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Sixty Martin Place Green Star, NABERS, Digital Strategy – Tenant Guide

October 2023

Contents

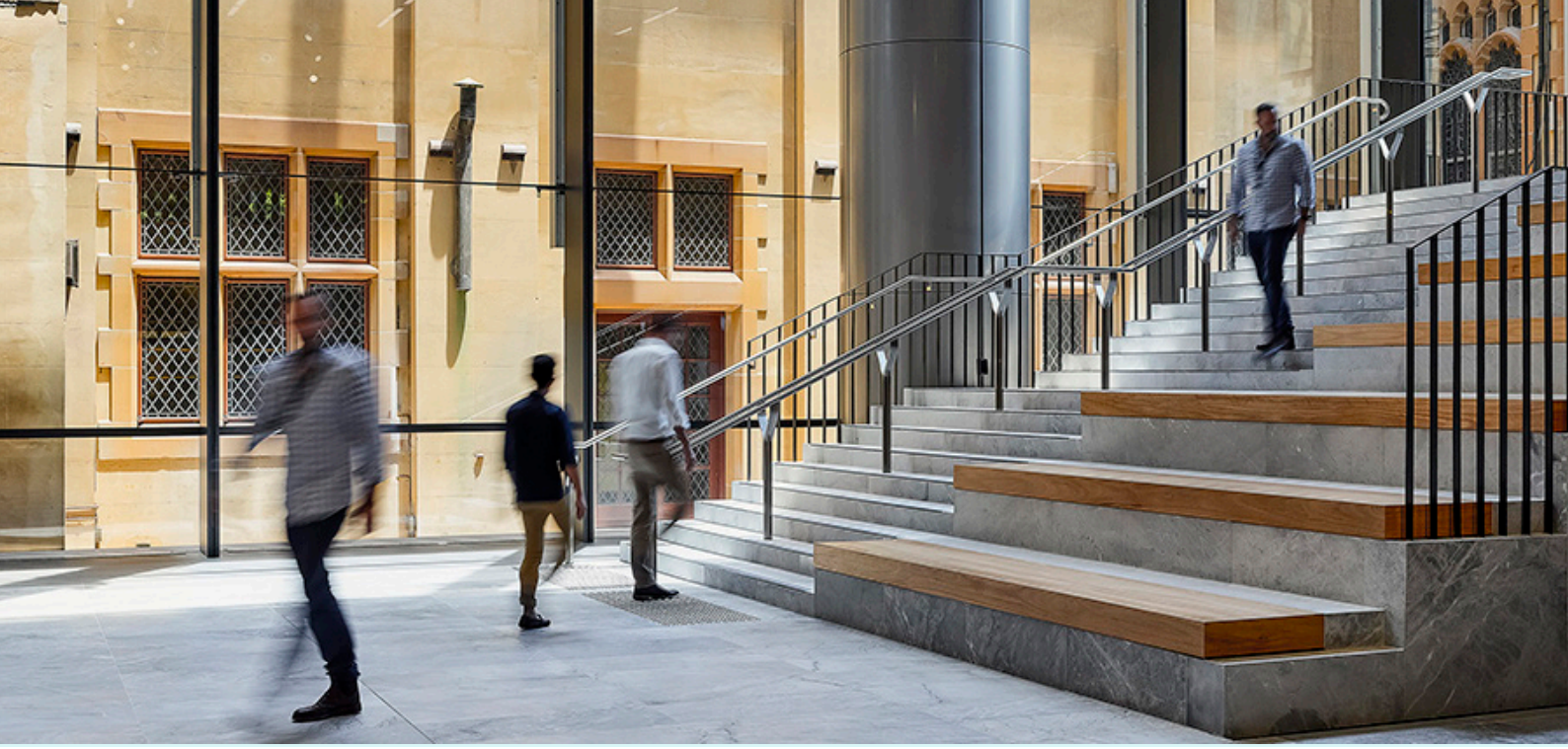
Overview

Sixty Martin Place has been designed to address a number of environmental issues to reduce its environmental impact and provide a more comfortable environment for the building users. The building holds the following environmental performance ratings:

- 6 Star Green Star Design & As-Built v1.1
- 5 Star NABERS Energy (6 star with GreenPower)
- 4.5 Star NABERS Water
- WELL Platinum v1 Core Rating
- WELL Health Safety Rating
- WELL Equity Rating

In order for the full benefits of these initiatives to be realised by the occupants, it is recommended that any tenant fitout adopts similar design principles to their works. This document has been prepared to list the key initiatives and specific requirements for the ratings targeted by the base building.

