

ESD Report

for

No.2 Australia Avenue
Sydney Olympic Park



Prepared By



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INTRODUCTION

DSA Consulting have been commissioned as an independent advisor by Capital Corporation to review the Green Star Office rating and NABERS Office rating of the building.

The building is to be provided with a Green Star Office rating of 5.0 Stars and NABERS Office rating of 5.0 Stars.

METHODOLOGY

The project is committed to deliver a building to achieve 5 stars Green Star and NABERS. The protocol from Green Star Office Rating and NABERS Office is incorporated into the design process. A design summary guideline with highlight items is also made available to all design team member to ensure each service delivers the design as intended. An Environmental Management and Waste Management Plan are to be generated during design phase to address all potential environmental impact during construction. The responsibilities, procedures and instructions for implementing, maintaining and monitoring each environmental requirement is clarified in the EMP and made available to each party. The management system will be implemented based on the EMP during construction. An environmental site supervisor will be assigned to report on implementation of EMP on a regular basis.

Upon building work completion, all building system will be commissioned and tuned to ensure operation as intended. All commissioning works will be carried out in accordance with CIBSE Commissioning Codes and ASHRAE Commissioning Guideline 1-1996. The building tuning process includes verification that systems are performing to the design potential during all variations in climate and occupancy; optimisation of time schedules to match occupant needs and system performance and alignment of the systems' operation to the attributes of the built space served. The system will be monitored via BMS with design criteria input. Alarms will be triggered and report generated by the building management system once the operation falls outside the design tolerance. Monthly review of the system operation will be reported by the relevant service to the building owner at quarterly duration. Re-commissioning will be undertaken twelve months after the building completion. Re-commissioning refers to the process of undertaking a review of all systems to the scope of the initial pre-occupancy commissioning. It is intended to incorporate any modifications identified as necessary or beneficial during the building tuning period and to improve the performance of building operation. Building management staff will be provided with training to ensure that building management have all the information and understanding needed to operate and maintain the commissioned features and systems of the building. The training includes review of controls set up, programming, alarms and troubleshooting; O&M manuals; building operation; interactions between systems; measures that can be taken to optimise energy efficiency; OH&S issues; maintenance requirements and sourcing replacements.

The following items are included in the design to achieve ESD compliance:

- Design in accordance with Green Building Council Australia – Green Star Office Rating v3 protocol and NABERS Office assessment requirements
- Engage independent commissioning agent throughout design and construction phase to review and advise commissioning process to achieve design intent

- Environmental Management Plan in accordance with Section 3 NSW Environmental Management System Guidelines 2007 to address and resolve the potential impact on Air quality, Water, Land & Waste during construction phase
- Waste Management Plan to identify the potential waste generated during construction and to minimise the amount of waste going to disposal
- Outside air rates at 1.5 times the required AS 1668 requirements to increase indoor air quality
- Mechanical system is designed to achieve high air change effectiveness over 95% of floor area to reduce the amount of time of air elapsed in each compartment
- Carbon dioxide monitoring system is incorporated in return air terminal. CO₂ sensors are interlocked to control system to ensure delivery of optimum quantities of outside air
- Façade system is optimised to transfer the highest daylight intensity to provide a quality indoor work environment
- All lighting fittings are to be designed and operated at high frequency to minimise discomfort level
- Electric lighting level is designed at no greater than 400 Lux to maintain the comfort level
- A small span +/- 1 of Predicted Mean Vote Level is targeted in mechanical design to ensure system meets the comfort desire for the majority of people
- All equipment is designed to meet the noise level set out in AS/NZS 2107:2000 at no greater than 40dB(A)
- Interior finishes includes paints, adhesives, sealants, carpet and flooring are specified with low or zero volatile organic compounds content
- Building design to 70 kgCO₂/m²/pa maximum green gas output for the building; Mechanical system consists of gas fired VRF system to utilities “cleaner” energy source and to re-use a portion of the waste energy
- Sub-metering strategy is incorporated to all major energy & water usage, including lift, HVAC system, car park ventilation, tenant power board, irrigation, main water, shower & toilet, grey water & rainwater re-use to facilitate ongoing management of energy & water consumption
- Lighting system is designed with C-bus or Dali system to offer greater flexibility for light switching to minimize the waste generate during construction/tenancy fit out
- An on-site cyclist facility with a capacity of 10% of building staffs is provided to encourage the use of environmental friendly transport. A fully equipped change facilities with shower and storage space is also provided
- All water fitting is designed to high efficiency equivalent to minimum WELS 5 stars rating to maximise water saving. Rainwater collection and re-use system and grey water recycle system are proposed to reduce the call for water from main
- Water usage for landscaping is designed with the usage of rainwater/greywater recycled water
- Sprinkler system is designed with by-pass valve and no water is to be expelled during testing to preserve water

