list-style-type: none"> • Fridge or other cold storage options • Reheating facilities • Commonly used utensils and cutlery • Others 	<p>0.5 point</p> <p>0.5 point for provision of at least 2 examples of furnishings with the dedicated communal eating space (Up to 0.5 points)</p>						
<p>Part B: Promoting Physical Activity</p>	<p>8 points</p>						
<p>4.3 <u>Active Workplace Design</u></p> <p>To encourage physical activity at the workplace through active design of the office space for a healthy and productive workplace.</p>							

<p>a) Internal Staircases</p> <p>Visually appealing internal staircases in a visible, accessible and prominent location in the building (within 7.5 metres of an entrance and before any elevators)</p> <p>b) Workstation</p> <p>Encourage physical activity whilst working. Examples include:</p> <ul style="list-style-type: none"> • Availability of active workstations in common work areas (e.g. sit-stand desks, treadmill desks, bicycle desks, portable desk pedal, stepper machine) for any employee to reserve/ use • Alternative meeting strategies (e.g. standing meetings) <p>c) Office Ergonomics</p> <p>To optimise workplace and workstation design to meet the physical capabilities and characteristics of the employee to prevent injury, illness and improve quality of work life.</p> <ul style="list-style-type: none"> • Provision of ergonomic office environment in accordance to SS 514: 2016 Code of Office Ergonomics (e.g. height-adjustable workstations and chairs, standard desk with desk-top height adjustment stand, docking stations for laptops with external monitor screens, etc.) • Training and education of employees on basic ergonomics knowledge (e.g. induction programmes) 	<p>0.5 point</p> <p>1 point for every example stated (up to 2 points)</p> <p>1 point</p> <p>0.5 point</p>
<p>4.4 Active Commute</p> <p>To encourage physical activity during the commute to work.</p> <p>a) Allocation of spaces to encourage sustainable commuting such as bicycle lots and shower/ changing facilities.</p> <p>b) Encourage staff to use public transport, bicycle or other human powered transportation devices through awareness and incentive programmes (monetary and non-monetary incentives, e.g. additional staff benefits such as free healthy snacks for eligible staff)</p>	<p>0.5 point</p> <p>0.5 point</p>
<p>4.5 Fitness Programmes and Exercise Facilities</p> <p>To encourage leisure time physical activity through fitness programmes and exercise facilities.</p> <p>a) Host structured, regular (at least 12 sessions per year) fitness programmes open to all staff to engage in physical activity. Examples of fitness programmes may include:</p>	<p>0.5 point for every example stated (Up to 1 point)</p>

<ul style="list-style-type: none"> • Group Fitness Sessions • Sports Interest Groups • Others (e.g. ongoing friendly competitions) <p>b) Engagement and use of external facilities/ resources</p> <ul style="list-style-type: none"> • Subsidised gym memberships • Subsidised health and fitness assessments/ analysis <p>c) In-house exercise facilities (e.g. table tennis, exercise equipment, etc.) with shower/ changing facilities</p>	<p>1 point</p> <p>1 point</p>						
<p>Part C: Promoting Mental Well-being</p>	<p>5 points</p>						
<p>4.6 Biophilic Features</p> <p>To encourage the provision of greenery and biophilic features that improves the physical and mental well-being of occupants. These features include:</p> <p>a) Direct experience of nature E.g. Provision of greenery (planters, potted plants, vertical greenery) or water features (e.g. aquarium) within the office</p> <p>b) Indirect experience of nature E.g. Images, natural materials, texture, colours, naturalistic shapes and forms, geometry, etc.</p>	<p>Points based on extent of coverage (Up to 1 point)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr style="background-color: #c6e0b4;"> <th>Extent of coverage</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>≥ 1% of the office area</td> <td>0.5 point</td> </tr> <tr> <td>≥ 2% of the office area</td> <td>1 point</td> </tr> </tbody> </table> <p>1 point</p>	Extent of coverage	Point	≥ 1% of the office area	0.5 point	≥ 2% of the office area	1 point
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≥ 1% of the office area	0.5 point						
≥ 2% of the office area	1 point						
<p>4.7 Mental Health Management</p> <p>To encourage organisational work culture to consider for well-being of employees.</p> <p>a) Supporting Employee Mental Resilience</p> <p>To support employee mental well-being through policies and programmes such as:</p> <ul style="list-style-type: none"> • Employee assistance programme (e.g. counselling) • Mental well-being talks and workshops • Capability building workshops for supervisors • Fatigue management policies and programmes (e.g. limiting the number of overtime hours, workshops on managing work fatigue) • Others (e.g. addiction management) <p><i>Note: Employee assistance programmes should be offered on an ongoing basis, while workshops should be conducted at least once a year</i></p>	<p>1 point each for every programme stated (Up to 3 points)</p>						