This document does not cover leasing requirements relating to Green Star, in particular, end-of-life waste performance or environmental targets and reporting (as required for Credit 5 – Commitment to Performance).



Green Star Design & As Built v1.1

Sixty Martin Place has a 6 Star rating under the Design & As-Built v1.1 rating tool. This is a holistic rating which is based on a number of environmental performance indicators and occupant amenity outcomes.

The Green Star environmental rating system recognises and rewards Best Practice (4 Stars), Australian Excellence (5 Stars) and World Leadership (6 Stars) in ecologically sustainable building design and construction.

The sections below provide a summary of the key requirements for tenant fitouts to consider; with initiatives listed as per the credits in the Design & As-Built v1.1 rating tool. This is not an exhaustive list of the initiatives within the base building and potential tenant impacts; rather it focuses on items where fitouts have a significant bearing on the outcome of the building performance and Green Star compliance.

Further details on credit requirements and compliance methods are available in the Green Star Design & As-Built Submission Guidelines v1.1, available from the Green Building Council of Australia.

Commissioning and Tuning

Commissioning is a vital stage construction and ensures that the building services operate as intended by the design team, in an efficient and effective way. To address this, the project has integrated a thorough review, commissioning and building tuning process which has been overseen by an independent commissioning agent.

Credit 2.0 Environmental Performance Targets

The project has established and documented the environmental performance targets of the building, as well as the intended functionality and operations of all building systems. This document is known as the 'Owners Project Requirements' and has been issued to all relevant stakeholders.

Tenant fitouts should consider establishing a similar document to ensure that environmental performance targets and design intent are well understood by all parties throughout the delivery and operation of the fitout

Credit 2.1 Services and Maintainability Review

The project has undertaken comprehensive services and maintainability review during the design stage of the project which has focussed on commissionability, controllability, maintainability, operability including fitness for purpose and safety. This review has been undertaken by the project Independent Commissioning Agent (ICA).

Tenant fitouts must integrate a similar review process into the fitout design, either through an ICA or by the head fitout contractor. This review should cover all the services delivered as part of the fitout works.

Credit 2.2 Building Commissioning

The project has developed a comprehensive commissioning specification and commissioning plan which covers the objectives, scope, deliverables, roles and responsibilities, witnessing and documentation requirements required during the process. This plan has been developed to ensure that the systems will be commissioned in accordance with industry codes and best practices.

Tenant fitouts should consider implementing a similar specification and plan to ensure that all fitout systems are commissioned to operate as per design intent and documented accordingly. This plan should be prepared by a commissioning specialist.

Credit 2.3 Building Services Tuning

In order to ensure building systems operate as per design intent through a full range of climatic seasons, the project has committed to a building tuning period beyond commissioning. This process commences with the occupation of the building and continues for 12 months, with reviews and adjustments happening on a quarterly basis and a final review of system manufacturer warranties at completion. The process draws on measured performance data, occupant feedback and periodic inspections and trends.

It is recommended that the tenant fitout incorporate a similar arrangement, which should be included in the commissioning plan recommended above.

Credit 2.4 Independent Commissioning Agent

The project has appointed an Independent Commissioning Agent to advise, monitor and verify the commissioning and tuning of the nominated building systems throughout the design, tender, construction and tuning phases.

It is recommended that the tenant fitout consider engaging an ICA to provide guidance and verification to the commissioning process.

Metering and Monitoring

Operational energy and water consumption can be significant contributors to the environmental impact of a building. Whilst efficient design can minimise demand, it is important to include infrastructure to allow the consumption of these utilities to be monitored at the end-user level, to enable operational management and measurement. The project has included electricity, gas, water and thermal sub-meters throughout the building on all major end uses and different tenancies.

Credit 6.0 Metering

The base building has allowed for metering for all tenant light and power separately for each individual tenancy within the office tower. In addition to authority metering, tenant fitout s should consider measuring major end uses (i.e. server rooms, kitchens etc.) which are installed downstream of these base building provided tenant distribution board meters in order to ensure energy consumption patterns can be managed. Similarly, if a tenant installs any major water uses (i.e. commercial kitchens, showers, amenities etc.), water meters should be included for these end-uses. For small fitouts (less than 500m2) such as retail tenancies total energy and water metering is typically sufficient.

Commercial office tenants may be required to provide sub-metering to supplementary equipment serving spaces where base building conditioning is removed. This is to prevent the base building NABERS rating from being negatively impacted (refer to section 3.1). Meters must be connected to an automatic monitoring system capable of capturing, processing, visualising and analysing the data produced by these meters and can be connected to the base building Energy & Water Monitoring System to enable this. This may require authority meters to be specified with dual outputs to enable data to be monitored and reported without the need for duplication of meters.