- Dedicated waste storage facility is provided onsite. Details on waste collection policy is provided on building users' guide and in the training section with the building staffs
- Reduction in the usage of Portland cement by substituting with industrial waste or oversized aggregate during construction
- Reduction in the usage of virgin steel by usage of recycled steel
- All PVC is specified to meet the Best Practice Guidelines
- All timber is to be certified by a forest certification scheme and accredited by FSC International or PEFC
- All active topsoil is to be preserved and store on-site during construction and re-use after construction
- All refrigerant and insulant is specified with zero Ozone Depleting Potential value

APPENDIX

- No.2 Australia Avenue Green Star Summary Table RevC

Australia Av Stage 1 Green Star Summary - Office Design v3

Credit Summary



Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
Management								
	Green Star Accredited Professional	Man-1	2	2	0	Two points are awarded where: A principal participant in the design team is a Green Star Accredited Professional and has been engaged by the building owner to provide sustainability advice from the schematic design phase through to construction completion.	Green Star Accredited Professional assigned from GPA	Green Star Consultant
	Commissioning Clauses	Man-2	2	2	0	Up to two points are awarded as follows: One point is awarded where it is demonstrated that: Comprehensive pre-commissioning, commissioning, and quality monitoring are contractually required to be performed for all building services (BMS, mechanical, electrical and hydraulic); and The works outlined above are done in exact accordance with CIBSE Commissioning Codes or ASHRAE Commissioning Guideline 1-1996 (for mechanical services only).	All serviceses: Stipulate in specification for tender - Commissioning complies to CIBSE for All services; ASHRAE for Mechanical; state that pre-commissioning, commissioning, and quality monitoring is to be performed in accordance with the relevant standards - Provide design details/scope on Energy and Environmental strategy, Monitoring and Targeting, System; description of the design intended operation and condition; a list of teh main components (including controls) and the value and conditions of their efficient use; details on maintenance including recommended frequency and a list of likely tell-tale signs of system failure, system do and don'ts' and notes on inefficient operation - Specification shall list that contractor's requirements to provide: 1) as-built/as-installed drawings 2) the commissioning report 3) training as required to ensure the building management staff have all the information and understanding needed to operate and maintain the system Builder/Contractors: - Provide as-built/as-installed drawings, O&M, Commissioning report, trining to building management staffs - A drawing register listing the drawing name, number and issue of all as built drawings; - A copy of the transmittal showing that these documents were sent to the Cap Corp. The transmittal must be detailed, with the drawing number/name/revision number clearly listed for each drawing/document that was issued; and - Details of training provided to building management staff Cap Corp: - Provide confirmation letter stating that it is committed to incorporate the commissioning requirements into the project in accordance with the specification. Also specify the time related requirements of the pre-commissioning, commissioning, and quality monitoring.	All services to provide relevant reports and specification Contractors Builder Cap Corp
						An additional point is awarded where it is demonstrated that: - The point above is achieved; and - The design team and contractor are required to transfer project knowledge to the building owner/manager through all of the following: o Documented design intent; o As-built drawings; o Operations and Maintenance Manual; o Commissioning Report; and o Training of building management staff.	Green star consultant: - Provide Design intent report NOTE: Training of building management staff must include: - Information provided in the design intent report (including energy/environmental features); - Review of controls set up, programming, alarms and troubleshooting; - Review of operations and maintenance manuals; - Review of building operation (start up, normal operation, unoccupied operation, seasonal changeover, shutdown); - Review of interactions between systems; - Review of measures that can be taken to optimise energy efficiency; - Review of Occupational Health and Safety (OHS) issues; - Review of maintenance requirements and sourcing replacements where/how replacements can be sourced; - Review of occupant satisfaction feedback	