<p>Section 5 – ADVANCED GREEN AND HEALTH FEATURES</p>	<p>30 points</p>								
<p>Part A: Advanced Green Features</p>	<p>25 points</p>								
<p>5.1 <u>Energy Efficiency Index (EEI)</u></p> <p>To improve the overall energy consumption in the office through benchmarking using EEI</p>	<p>Points scored based EEI improvement over stated baseline for GM Gold, Gold^{PLUS} or Platinum rating: (Up to 2 points)</p> <table border="1" data-bbox="866 477 1437 636"> <thead> <tr> <th>Improvement over benchmark</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>>25%</td> <td>0.5 point</td> </tr> <tr> <td>>40%</td> <td>1 point</td> </tr> <tr> <td>>50%</td> <td>2 points</td> </tr> </tbody> </table>	Improvement over benchmark	Point	>25%	0.5 point	>40%	1 point	>50%	2 points
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>25%	0.5 point								
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>50%	2 points								
<p>5.2 <u>Renewable Energy</u></p> <p>To encourage greater adoption and use of renewable energy.</p> <p>a) On-site generation</p> <p>On-site generation of renewable energy to reduce office’s power consumption from the grid and carbon emissions</p> <p>b) Purchase of renewable energy</p> <p>Offsite power purchase agreement from licenced electricity retailers to replace or offset required power consumption from the grid. Renewal energy certificates (REC) from internally-recognised companies can also be considered.</p>	<p>Points scored = 0.5 x (% replacement of electricity by renewable energy) (Up to 2 points)</p> <p>Points based on power offset from the grid (Up to 2 points)</p> <table border="1" data-bbox="866 1216 1437 1346"> <thead> <tr> <th>Extent of power offset from grid</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>≥ 50%</td> <td>1 point</td> </tr> <tr> <td>≥ 50 – 100%</td> <td>2 points</td> </tr> </tbody> </table>	Extent of power offset from grid	Point	≥ 50%	1 point	≥ 50 – 100%	2 points		
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≥ 50%	1 point								
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<p>5.3 <u>Energy Monitoring and Demand Control</u></p> <p>a) Energy Monitoring</p> <p>To encourage tracking of the office’s energy use with data presented in a relevant manner to make occupants aware of what they are consuming and engage them to be involved in managing end-use energy consumption.</p> <p>i) Electrical Sub-Metering</p> <p>Provide private sub-meters to monitor the major energy use system in the office:</p> <ul style="list-style-type: none"> • Air-conditioning / FCUs • Lighting • Plug loads <p><i>Note: Energy consumption of data centres/ server rooms/ hub rooms should be separately metered for the purpose monitoring and EEI calculation. Hence, no further point will be given for sub-metering of these rooms.</i></p>	<p>0.5 point each per system (Up to 1.5 points)</p>								