All non-authority meters installed should be commissioned and validated in accordance with Appendix D of the NABERS Energy and Water for Offices Rules for collecting and using data Version 3.

Construction Environmental Management

Construction and demolition are responsible for significant environmental impacts, especially at the local level. These arise from site disturbance, pollution, construction waste, and water and energy use. As a result, Lendlease has developed a project-specific Environmental Management Plan (EMP) for construction. The Lend-lease Environmental Management System is accredited by ISO14001 and ensures conformance with the project-specific EMP.

Credit 7.0 Environmental Management Plan & 7.1 Formalised Environmental Management System

Where tenant fitout is not delivered by Lendlease as the head contractor, it is recommended that the fitout selects a head contractor with a formalised EMS in place and requires the contractor to develop a project-specific EMP.

Indoor Air Quality

Indoor air quality can be impactful in terms of occupant health and productivity. The project has provided additional outside air beyond the minimum required and has included CO2 sensors in the space to ensure adequate outside air is provided into the occupied zone.

Credit 9.1 Ventilation System Attributes

Mechanical services should be designed to comply with ASHRAE Standard 62.1:2013 in regards to minimum separation distances between pollution sources and outdoor air intakes.

Any mechanical ventilation system within the tenancy must be designed to provide adequate access for maintenance to both sides of all moisture and debris-catching components within the air distribution system.

All new and existing ductwork that serves the building must have been cleaned in accordance with the recognised standards such as the AIRAH HVAC 2010 Hygiene Best Practice Guideline.

Alternatively, construction management processes should ensure that all ductwork remains free of moisture and debris until occupation.

Credit 9.2 Provision of Outdoor Air

The base building has been designed to provide 11.25l/s/person, based on an occupant density of 10m2/person. Consideration should be given to maintaining this 50% increase on fresh air rates beyond AS1668.2:2012, particularly in meeting rooms with higher occupancies.

CO2 sensors have been included in the return air duct from each floorplate to monitor and regulate fresh air into the building. The fitout should consider installing additional CO2 sensors in high occupancy spaces and spaces where supplementary mechanical systems with recirculated air are to be installed to ensure adequate fresh air is continually provided. CO2 sensors can also reduce energy consumption by reducing ventilation rates in low occupancy periods.

Credit 9.3 Exhaust or Elimination of Pollutants

The base building has provided infrastructure to allow for the exhaust of pollutants. Kitchen exhaust risers have been provided for all levels, whilst façade louvres on the commercial floors have been provided to allow general exhaust from pollutant sources such as photocopy rooms.

The fitout should utilise the infrastructure provided to ensure pollutants do not build up in the occupied space.

Where printing and photocopying equipment cannot be located in an enclosed exhausted space, it should be specified to be compliant with emission rates within the following table:

Substance	Emission Rate Print Phase (mg/h)		Emission Rate Ready Phase (mg/h)	
	Colour Printing (Total in ready print phase)	Monochrome Printing (Total in ready print phase)	Desktop Products	Floor-mounted Equipment
TVOC	18	10	1	2
Benzene	< 0.05	< 0.05		
Styrene	1.8	1.0		
Ozone	3.0	1.5		
Dust	4.0	4.0		

Acoustic Comfort

Internal noise is a significant factor in terms of occupant satisfaction and wellbeing. It can have a major influence on productivity in the workplace and is recognised as a health hazard by the World Health Organisation. The base building has included acoustic treatments in the building envelope and services to ensure noise levels are within an appropriate range for office work.

Credit 10.1 Internal Noise Levels

Internal ambient noise levels in the occupied space should be no more than 5dB(A) above the “satisfactory” sound levels provided in Table 1 of AS/NZS 2107:2000. The noise level criteria vary for different office spaces such as open-plan, enclosed meeting rooms, and private offices. Noise measurement must account for all internal and external noise sources when space is unoccupied but ready for occupancy. This includes building services equipment noise, noise emission from outdoor sources such as traffic, and noise from any noise generation process.

Credit 10.2 Reverberation

Reverberation time in the tenancy should be below the maximum stated in the ‘Recommended Reverberation Time’ provided in Table 1 of AS/NZ 2107:2000. Where note 3 of AS/NZ 2107:2000 applies and requires that reverberation times be minimised as far as practical, acoustic absorption should be installed in the noise-sensitive space. The amount of acoustic absorption must be equivalent to at least 50% of the area in the space.

