

**Revision Log**

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| Revision | Description | Effective Date |
| R1 | 1st Version:released as 2 separate documents (1) Green Office Schedule and (2) Green Retail Schedule | 2014  |
| R2 | 2nd VersionUpdated and aligned with GM 2021Combined into a single schedule applicable for all non-residential building typologies |  |

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# Introduction:

The BCA have created a green lease toolkit to aid landlords and tenants to work together to improve their environmental performance over the life of the building in which they manage or occupy.

The environmentally friendly leasing arrangement or ‘Green Lease’ in short, is an agreement between landlord and tenant which sets out environmental objectives on how the building is to be improved, managed and/or occupied in a sustainable manner. This both yields cost savings in energy and water which can be shared among parties and provides a better indoor environment.

The Green Lease acknowledges the possible synergies in cooperation between building owners and tenants (and any relevant service providers and contractors). It addresses traditional structural barriers to implementation, such as split incentives and interests between building owners and tenants, by ensuring that the parties with influence over key aspects of environmental performance obtain some benefit from implementing the improvements. For example, by installing energy efficient lighting that generate less heat, a landlord can benefit from a reduced overall air-conditioning energy consumption while a tenant can benefit from the reduced energy bill for lighting usage.

The Green Lease improves transparency and accountability through providing an agreement between both landlord and tenant ensuring that the parties identify and address problems promptly and efficiently together.

**The Green Schedule provides a list of standard clauses that contain specific provisions for sustainable design and management as well as health and well-being. This includes monitoring and improving energy efficiency, water efficiency, sustainable material, waste management, indoor environmental quality, comfort and well-being of the users and occupants. Through a target/ outcome based approach, the Green Schedule is applicable to building landlords and tenants. These standard provisions are fully editable to suit your building typology or individual tenant’s context.**

This schedule can form part of a memorandum of understanding, or part of the tenancy agreement between the building landlord and individual tenants, to ensure that the tenant’s actions and operations does not negatively affect the overall building’s sustainability performance and aspirations. Mechanisms/ processes should be put in place by the building landlords for the management, validation and remedial actions/ penalties for non-compliance laid out in a transparent manner and agreed by the tenant.

The Green Schedule should be read in conjunction with the relevant BCA Green Mark criteria.



BCA Green Mark, and BCA Green Mark logo © Building and Construction Authority.

Green Schedule:

**This schedule is provided for Landlords and tenants to edit the performance levels and clauses and content as they see fit based on their individual contexts. Where grey highlighting occurs in the clause this is for the user to edit or insert their own values. Parties are encouraged to adopt as many clauses as possible to substantially improve the environmental performance of the building in a collaborative manner.**

# General:

The landlord and tenant(s) are committed to manage, operate and occupy the building and premises to promote environmental sustainability, through energy efficiency improvements, positive behavioural changes and healthy practices. This schedule forms a <*memorandum of understanding / mutual performance and disclosure agreement / part of the lease agreement with penalties for non-conformity\*1* >.

*\*1Select one.*

# Section A: Suggested Minimum Standards (Landlord)

*This section details the key ingredients that should be considered as a part of the green lease adoption. Performance requirements should be tailored for the building context and reached collaboratively with the relevant stakeholders. Reference should be paid to ‘Section E’ of this schedule. There will need to be a form of Building Management committee – however the extent of this will vary dependant on building and tenant mix.*

## A1 Certification:

1. The Tenant agrees that the Landlord shall be entitled to operate, manage and maintain the Building so as to <*achieve / retain*> at least the BCA Green Mark <*Insert Rating\*2*> for Non Residential Buildings or the future applicable BCA Green Mark certification standard. The landlord commits to maintain this level of certification <*during the entire lease period / certification period / other please specify*>.

*\*2For public sector projects, please refer to the most recent FCM issued by MOF which details the minimum environmental performance under GreenGov.SG.*

1. To <*achieve / maintain*> the Public Utilities Board’s (PUB) Water Efficient Building (WEB) (Basic) Certification.
2. **[Suggested]** The building <*operator* or *landlord*> to be ISO 14001 or ISO 50001 and ISO 46001: 2019 Water Efficiency Management Systems Certified.

## A2 Management of Energy Use

1. Monitoring and reporting of base building consumption with targets set for continuous improvement <*x kWh\*3 or x % over insert period*>.