<p>ii) Energy Portal and Dashboard</p> <ul style="list-style-type: none"> • Linking the private sub-meters to the office’s energy management system (either web-based or mobile application) or equivalent for purpose of trend logging and readouts • The provision of an energy portal or dashboard in the form of digital displays in the office or on the company’s intranet <p>b) Demand Control</p> <p>Using occupancy based controls to vary indoor conditions and reduce energy consumption while maintaining good indoor environmental quality.</p> <ul style="list-style-type: none"> • Dynamic localised control allowing staff to control their own microclimate at their workplaces to suit their personal needs and preferences (e.g. lighting level, demand control ventilation, etc.) 	<p>0.5 point</p> <p>0.5 point</p> <p>1 point</p>						
<p>5.4 Energy Disclosure</p> <p>To submit annualised energy consumption data (in kWh) for the office on an annual basis for the entire period of the certification</p>	<p>1 point</p>						
<p>5.5 Fit-Out Waste Management</p> <p>Encourage holistic environmental management plan to monitor, benchmark and continually improve the environmental performance of construction process and waste minimisation on the following arising from the fit-out/renovation works:</p> <ul style="list-style-type: none"> • Energy • Water • Waste materials 	<p>1 point</p>						
<p>5.6 Advanced IAQ Management</p> <p>a) IAQ Surveillance Audit</p> <p>IAQ Surveillance audit conducted by an accredited laboratory under the Singapore Accreditation Council, based on the <u>reference model</u> described in SS 554: 2016.</p> <p>b) Airborne Disinfection Technologies</p> <p>Provision of a green-certified airborne disinfection technology in office to help eliminate airborne infectious micro-organisms and biological pollutants e.g. Ultraviolet Germicidal Irradiation System (UVGI).</p>	<p>2 points</p> <p>Points based extent of office coverage (Up to 1 point)</p> <table border="1" data-bbox="842 1971 1481 2072"> <thead> <tr> <th>Type of measurement</th> <th>Point</th> </tr> </thead> <tbody> <tr> <td>30% to 50%</td> <td>0.5 point</td> </tr> <tr> <td>>50%</td> <td>1 point</td> </tr> </tbody> </table>	Type of measurement	Point	30% to 50%	0.5 point	>50%	1 point
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>50%	1 point						

<p>c) Enhanced Filtration Media</p> <p>Provision of air cleaning devices with stipulated air filtration performance to regulate particulate levels for >90% of the occupied space e.g. electronic air cleaner, media filters</p> <p>d) IAQ Management</p> <p>Adoption of IAQ management practices stated in Workplace Safety and Health Guidelines – Management of Indoor Air Quality in Air-Conditioned Workplaces.</p> <p>The appointed IAQ in-house IAQ manager should attend IAQ courses and educate the facility management staff accordingly. The IAQ management framework flowchart in the Guidelines should also be used. (Refer to https://www.wshc.sg)</p>	<p>0.5 point</p> <p>1 point</p>
<p>5.7 Complementary Certifications</p> <p>Encourage tenants to take up and maintain high sustainability and corporate standards on well-being through certification.</p> <p>a) Green Mark for Office Interiors scheme</p> <ul style="list-style-type: none"> Achieved a Green Mark Award under Green Mark for Office Interiors scheme <p>b) Singapore Health Award</p> <ul style="list-style-type: none"> Accorded HPB's Singapore Health Award Merit rating or above in the past 2 years <p>c) Other complementary certifications</p> <p>Achieving other complementary certifications such as:</p> <ul style="list-style-type: none"> Sustainability disclosure according to Global Reporting Initiative (GRI) Sustainability Reporting guidelines Certifications awarded by other bodies 	<p>1 point if certificate is still valid</p> <p>1 point</p> <p>0.5 point each (Up to 1 point)</p>
<p>5.8 Green Mark Decal</p> <p>To display the Green Mark decal at a prominent location such as main entrance, foyer or main lobby to the office.</p>	<p>1 point</p>