Credit 10.3 Acoustic Separation

The fitout design should address noise transmission in enclosed spaces within the tenancy. There are two methods for demonstrating compliance with this criterion:

- Partitioning between enclosed spaces should be constructed to achieve a weighted sound reduction index (Rw) of at least 45; or
- The sound insulation between enclosed spaces complies with Dw + LAeq T > 75
- Where Dw = Weighted sound level difference measured between two spaces; and LAeqT = Indoor ambient noise level in the space adjacent to the enclosed space.
- The sound test from which Dw is derived must be measured in accordance with ISO 1404:1998. Measurements must be based on finished rooms, accounting for any carpets and acoustically absorbent ceiling specified.

Lighting Comfort

Lighting levels, glare and colour rendering all impact on occupant comfort and visual acuity. The project has selected flicker-free fittings with a high Colour Rendering Index and ensured that the lighting design meets recommended lighting levels and uniformity whilst minimising glare.

Credit 11.0 Minimum Lighting Comfort

The tenancy lighting design should comply with the following requirements:

- Flicker-free lighting by specifying either:
- Minimum Class A1 & A2 ballast;
- High-frequency ballasts; or
- Electronic ballasts in High-Intensity Discharge (HID) lighting.
- Accurately address the perception of colour in the space by ensuring all light sources have a minimum Colour Rendering Index (CRI) of 80

Credit 11.1 General Illuminance and Glare Reduction

Tenancy lighting levels and quality should be compliant with best practice guidelines as per Australian Standards AS 1680.1 and AS 1680.2.

Glare from lamps should be eliminated through various means such as fitting baffles, louvres, translucent diffusers, ceiling design, or other means to obscure direct light sources from all viewing angles of occupants, including looking directly upwards. The glare reduction solutions employed need to be demonstrable through at least one of the following methods:

Provide documentation showing that all bare light sources are fitted with baffles, louvres, diffusers, or other design features that obscures direct light sources;

For uniform lighting solutions, the lighting system complies with the luminaire selection system as detailed in Section 8.3.4 of ASS1680.1-2006;

The Unified Glare Rating (UGR) calculated for the lighting on a representative floor must not exceed the maximum values listed in Table 8.2 of AS 1680.1-2006. The UGR rating must be calculated in accordance with the procedure outlined in Section 8.3.3 of AS 1680.1- 2006

Credit 11.3 Localised Lighting Control

Lighting in tenant zones uses addressable fixtures, which have been zoned in less than 100m2 zones which can be individually controlled and include motion sensors. Tenant fitouts should consider zoning in this context and adjust as necessary to ensure that zones suit different functional spaces but do not exceed 100m2.

Visual Comfort

Exposure to natural light has positive impacts on health and wellbeing, with effects ranging from visual comfort through to psychological and neurological benefits. Furthermore, high levels of natural light combined with intelligent control of artificial lighting can reduce the energy consumption of the building.

Credit 12.1 Daylight and Credit 12.2 Views

The façade and floor plates have been configured to maximise the availability of natural daylight into space and to give occupants access to views for a large portion of the floor plate. The tenancy fitout should consider this, particularly when planning to partition, as daylight and views are primarily available close to the façade and can be impeded by partitioning.

Indoor Pollutants

Indoor air quality can be degraded significantly by Volatile Organic Compounds (VOCs) that off-gas from paints, finishes and other coatings. VOCs include benzene (a known human carcinogen), formaldehyde, and other chemical compounds which at high concentrations can lead to respiratory disorders. VOC levels can be 5 times higher indoors than outdoors.

The base building has selected low VOC emission products for paints, adhesives, sealants, carpets and engineered timber.

Credit 13.1.1 Paints, Adhesives & Sealants

Total Volatile Organic Compounds (TVOCs) within the base building are in conformance with the limits set out in the table below. TVOC values reflect the final ready to use a product (in the case of paints, inclusive of tints) and made in grams of VOC per litre (g/L) of ready to use the product.

Product Category	Max TVOC content in grams per litre (g/L) of ready to use product
General-purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

The following test methods are relevant to paints and can be used to determine compliance:

- ISO Method 17895 (2005), for a material with a presumed VOC content <1%
- ISO Method 11890-2 (2006), for a material with a presumed VOC content <15%
- ISO Method 11890-1 (2007), for a material with a presumed VOC content >15%

ASTM D3960, which is comprised of four individual testing procedures that measure TVOC (D2369) as well as density (D1475) and water content (D4017). Exempt compounds (D4457) must not be subtracted in the calculation of VOC contents.

The testing method for adhesives and sealants is the ASTM D3960 as detailed for paints. Tenant fitouts should note the above limits when selecting paint products.