*\*3The kWh can be actual savings which are captured by the electricity consumption tracking of the entire building, or via a demonstrated savings approach where building activities are expanding or intensifying. Demonstrated savings are calculated savings based on equipment efficiency improvements.*

1. Installation of metering to separate and monitor the building energy usage such as lighting, receptacle (plug) loads and Air-Conditioning and Mechanical Ventilation (ACMV) systems.
2. **[Suggested]** The building owner will identify opportunities for the deployment of and/or purchase of renewable energy certificates in compliance with SS 673: 2021.

## A3 Building Management

1. Operation, maintenance and renovation contracts to specify that all **paints, sealants, cleaners and adhesives are low VOC** and certified with at least SGBP 2 ticks or equivalent by local certification bodies.
2. Provision of private water meters and at least <*weekly / monthly*> monitoring of major base building water uses such as cooling towers, common toilets and irrigation.
3. Tools to support tenant to calculate design water consumption and to provide up-to-date information and advice on water fittings, equipment.
4. A ‘Tenant Construction and Fit-out Manual’ & procurement guidelines to be provided which includes sustainable materials schedule and green specifications. The guide shall detail the materials that **should not be permitted** to be used within the building.
5. Environmental Management Plan formed in collaboration with the tenants to set and review the targets set in this schedule.

## A4 Waste Management

1. Engage a waste contractor to provide sufficient recycling receptacles that are easily accessible by tenants, and dedicated space for separate collection and segregation of waste and recyclables (e.g. paper/cardboard, plastics, glass, metals, e-waste).

# Section B: Additional Standards (Landlord)

*This section provides a list of clauses that are encouraged to be implemented where possible. These clauses can be edited, removed or substituted with other clauses that are deemed relevant to the building.*

**Resource Management**

## B1 Electricity Use

1. Landlord to use only energy efficient and environmentally responsible luminaries.
2. Landlord to incentivise low energy use by providing electrical billing at below the prevailing SP Services quarterly Low Tension non-domestic tariff rate OR by giving a rebate. Target consumption to be defined and agreed upon by both landlord and tenant.

## B2 Efficient water management:

1. **[Recommended]** Installation of 3-ticks Water Efficiency Labelling Scheme (WELS) fittings for new and existing premises (upon replacement).
2. Water efficiency index averaging not greater than <*Insert value*> litres per person per day (l/p/d).
3. Use of non-potable water (e.g. AHU condensate, NEWater, rainwater, etc) for non-potable use wherever possible.
4. Use of drought resistant plants that require minimal irrigation.
5. Use of cooling tower water treatment system which can achieve a minimum 7 (for Potable Water) and 10 (for NEWater) cycles of concentration at acceptable water quality.
6. Display water conservation posters in all toilets.
7. Use high pressure washer jet, dishwasher and washer extractor that meet PUB’s water use criteria\*4, where applicable.

*\*4 Water use criteria are as follows:
a) High pressure washer jet - not to exceed 6L/min;
b) Washer extractor - not to exceed 7.8L/kg for top/front load, and 12L/kg for side load;
c) Dishwasher - not to exceed 2L/rack for undercounter/hood type, 1L/rack for single tank conveyor, 0.66L/rack for multi tank conveyor, and 0.59L/rack for flight type.*

## B3 Efficient Waste Management

1. **[Recommended]** Implement a 3R (reduce, reuse, recycle) programme that involves tenant participation.
2. Provide collection points for e-waste and packaging waste including used beverage containers in collaboration with the PRS operator(s) for premises not mandated under the relevant scheme, if any.
3. Ban the use of disposables for dine-in meals at F&B outlets.
4. A waste diversion rate not less than <*insert value*>% per year.
5. Waste audit conducted annually to identify and quantify the sources, amount and types of waste generated in the premises. A waste audit entails the following: (i) create an audit checklist for all waste types generated from each tenant premises, (ii) collect waste samples from all tenant premises, (iii) sort the waste into different types according to the checklist and (iv) weigh the waste types, record the data and analyse results to identify opportunities for waste reduction and recycling. For more information, please refer to the 3R programmes and resources available at <https://www.nea.gov.sg/3r>.

## B4 Facility Management

1. **[Recommended]** <*Trained* or *Certified*> <*Green Mark Accredited Professional (Facilities Management) / Green Mark Advanced Accredited Professional (Facilities Management) (GMAP (FM)/GM AAP (FM)), or Singapore Certified Energy Manager (SCEM)*> as a part of the Base building’s facility management team.
2. **[Recommended]** <*Certified Facilities Management Company or Certified Facilities Management Company (Gold) or Certified Facilities Management Company (GoldPlus)*>, as a part of the Base building’s facility management team.
3. <*Trained or Certified*> Water Efficiency Manager Course (WEMC), or equivalent as a part of the Base building’s facility management team.