	Building Tuning	Man-3	2	2	0	Two points are awarded where: After handover, the building owner implements tuning of all building systems; A relevant member of the design team is involved in the tuning process; Monthly monitoring is undertaken and the outcomes are reported to the building owner quarterly; Full re-commissioning is undertaken 12 months after practical completion; and A Building Tuning Report on the outcomes of the tuning process will be provided to the building owner and made available to the design team.	All Services: Stipulate in specification for tender - Include requirement for a minimum 12-month period commissioning process which includes no less than monthly monitoring, quarterly reviews and reporting, and a full re-commissioning service carried out 12 months after practical completion in accordance with design intent documentation and a building tuning report generated for Cap Corp	All services designers
	Independent Commissioning Agent	Man-4	1	1	0	One point is awarded where an independent commissioning agent has been appointed to: Provide commissioning advice to the building owner and the design team; and Monitor and verify the commissioning of all building systems.	Cap Corp: - To appoint ICA - Provide statement stating that an Independent Commissioning Agent is employed. A letter of appointment is to be provided indicating that the commissioning agent is an objective advocate of Cap corp and including the responsibilities for the commissioning agent outlined in accordance to this credit requirement. - CV of the Independent Commissioning Agent Independent Commissioning Agent (ICA): - Provide a brief statement in the commissioning report stating the level of involvement in the project Responsibility - Contribute to the development and introduction of commissioning standards, strategies and process for the nominated system; - Review the basis of design and design intent, and recommend changes to preliminary working drawings; - Set or recommend requirements to ensure the commissioning standards and process; - Involved throughout the commissioning, testing and adjustment phases; - Observe, review and endorse results of all commissioning; - Prepare recommendations to Cap Corp on the performance of system; - Review/prepare the final commissioning report	Cap corp Independent Commissioning Agent
	Building Users' Guide	Man-5	1	1	0	One point is awarded where: A simple and easy-to-use Building Users' Guide, which includes information relevant for the building users, occupants and tenants' representatives, is developed and made available to the building owner.	Cap Corp: Provide statement/contract stipulate that the project team shall transfer the Building Users' Guide to the owner upon building handover. [No longer required] Contractors: - Provide Building Users' Guide to facilitate the building performing to its designed potential. the building user guide has to include the following sections: - Building Users' Guide in draft version includes all the information outlined must be prepared for Green Star Industrial v1 - Design Rating Submission Energy and Environmental Strategy Description of building initiatives intended to enhance energy efficiency and minimise greenhouse gas emissions; Monitoring and Targeting Details on energy, water, indoor environment quality and waste targets and benchmarks for building; All Building Services System e.g. Ventilation, Electrical Systems; Transport Facilities Car parking requirements and provision of cyclist facilities, conditions of access and appropriate use; Materials and Wastes Policy Information on recycling, e.g. what can be recycled, where the recycling storage areas are; Expansion Include a list of environmental recommendations for consideration, e.g. environmentally friendly materials, re-use of other materials;	Cap-Corp Constructors