Credit 13.1.2 Carpets

The base building uses one of the two following methods for demonstrating that carpets comply with the low VOC requirement. A combination of methods can be used to demonstrate compliance.

Product certification

The product is certified under a recognized Product Certification Scheme (listed on the GBCA website) or other recognised standards. The certificate must be current at the time of product registration or submission and list the relevant product name and model.

Please refer to http://www.gbca.org.au/green-star/technical-support/materials- category/product-certification-schemes/2933.htm for a list of recognised schemes.

Laboratory Testing

The product complies with the TVOC limits specified in the table below.

Test Protocol	Limit
ASTM D5116 – Total VOC limit	0.5 mg/m2 per hour
ASTM D5116 – 4-PC (4-Phenylcyclohexene)	0.05 mg/m2 per hour
ISO 16000 / EN 13419 – TVOC at three days	0.5 mg/m2 per hour
ISO 10580 / ISO/TC 219 (Document N238) – TVOC at 24 hours	0.5 mg/m2 per hour

Tenant fitouts should note the above limits when selecting carpet products.

Credit 13.2 Engineered Wood Products

Engineered wood products include particleboard, plywood, Medium Density Fibreboard (MDF), Laminated Veneer Lumber (LVL), High-Pressure Laminate (HPL), Compact Laminate and decorative overlaid wood panels. Timber veneers are excluded. The following applications of engineered wood products are excluded from this credit:

- Temporary uses of composite timbers (i.e. formwork)
- Composite timbers not used in indoor applications (i.e. car parks)
- Non-engineered wood products such as milled timber

All engineered wood products used in the building meets the relevant limits specified in the table below, as per the specified test protocol, or have product-specific evidence that it contains no formaldehyde.

Test Protocol	Emission limit
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤ 1 mg/L
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤ 1.5 mg/L
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤ 1 mg/L
AS/NZS 4357.4 – Laminated Veneer Lumber (LVL)	≤ 1 mg/L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) – LVL	≤ 1 mg/L
JIS A 5908:2003 – Particle Board and Plywood, with use of testing procedure JIS A 1460	≤ 1 mg/L
JIS A 5905:2003 – MDF, with use of testing procedure JIS A 1460	≤ 1 mg/L
JIS A 1901 (not applicable to Plywood, applicable to high-pressure laminates and compact laminated)	≤ 0.1 mg/m2hr
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤ 0.1 mg/m2hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high-pressure laminates and compact laminates (at 3 days)	≤ 0.1 mg/m2hr
ASTM D6007 *	≤ 0.12 mg/m3
ASTM E1333 **	≤ 0.12 mg/m3
EN 717-1 (also known as DIN EN 717-1)	≤ 0.12 mg/m3
EN 717-2 (also known as DIN EN 717-2)	≤ 3.5 mg/m2hr

** The test report must confirm that the conditions of Table 3 comply for the wood product type, the results must be presented in EN 717-1 equivalent (as presented in the table) using the correlation ratio of 0.98.*

*** The results must be presented in EN 717-1 equivalent (as presented in the table), using the correlation ratio of 0.98.*

Tenant fitouts should note the above limits when selecting carpet products.

Thermal Comfort

Thermal comfort can affect mood, performance and productivity. Whilst air temperature is a commonly used metric to infer comfort, it is often a poor indicator of how comfortable spaces are as comfort is driven by a wide range of parameters, which include air temperature, mean radiant temperature, solar irradiance, humidity, air movement, clothing levels and metabolic rates. The project façade and building services have been designed with respect to all the factors above to maximise the probability of thermal comfort for most occupants.

Credit 14.1 Thermal Comfort & 14.2 Advanced Thermal Comfort

Tenant fitouts should consider the zoning, system capacities and intended operation of the base building systems, utilising supplementary systems where appropriate. Tenant fitout must consider the location of sensors and ensure any tenant equipment (i.e. photocopiers) does not bias measurements.

Life Cycle Impacts

Building materials, construction methodology and supply chains can have a significant impact on the environmental performance of buildings. The project has undertaken a whole-of-building and whole-of-life (cradle to grave) assessment of the building to help identify environmental impacts and guide a reduction strategy.

19A Life Cycle Assessment

The base building has committed to reducing the environmental impacts embodied carbon, of the building materials/products used in the construction of the project. In order to reduce the impact across a wide range of indicators, several initiatives have been investigated:

- Dematerialisation (achieving the same performance with less material);
- Maximising recycled content;
- Switching products or components with high embodied carbon to lower embodied carbon alternatives where there is no sacrifice in performance;
- Utilising alternative fuels in delivery and manufacture;
- Purchasing or utilising Certified GreenPower for manufacturing processes; and
- Carbon offsetting part or all a product or materials manufacturing emissions in accordance with the National Carbon Offset Standard (NCOS) or similar;

It is recommended that the tenant fitout undertake a similar study and use this to guide design and procurement decisions, in order to reduce the life cycle impact of the fitout construction and operation.