**LANDLORD’S SUPPORT TO THE TENANT**

## B5 Assistance in tenant calculations and compliance checks

1. **[Recommended]** Assistance in assessment of the overall power consumption, including lighting design review, and providing design advice for the Tenants as a part of their fit out / renovation.
2. **[Recommended]** Provide support to the tenant during operations to reduce the tenant operational consumption of energy and water.

## B6 Monitoring and reporting of energy, water and waste

1. Provide <*quarterly / annual*> assessments of tenant electricity consumption based upon tenant submissions.
2. Regular monitoring and <*quarterly / annual*> reporting of base building water use with target to reduce consumption by <*x% or x m3/yr>.*
3. Regular reporting to tenants on the building’s environmental performance, building rating system achievements and progress on other targets set. Publish an annual report on Tenant Environmental Performance and Base building performance and communicate the results to tenants.
4. **[Recommended]** Provide weighing services for tenants to weigh their waste to be disposed of as well as recyclables to be sent for recycling. Weight data to be fed into a system for tracking of individual tenant’s generation of waste/recyclables for subsequent engagement if necessary. Regular monitoring and *<quarterly>* reporting of tenant operations to identify opportunities to eliminate waste and maximise reuse/recycling.

## B7 Tenant engagement and education programmes

1. **[Recommended]** An active Building Management committee representative of the tenants and the landlord (see Section E).
2. Conduct annual sustainability education programme to the building occupants and Facilities managers.
3. Formal mechanisms for gathering tenant feedback (including thermal comfort).

**GOOD PRACTICES**

## B8 Haze resilience and IAQ measures

1. **[Recommended]** Buildings outdoor air treatment to be retrofitted to be ‘haze’ resilient, or strategies utilised to minimise exposure to fine particulates (≤PM 2.5).
2. Monitoring systems to ensure optimal thermal and indoor air quality standards as set out in **SS 554: 2016** or prevailing standards.
3. Ventilation and air conditioning systems to be regularly inspected, cleaned and maintained to ensure the required ventilation provision into occupiable spaces in a building according to SS553:2016 or prevailing standards.
4. Indoor CO2 levels compared to outdoor CO2 levels of not greater than 700 Parts Per Million (“PPM”) measured in accordance with SS 554: 2016 or prevailing standard as it may be amended or replaced from time to time.

## B9 Base building control systems and calibrated monitoring

1. Regular maintenance and recalibration of base building services (such as photo-sensors, motion sensors and CO2 sensors, dampers, VSD’s / VFD’s where utilised).
2. Building Management System (BMS) system regularly calibrated to effectively control, monitor and optimise the building’s mechanical and electrical equipment including (but not limited to) ventilation systems, lighting, power systems, and fire systems.
3. Implement a fault reporting and monitoring system to allow staff and tenants to report faults and water leaks and also conduct regular inspections for water leaks and other base building performance issues.

## B10 Cleaning Services

1. **[Recommended]** Cleaning contract to stipulate the use of natural, solvent free and hydrocarbon free cleaning products labelled where applicable certified with at least SGBP 2 ticks or equivalent by local certification bodies.
2. **[Recommended]** Use of NEA-registered pesticides and vector control products which are suitable for indoor use.
3. Use of low environmental impact disposable janitorial paper and rubbish bags.
4. Building exterior and hardscape maintenance contracts specify environmentally sensitive and low impact practices, including non-toxic, non-hazardous pest control measures.
5. Training programmes for cleaners with regard to specialist features (e.g. waterless urinals).

## B11 Reducing Car Dependency

1. Adequate provision of secure and sheltered bicycle storage.
2. Showers, changing rooms and lockers for cyclists.
3. For sites with limited access to public transport, provision for shuttle services to nearby transport nodes.

# Section C: Suggested Minimum Standards (Tenants)

*This section details the key ingredients that should be considered as a part of the green lease adoption. Performance requirements should be tailored for the tenant’s context.*

*The tenant shall share responsibility in the building’s sustainability objectives through participation within the Building Management Committee. The extent of this committee and involvement will vary dependant on building and tenant mix. (Reference should be paid to ‘Section E’ of this schedule).*

## C1 Certification

1. Tenant to achieve and maintain BCA Green Mark for <*Healthier Workplaces / Retail / Supermarket / Restaurant*> <*Insert Rating*> award <*within the lease period / at the next retrofit/ in x months*> where applicable.