<p>5.9 Other Advanced Green Efforts</p> <p>Offices which demonstrate substantial and exemplary performance to a specific sustainability indicator or outcome addressed within Green Mark beyond what is specified in the criteria, assessed on a case by case basis.</p>	<p>Points based extent of application (Up to 5 points)</p> <table border="1" data-bbox="826 318 1476 539"> <thead> <tr> <th>Coverage</th> <th>Impact</th> <th>Credit Points</th> </tr> </thead> <tbody> <tr> <td>≥10% to <30% of the project</td> <td>Low</td> <td>0.5 point per item</td> </tr> <tr> <td>≥10% to <30% of the project</td> <td>Medium</td> <td>1 point per item</td> </tr> <tr> <td>≥10% to <30% of the project</td> <td>High</td> <td>2 points per item</td> </tr> </tbody> </table>	Coverage	Impact	Credit Points	≥10% to <30% of the project	Low	0.5 point per item	≥10% to <30% of the project	Medium	1 point per item	≥10% to <30% of the project	High	2 points per item
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≥10% to <30% of the project	High	2 points per item											
<p>PART B: Advanced Health Features</p>	<p>5 points</p>												
<p>5.10 Workplace Health Promotion Activities</p> <p>Efforts to make workplace health promotion activities known, accessible and easy to participate for employees.</p> <p>a) Promotion of health-related activities</p> <p>Examples:</p> <ul style="list-style-type: none"> • Installation of point-of-decision prompts/ signage (e.g. at lift lobbies to encourage stair-taking) • Publicity materials to promote healthy lifestyles (e.g. tips to eat healthily, available programmes and policies that promote workplace health) • Incentives for healthier behaviours (e.g. pricing incentives for healthy food selection, choice architecture practices, rewards for regular participation of fitness programmes) <p>b) Inclusivity</p> <p>Examples:</p> <ul style="list-style-type: none"> • Programmes designed to reach out to off-site and shift workers (e.g. fitness classes at multiple sites, timing of activities to meet shift times, e-platforms etc.) • Catering to different demographic and preferences (e.g. differing language proficiencies) <p>c) Others</p> <p>Examples:</p> <ul style="list-style-type: none"> • Tenancy/ lease contract with on-site workplace eateries on board HPB’s Healthier Dining programme stipulating the provision of healthier meals (at least 1 <500kcal dish or use healthier oils or serve wholegrains) 	<p>0.5 point for every example stated (up to 2 points)</p> <p>0.5 point for every example stated (up to 2 points)</p> <p>0.5 point for every example stated (up to 1 point)</p>												

Annex A: Maximum lighting power density (including ballast loss)

	For compliance	For reference
Type of usage	Maximum lighting power density (LPD) (W/m ²) stated in SS 530: 2014	Recommended illuminance (average lux level) stated in SS 531: 2013
Offices, meeting rooms, copy/ print rooms, reading areas	12	300 – 500
Entrance halls, atriums, concourses, lobbies, auditoriums	10	300
Multi-purpose halls	16	300
Canteen, cafeteria, pantries (including dining area and food preparation)	10	300 – 500
Circulation areas, corridors	7	300
Stairs	6	150
Storage areas	10	200
Toilets, changing rooms	10	200

Note:

The recommended illuminance (average lux level) for offices stated in SS 531: 2013 is 500 lux. For workspaces which are designed to 300 lux, task lighting may be provided to meet the recommended lux level requirement of 500 lux and shall be included in the LPD calculation under Part 2.2 Lighting Efficiency.