Responsible Building Materials

Common building materials can have a significant impact on the environment through both the production phase and at end-of-life. The project has used a combination of certified and reused products to minimise environmental impact.

Credit 20.2 Timber Products

All timber used on or within the base building has been sourced from a combination of the following:

Sourced from forests that have been certified by forest certification schemes that meet the GBCA's 'Essential' criteria for forest certification. Currently, this includes the FSC International and PEFC schemes. Please see http://www.gbca.org.au/green-star/revised-timber- credit/2693.htm for further information.

Re-used timber

Environmental criteria for timber apply to all applications within the base building including, but not limited to:

- Formwork and other temporary installations (i.e. hoardings)
- Structural and non-structural timber including internal walls, floors and roof structures
- External and internal cladding
- Flooring, wall and ceiling finishes
- Internal and external joinery, windows, doors and other specialist uses of timber, such as installed furnishings or balustrades
- Furniture items made from timber or including timber components
- Engineered timber and composite wood products

The tenancy should consider the origin of timber used within the fitout works and furnishing selections. All timber should meet the environmental criteria outlined.

Credit 20.3 Permanent Formwork, Pipes, Flooring, Blinds and Cables

All permanent formwork, pipes, flooring, blinds and cables used within the base building either:

- Contain no PVC and have an Environmental Product Disclosure (EPD), or
- Meet Best Practice Guidelines for PVC
- The tenancy should consider either best practice PVC or PVC alternatives for related items installed within the fitout.

Sustainable Products

Environmental Product Disclosures (EPD's) are a standardised way of communicating the environmental effects associated with a product or systems raw material extraction, energy use, chemical makeup, waste generation and emissions to air soil and water. The base building has specified that a percentage of products installed on the project have an EPD to encourage more transparency in the product supply chain and enable informed decision making in the context of environmental impact.

Credit 21.0 Product Transparency and Sustainability

The base building is targeting an overall proportion (6%, measured by cost) of materials which meet the transparency and sustainability requirements under one of the following recognised initiatives, accounting for the weighting factors noted in the following table.

Transparency and Sustainability initiative	Sustainability Factor (SF)
Reused Product	1.00
Recycled Content Product	1.00*
Environmental Product Declarations - product-specific	0.75
Environmental Product Declarations – industry-wide	0.50
Product has Level A Third-Party Certification	1.00
Product has a Level B Third-Party Certification	0.75
Product has a Level C Third-Party Certification	0.50
Stewardship Program	0.50

** Only the percentage cost of the recycled content in a product cost is considered*

The different initiatives are summarised below along with compliance documentation required:

Reused Products

Reused products are items that have been previously used and are incorporated into the project without significant changes to the structure or function of the item. Cleaning, making good, repairs, recovering and resurfacing are allowed.

A statement from the manufacturer confirming that the products are recycled, the recycled content and the cost is required to demonstrate compliance.

Recycled Content Products

Recycled content items are items produced with recovered materials. The percentage of recycled content is counted towards the compliant product cost.

A statement from the manufacturer confirming that the products are recycled, the recycled content and the cost is required to demonstrate compliance.

Environmental Product Declarations (EPDs)

There are several EPD schemes available globally, however only those with a minimum cradle-to-gate scope which are independently verified are recognised by Green Star. The two EPD formats recognised include:

Products with a product-specific third-party verified EPD which are issued in conformance with ISO 14025 or EN15804, independently audited and based on the cradle-to-gate scope as a minimum

Products with an industry-wide, third-party verified EPD which are issued in conformance with ISO 14025 or EN15804, independently audited and based on the cradle-to-gate scope as a minimum and where the product manufacturer is a recognised participant in the EPD

Third-Party Certification

Third-Party Certification levels are defined in the GBCA's Framework for Product Certification Scheme. Further details are available on the GBCA's website http://www.gbca.org.au/green-star/technical-support/materials-category/product- certification-schemes/2933.htm

Stewardship Programs

Product stewardship programs encourage projects and suppliers to share responsibility for the effective reduction, reuse, recycling or recovery of products. Product stewardship is demonstrated via product stewardship contracts for both leased and purchased items, provided:

The contract is between a supplier and the building owner or tenant

The supplier agrees to collect the item at lease end for re-lease, re-use or recycling without any exemptions for timing, quality or quantity that is accepted for collection

Tenant fitouts should consider sourcing transparent and sustainable products, as evidenced through the above methodology.