## C2 Management of Energy Use

1. Lighting Power Budget for <*Office / Retail / Restaurant / Other spaces*> not more than <*Insert figure\*5*> watts per square meter (W/m2)*.*

*\*5 The recommended lighting power budget for different spaces can be found in GM2021 EE section, Table 2A.*

1. The measured indoor lighting levels should comply with the recommended illuminance (average lux level) stated in SS 531: 2013 or prevailing standards.
2. Lights shall be energy efficient and environmentally responsible.

## C3 Sustainability Management

1. Interior paints, varnishes, sealants and adhesives to be low VOC using natural and water based products where possible. These products should be certified with at least SGBP 2 ticks or equivalent by local certification bodies.
2. The Tenant shall ensure that all work done within the Premises by the Tenant or its representatives shall be undertaken in accordance herewith and with the Tenant Construction Manual.
3. Annual targets for carbon emissions, energy, water and waste reduction with tangible results demonstrated.
4. An ESG or CSR policy that commits to engage actively in promoting the environmental responsibilities of business.

# Section D: Additional Standards (Tenants)

*This section provides a list of clauses that are encouraged to be implemented where possible. These clauses can be edited, removed or substituted with other clauses that are deemed relevant to the tenant and may vary from tenant to tenant.*

**Resource Management**

## D1 Energy Intensity & Usage

1. **[Recommended]** Monitoring and reporting of tenant consumption with targets set for continuous improvement <*x kWh\*6 or x % over insert period*>.

*\*6 The kWh can be actual savings which are captured by the electricity consumption taken from the power bill / meter reading, or via a demonstrated savings approach where tenant activities are expanding or intensifying. Demonstrated savings are calculated savings based on equipment efficiency improvements.*

1. The Tenant agrees to limit annual average consumption of electricity within its Premises to <*Insert figure*\*7> Kilowatt hours per square meter per year (kWh/m2/yr).

\*7  *the recommended EUI for different premises can be found in the respective Green Mark schemes* [*https://www1.bca.gov.sg/buildsg/sustainability/green-mark-certification-scheme/green-mark-assessment-criteria-and-online-application*](https://www1.bca.gov.sg/buildsg/sustainability/green-mark-certification-scheme/green-mark-assessment-criteria-and-online-application)

1. Equipment Plug Load – Average <*x W/m2*>.
2. Offset operational energy through the procurement of renewable energy certificates (RECs) in compliance with SS 673: 2021, or certified carbon offsets.

## D2 Water Usage:

1. **[Recommended]** Installation of 3-ticks Water Efficiency Labelling Scheme (WELS) fittings for new and existing premises (upon replacement), where applicable.
2. The Tenant agrees to limit annual average consumption of water within its Premises to <*Insert figure*\*8> litres per person per day (l/p/d), exclusive of consumption within the base Building (e.g. excluding the standard washrooms provided and maintained by the landlord).

*\*8 Target to be identified during building operation*

1. Tenant to display water conservation posters at water usage areas within its own premises.

## D3 Metering

1. **[Recommended]** Total energy metering as well as separate metering of tenancy lighting, IT rooms and general tenancy power usage (receptacle loads). Use of smart meters where feasible.
2. Provision of private water meters, where applicable and at least <*weekly / monthly*> monitoring of premises’ water usage.

## D4 Air-Conditioning and Control systems

1. **[Recommended]** For areas that require cooling beyond the normal operating hours of the central plant, dedicated supplementary cooling installed are required to meet the minimum of < *5 ticks*> for split unit aircon models up to 10 kW cooling capacity and *<3-ticks>* for split unit aircon models above 10 kW cooling capacity. If using Variable Refrigerant Flow (VRF), *<4-ticks>* with temperature sensors and occupancy sensors shall be installed to control energy usage. The system must be regularly serviced and maintained to ensure operational efficiency.
2. Air conditioning controls to maintain thermal comfort and good indoor air quality shall be designed for. Temperature to follow SS 554: 2016 or the prevailing standard.
3. Enclosed areas to be provided with dedicated thermostat controls (e.g. meeting rooms, closed offices, conference facilities) with auto shut off or ramp down when not in use.
4. Lighting control to include occupancy sensors and interlocked with perimeter lighting with local overrides. Enclosed spaces to have dedicated light switches and auto switch off when not in use.
5. All control systems to be regularly checked and maintained.
6. Zone the air conditioning with each zone not exceeding 100m2.

**Materials & Fit Out**

## D5 Fit out and renovations

1. Internal partitions to be modular and re-usable (>*70%*), where applicable.
2. **[Recommended]** Furnishings, furniture and carpets to be certified with at least SGBP 2 ticks or equivalent by local certification bodies containing recycled materials and be low VOC.
3. The Tenant shall have regard to the Tenant Procurement Guidelines in procuring furniture, fixtures, materials, supplies and equipment to be brought into the Premises.
4. The tenant agrees to recycle or reuse or require its contractor to recycle or reuse as much as possible any waste created in the demolition of existing Leasehold Improvements or Alterations within the Premises so as to minimise the amount of waste ending in landfill.