Australia Av Stage 1 Green Star Summary - Office Design v3

Credit Summary



Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Environmental Management	Man-6	2	2	0	<p>Up to two points are awarded independently of each other and as follows:</p> <p>One point is awarded where it is demonstrated that: The contractor implements a comprehensive, project-specific Environmental Management Plan (EMP) for the works in accordance with Section 4 of the NSW Environmental Management System guidelines 1998 or 2007.</p>	<p>Cap Corp: Stipulate in specification for tender - Specify that a comprehensive, project specific EMP will be developed and implemented by the contractor; - The EMP must comply with the requirement of NSW Environmental Management System Guideline (2007) Section 3 OR Section 4 of the NSW Environmental Management Systems Guidelines 1998 - Specifying that the contractor must have a current and valid ISO14001 EMS in place prior and throughout construction works (where applicable); all subcontractor shall be adhere to applicable ISO14001 requirements</p> <p>Cap Corp / Builder / Contractor: - Provide report describing how the EMP was implemented, including a summary table describing all the reporting created through the use of the EMP confirming its thorough implementation in accordance with Section 3 of the NSW Environmental Management System guidelines 2007 - Provide compliance Matrix that includes the NSW Environmental Management System requirements and a statement of how these have been fulfilled - Provide EMP in accordance to NSW Environmental Management System Guideline (2007) Section 3 OR Section 4 of the NSW Environmental Management Systems Guidelines 1998 - (Additional Point) Contractor shall be ISO14001 certified</p> <p>NOTE: - Attached EMP Guideline 1998</p>	Cap Corp Builder/Contractor
						<p>One point is awarded where it is demonstrated that: □ The Contractor has valid ISO14001 Environmental Management System (EMS) accreditation prior to and throughout the project.</p>		
	Waste Management	Man-7	2	2	0	<p>Up to two points are awarded where: The contractor implements a Waste Management Plan (WMP), retains waste records and quarterly reports to the building owner; and A percentage (by mass) of all demolition and construction waste is reused or recycled as follows: One point for 60% of the waste; and Two points for 80% of waste.</p>	<p>Cap Corp: Stipulate in specification / contract - 60% (by mass) of the waste shall be re-used or recycled - list out the full criteria for reuse/recycling of the stated proportion of construction and demolition waste - Contractual document to show agreement of retaining waste record and to provide quarterly waste reports</p> <p>All Services: Stipulate in specification: - State the proportion of construction and demolition waste that the contractors and sub-contractors is obliged to achieve. - Min. 60% (by mass) of the waste shall be re-used or recycled - All statement shall be written in the main body in the specification instead of Appendix.</p> <p>Builder/Contractors: - Provide report to summarise the total amount of demolition and construction waste generated, how it was reused/recycled, and indicate the total percentage of the waste diverted from landfill. - Provide details of the recycling of the stated proportion of construction and demolition waste - Provide Waste Management Plan, describing how all generated waste is monitored, which types of waste will be collected for recycling or for reuse on site, how recycling will occur, and who is responsible for the various aspects of the plan - Provide quarterly waste reports for the entire duration of construction works issued to the building owner, referencing appended receipts and any other appropriate records, the total amount (by mass) of waste generated and the percentage reused and recycled shall be stated</p> <p>NOTE: Common Materials and Reuses Bricks and concrete used for clean-fill; Timber to be salvaged for new structural or material use; timber waste ground into mulch or garden compost; Crushed concrete used as road-base; Plasterboard crushed for soil conditioner or for use in the manufacture of new plasterboard; Steel, aluminium and other metals for reuse in the manufacture of new metal products; Foam insulation and packaging for new insulation or soft structural forms; Pallets for reuse; Clean plastic from packaging for new packaging materials; Carpet and ceiling tiles may be taken back for reconditioning/recycling by the manufacturer; Light fixtures for cleaning and reuse; Furniture for refurbishing and reuse; Crushed tiles for paving or landscape decoration</p>	Cap Corp All Services Builder/Contractors
		TOTAL	12	12	0			
Indoor Environment Quality								
	Ventilation Rates	IEQ - 1	3	1	0	<p>Three points are available as follows:</p> <p>Naturally Ventilated Spaces Three points are awarded where it is demonstrated that 95% of the NLA is naturally ventilated in accordance with AS1668.2-2002.</p> <p>Mechanically Air-conditioned and Mechanically Assisted Naturally Ventilated Spaces Up to three points are awarded where for 95% of the NLA, outside air is provided at rates greater than the requirements of AS1668.2-1991, as follows: One point for 50% improvement; Two points for 100% improvement; and Three points for 150% improvement.</p> <p>Mixed-Mode Ventilated Spaces Both modes of operation must individually satisfy the relevant mechanical and natural ventilation criteria. The points awarded will be limited to the maximum points awarded under the mechanical ventilation criteria.</p>	<p>Mechanical Designer / Contractor: - Design air conditioning at 50% improvement of ventilation rate over 95% of nominated area; - Provide min. 20% efficiency filter to AHU in accordance to AS1132.5 test dust No.1; - Outside air supply rate 11.25 l/s per person at normal operation; - Provide report indicating the AHUs/fans that serve each space, the minimum amount of O/A rates supplied by each AHU/fan as evident in the commissioning and compared with the minimum requirements of AS1668.2-1991, as well as confirming that the minimum requirements will be exceeded for at least 95% of the nominated area - Provide AHU/Fans schedule with outside air rate as evident in commissioning and compared with the minimum requirements of AS1668.2-1991 - Provide tender drawings - Stipulate in specification where design occupant density is specified and design outside air rates are nominated</p> <p>NOTE: "Nominated Area" is the occupied space excluding rooms for functional reasons, have specific temperature, humidity, air rate requirements</p>	Mechanical designer Contractor