Construction and Demolition Waste

Historically the bulk of demolition and construction waste has gone to landfill even though much of the waste can be considered as a valuable resource for reuse or recycling. The project demolition and construction has been managed to ensure waste is minimised, reused and recycled where possible.

Credit 22 Reduction of Construction and Demolition Waste

The fitout should consider developing a waste management plan, with a target of at least 90% (by mass) of demolition and construction waste to be diverted from landfill. All waste contractors and processing facilities should hold a 'Compliance Verification Summary' issue by a suitably qualified auditor, confirming compliance with the Green Star Construction and Demolition Waste Operational Reporting Criteria.

NABERS

The building has been designed to achieve a National Australian Built Environment Rating System (NABERS) Energy performance of 5 Stars and a NABERS Water performance of 4 Stars.

The NABERS scheme is a ‘world first initiative’ to help landlords and tenants across Australia benchmark their environmental performance. The scheme rates buildings from one to six stars with six stars representing exceptional performance.

The minimum requirements that commercial tenants must comply with as part of designing and constructing their fitouts are listed below.

Energy

Tenancies should aim to achieve 5 Star or better tenancy NABERS Energy performance.

Where heat loads exceed base building office heat load allowances in any zone (20W/m2 light & power and 10m2/person occupancy), the tenant must provide a fitout design that accommodates these loads and any need for additional outdoor air such that the base building systems are only used within their designed capacities.

Where space/zone will be regularly occupied outside normal business hours (8 am – 6 pm) with a requirement for space conditioning, the fitout design must respond by utilising supplementary systems appropriately so that base building air handling systems and plant is not required to run long hours at very low loads. Electrical supply to the supplementary equipment must be from the tenant distribution boards unless agreed otherwise with the Lessor.

Where commercial office space is conditioned via tenant installed supplementary equipment in lieu of base building conditioning enough to meet the base building design loads, the tenant may need to provide sub-metering. This is to enable energy to be established and included in the base building NABERs rating. Guidance is to be sought from the Head Contractor’s Sustainability Consultant or Real Estate Services Team to confirm the need for submetering.

The mechanical controls for tenant installed supplementary systems will maintain a temperature between 22.5 ± 1.5°C.

Connections to a supplementary system must be controlled using tenant installed motorised modulating valves and dampers that are controlled to demand (temperature and/or CO2) and closed unless the supplementary systems are in use.

Temperature sensors must be placed and mounted such that they are representative of zone conditions and not biased by heat-producing equipment (i.e. photocopiers), the sun, cold columns and/or airflow from neighbouring zones.

Packaged units and miscellaneous fans should use direct drive equipment with digital motors (i.e. Electrically Commutated Motors) with variable speed operation enabled.

Tenant installed Heating Ventilation and Air Conditioning (HVAC) equipment should be selected to minimise airside and waterside pressure drop by ensuring coil and filter face velocities of less than 2.5m/s.

Where the façade is operable, associated HVAC systems must be automatically turned off (i.e. via reed switches) when doors and windows are kept open for an extended period.

Electric heating in supplementary systems should be avoided using reverse cycle systems.

The average lighting load across the Lessee's tenancy must not exceed +1.0W/m2 more than the open-plan base building layout.

Open plan office lighting should be designed to achieve less than 1.5W/m2/100lux. Calculations must be provided showing the open plan lighting achieving this requirement. The

Lessor will provide the base building light modelling for information and coordination of the Lessee's calculations, including advice as to the Lessor's modelled design conditions.

High-efficiency sources such as LED, metal halide and fluorescent must be used along with high-efficiency control gear including ballasts and drivers.

Lighting controls are to match the base building system as demand-based and fully integrated with the base building lighting control infrastructure, including motion sensing, daylight dimming and dimming for lumen maintenance.

Power and control of tenant equipment must be demand-based and be prioritised to switch equipment to off or sleep mode when not in use.

For each floor, the Lessee must maintain the ability to meter their lighting separately from their power and allow these meters to be monitored by the Lessor and the Head Lessor.

The Lessee must meter any central data centres or main computer rooms separately inclusive of any supplementary mechanical equipment serving this room.

Water

The Lessee must install low flow fixtures and appliances consistent with the base building design. Fittings and fixtures will be developed and agreed with the Lessee, but their efficiency will generally be less than or equal to the following:

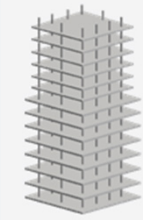
- Bathroom Basins = 1.9 L/min
- Cleaners or Kitchens Sinks = 4.5 L/min
- Toilets = 4.5/3 L/flush
- Urinals = 0.8 L/flush
- Showers = 7.5 L/min

Tenancy Fitout Digital Strategy

What we are giving you:

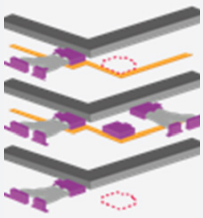
The base build architecture model will include floor finishes, walls, doors, celilings, staircases etc.