## D6 Equipment

1. **[Recommended]** Policy to ensure that energy efficient settings are enabled on all equipment.
2. Energy Star or NEA Energy Efficiency Labelling rating as a minimum requirement for all applicable equipment.
3. Installation of water dispensers to reduce use of bottled water/disposable cups and encourage use of reusable cups.
4. Use of Mandatory Energy Labelling Scheme (MELS) regulated appliances with highest tick-rating (i.e. 5 ticks for television, 4 ticks for refrigerator, 3 ticks for lamp).

**Good Practices**

## D7 Company Policies and procedures:

1. **[Recommended]** Organisational sustainability policy, ESG policy and implementation plan.
2. Mechanisms in place to encourage staff accountability, awareness and participation.
3. Display of certification <*Green Mark Plaque / Certificate/ other*> or energy performance and water performance data in public areas.
4. Annual waste audit to identify and quantify the sources, amount and types of waste generated in the premises. A waste audit entails the following: (i) create an audit checklist for all waste types generated from each department, (ii) collect waste samples from all departments, (iii) sort the waste into different types according to the checklist and (iv) weigh the waste types, record the data and analyse results to identify opportunities for waste reduction and recycling. For more information, please refer to the 3R programmes and resources available at <https://www.nea.gov.sg/3r>.

## D8 Cleaning

1. Tenant shall require that in any cleaning contracts granted directly by it, the cleaning contractor shall use cleaning products certified in accordance with at least SGBP 2 ticks or equivalent by local certification bodies.
2. The Tenant shall ensure that any cleaning contracts require the cleaning contractor to comply with elements of the Environmental Management Plan applicable to it. Particularly, any cleaning contracts let by the Tenant in respect of specialised green facilities, such as waterless urinals, shall ensure the cleaning contractor properly understands and is trained on the maintenance of such specialised green facilities.
3. **[Recommended]** Use of NEA-registered pesticides and vector control products which are suitable for indoor use.

## D9 Waste and Resource Management

1. Purchasing and Management of Goods
* Work with suppliers to deliver goods without or with less disposable packaging
* Purchase products with recycled content/less packaging material
* Purchase reusables instead of single-use items wherever possible
1. Facilities and Operations
* Provide reusables instead of single-use items for staff use (e.g. reusable crockery and cutlery at pantries, reusable bags, water dispensers/water jugs and reusable cups in meeting rooms)
* Track and reduce printing and photocopying volumes of each employee/department
* Go digital (e.g. online portal, sharing platforms, online repository)
* Provide recycling bins within the premises for staff to recycle paper/cardboard, plastic, glass, and metal
* Donate unwanted items that are still in working condition (e.g. check on this as part of the disposal process, organise donation drives)
* Repair/refurbish furniture /devices to prolong their lifespan

## D10 Indoor Contaminants Management

1. 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.
2. Local isolation and exhaust systems to remove pollutants at source e.g. utility areas (for printing and photocopying), toilets, cleaning and chemical storage.
3. Monitoring systems to ensure optimal thermal and indoor air quality standards as set out in **SS 554: 2016** or prevailing standards.
4. Ventilation and air conditioning systems to be regularly inspected, cleaned and maintained to ensure the required ventilation provision into occupiable spaces in a building according to SS553:2016 or prevailing standards.
5. Conduct yearly post occupancy evaluation to assess occupant’s satisfaction with the indoor environment and take corrective actions for dissatisfaction. Aggregated results should also be communicated with occupants.

Indoor CO2 levels compared to outdoor CO2 levels of not greater than 700 Parts Per Million (“PPM”) measured in accordance with SS 554: 2016 or prevailing standard as it may be amended or replaced from time to time.

# Section E: Environmental Assessment and Reporting

The Landlord and Tenant, acting reasonably and in good faith, agree to cooperate from time to time in determining compliance with the Environmental Objectives as set out in Section A to D herein and in refining such Environmental Objectives from time to time. **A Building Management Committee** representative of the Landlord and Tenant(s) shall be formed and is charged with the responsibility to develop the Environmental Objectives, to implement the objectives, monitor the performance of the building and report periodically on the outcomes. Building Management Committee agree to meet at least <*2 (twice) annually*> in order to determine and discuss the achievement of the Environmental Objectives for the Building and the Premises and any further steps that could be taken to achieve the Environmental Objectives.