Annex B: QUESTIONNAIRE FOR INDOOR ENVIRONMENT SURVEY

A. General Information and Environmental Conditions

1. Company: _____ Unit No: # _____

2. What is your gender?

Male Female

3. What is your age group?

Under 21 Years 21-30 Years 31-40 Years 41-50 Years 51-60 Years 61 and above

4. What is your job category?

Managerial Professional Admin Others

(if others, please specify: _____)

5. On average, what is the total number of hours per week you spend at your workplace?

Less Than 10 Hours 11-15 Hours 16-20 Hours 21-25 Hours

26-30 Hours Over 30 Hours

6. What is the type of your workspace?

Enclosed room Open/shared space

7. Do you work near one of the following?

Photocopier/Printer Server rack/room Pantry Entrance

Not applicable Others (if others, please specify: _____)

8. Which of the following do you often use to attain thermal comfort?

Fans Extra clothes Less clothes Not applicable Others

(if others, please specify: _____)

9. Do you experience an unpleasant odour?

Regularly Sometimes Never

10. Do you have any of the following medical conditions?

- Asthma: Yes, on medication Yes, not on medication No
- Allergy: Yes, on medication Yes, not on medication No
- Sinus: Yes, on medication Yes, not on medication No
- Migraine: Yes, on medication Yes, not on medication No

B. Satisfaction towards Indoor Environment

Please circle your satisfaction levels towards the following parameters

<u>Symptoms</u>	<u>Level of satisfaction</u>
1. Thermal comfort	Excellent / Good / Average / Poor / Very poor
2. Air quality	Excellent / Good / Average / Poor / Very poor
3. Lighting level	Excellent / Good / Average / Poor / Very poor

4. Daylight level	Excellent / Good / Average / Poor / Very poor
5. Window view to outside	Excellent / Good / Average / Poor / Very poor
6. Noise level	Excellent / Good / Average / Poor / Very poor
7. Overall cleanliness	Excellent / Good / Average / Poor / Very poor
8. Overall indoor environment	Excellent / Good / Average / Poor / Very poor

C. Health Symptoms

Please circle your experience on the following health symptoms at work accordingly.

<u>Symptoms</u>	<u>Frequency</u>	<u>Feel better or relief after leaving the building?</u> <u>(Not applicable for 'No' frequency)</u>
1. Stuffy nose	Daily / 2-3 times weekly / No	Yes / No
2. Dry throat	Daily / 2-3 times weekly / No	Yes / No
3. Cough	Daily / 2-3 times weekly / No	Yes / No
4. Skin rash/itchiness	Daily / 2-3 times weekly / No	Yes / No
5. Eye irritation	Daily / 2-3 times weekly / No	Yes / No
6. Headache	Daily / 2-3 times weekly / No	Yes / No
7. Lethargy	Daily / 2-3 times weekly / No	Yes / No
8. Drowsiness	Daily / 2-3 times weekly / No	Yes / No
9. Dizziness	Daily / 2-3 times weekly / No	Yes / No
10. Nausea/vomiting	Daily / 2-3 times weekly / No	Yes / No
11. Shortness of breath	Daily / 2-3 times weekly / No	Yes / No

Have you engaged in the following behaviours at your workplace in the past 2 weeks?

<u>Symptoms</u>	<u>Frequency</u>
1. Consume healthier meals (e.g choose healthier options when dining out, or when catering in)	>3 times a week/ 1-3 times a week/ Less than once a week/ Never
2. Consume sweetened drinks (e.g. soft drinks, fruit drinks, coffee, tea, Milo etc.)	>3 times a week/ 1-3 times a week/ Less than once a week/ Never
3. Take the stairs instead of the lift	>3 times a week/ 1-3 times a week/ Less than once a week/ Never
4. Engage in regular physical activity (any form of sports/exercise for at least 20 minutes per session)	>3 times a week/ 1-3 times a week/ Less than once a week/ Never

5. Smoke	At least once a day/At least once a week/Never
6. Manage your stress levels	Able to cope: Very Well/ Quite Well/ Not Well/ Cannot Cope
7. How satisfied are you with the health activities organised at your workplace?	Very satisfied/ Satisfied/ Neutral/ Not Satisfied/ Extremely Not Satisfied/ I am not aware of the health initiatives

D. Comments and/or Suggestions

Thank you for your participation.