RVT



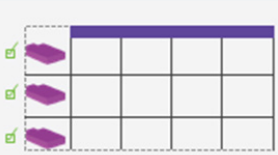
The base build structural model will include beams, columns, slabs, sheer walls etc.

RVT



The base build services models were produced by a number of contractors which will include mechanical, electrical, fire, hydraulics etc

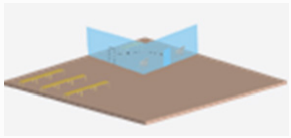
RVT



The asset register has been pipulated by every discipline with maintainable assets - this directly links back to elements within the models.

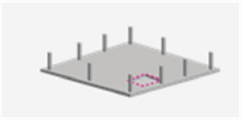
XLS

What we need back:



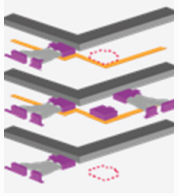
The tenant will issue an architectural model containing any new building information as well as copied base build elements - tenant and base build elements must be clearly identified.

RVT NWC



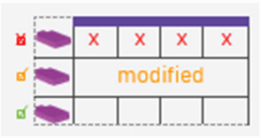
The tenant will issue a structural model containing any new build information as well as copied base build elements - tenant and base build elements must be clearly identified.

RVT NWC



The tenant will individual services models containing any new build information as well as copied base build elements - tenant and base build elements must be clearly identified.

RVT NWC



The tenant will issue an updated asset register identifying all new assets as well as those removed and modified from base build.

XLS

Detailed Tenancy Process

01 Willow provides tenants with base build models + base build register.

RVT XLS

02 Willow provides a list of required parameters to add to the model.

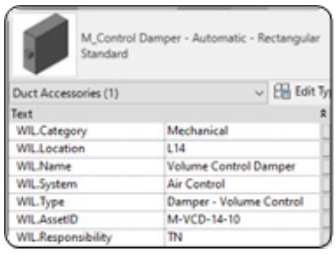
Note: WIL prefix is used as an example

WIL.Name	Descriptive name of the asset. E.g. FP Series 705 Butterfly Valve
WIL.Category	Discipline of the element. E.g Fire
WIL.Type	Type of the element as prefix as per register folder structure, with a suffix of subtype where applicable E.g. Valve - Butterfly
WIL.AssetID	Unique code for key assets. E.g. F-BFV-L03-01. Refer to the project BIM plan for naming convention
WIL.Location	Level the asset belongs to E.g. L03
WIL.System	System the asset belongs to E.g. Fire Protection Wet
WIL.Responsibility	BB - if copied base build element TN - if new tenant fitout element BB Modified - if base build modified element
WIL.Manufacturer	Manufacturer of the asset
WIL.ModelNumber	Asset model number. E.g. FP-705

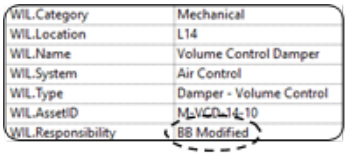
03 Willow provides a list of maintainable asset categories.

04 Tenant creates a new Revit model and links in the relevant base build model. Once linked, tenant copies the base build elements for the relevant floor from the base build model into their new model.

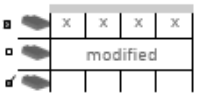
The copied elements are to have 'BB' under the WIL.Responsibility parameter. Tenant models their new fitout items - ensuring elements are labelled 'TN' under WIL.Responsibility. Tenant adds data to their relevant assets within the model. The tenant model must be in the same coordinates as the base build model. Refer to the project BIM plan for model naming convention.



05 The tenant makes modifications to base build if required. Add the text ‘BB Modified’ under WIL.Responsibil- ity parameter to indicate that the element has changed from its base build position. Any base build element that is no longer needed as part of the fitout design should be removed.



06 Tenant updates the supplied register to include the new tenant assets as well as noting which base build assets have been removed or modified.



07 Tenant supplies Willow with a completed register and a tenant model for each discipline.

08 Tenant supplies Willow with neces- sary data sheets and O&M manuals.

09 Willow pushes data and models to the WillowTwin and audits the information to ensure compliance.

10 Once complete, the 3D Geometry will be linked to the asset register.

Disclaimer

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