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Credit Summary



Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Air Change Effectiveness	IEQ - 2	2	2	0	<p>Two points are awarded where the Air Change Effectiveness (ACE) for at least 95% of the NLA meets the following criteria:</p> <p>Naturally Ventilated Spaces A distribution and laminar flow pattern for at least 90% of each space in the direction of air flow for not less than 95% of standard hours of occupancy is demonstrated.</p> <p>Mechanically Air-conditioned and Mechanically Assisted Naturally Ventilated Spaces The ventilation systems are designed to achieve an Air Change Effectiveness (ACE) of >0.95 for at least 95% of the NLA when measured in accordance with ASHRAE 129-1997: 'Measuring Air Change Effectiveness'; and ACE is measured in the breathing zone (nominally 1m from finished floor level).</p> <p>Mixed-Mode Ventilated Spaces The ventilation systems are designed to achieve an Air Change Effectiveness (ACE) of >0.95 when measured in accordance with ASHRAE 129-1997: 'Measuring Air Change Effectiveness'; ACE is measured in the breathing zone (nominally 1m from finished floor level); and A distribution and laminar flow pattern for at least 90% of the NLA of each space in the direction of air flow for 95% of hours of predicted natural ventilation operation is demonstrated.</p>	<p>Mechanical Designer:</p> <ul style="list-style-type: none">- Design the supply and exhaust point to achieve ACE min. 95% of nominated area, incorporate swirl diffusers in design- One FCU/AHU per room/zone- Incorporate 100% outside air cycle <p>Green star consultant: Provide: - Report describing proposed system; including summary table that identifies all spaces in the building and the area, nominates compliant spaces, indicates the ventilation mode and how compliance is achieved as well as confirms that compliant spaces jointly account for at least the stipulated proportion of the NLA; -CFD report and modeling result</p> <p>Mechanical air-conditioned; Measured in the breathing zone (1m from finished floor level); CFD Modelling to demonstrate the Air Change Effectiveness of >0.95 over 95% of nominated area</p> <p>NOTE: Deemed to Satisfied system Displacement system; Evenly distributed; Covers at least 95% nominated area; Diffusers are installed at least every 20 sqm; High level exhaust is installed at least every 50 sqm</p> <p>Diffusion system to be selected to meet criteria, i.e. swirl type diffusers</p> <p>NOTE2: The workstation-based solution must be provided and paid for by the base developer (cost-share is appropriate if agreed to by both the tenant and the owner, if different);</p> <p>The workstation-based solution must be fully installed and operational (commissioned if recommended by the supplier or the design team) prior to occupancy;</p> <p>NOTE3: "Nominated Area" is the occupied space excluding rooms for functional reasons, have specific temperature, humidity, air rate requirements</p>	<p>Mechanical designer Green Star Consultant</p>
	Carbon Dioxide Monitoring and Control	IEQ - 3	1	1	0	<p>One point is awarded where:</p> <p>Naturally ventilated spaces 95% of the NLA is naturally ventilated in accordance with AS1668.2-2002; and Ventilation rates are directly controlled by occupants.</p> <p>Mechanically Air-conditioned and Mechanically Assisted Naturally Ventilated Spaces A carbon dioxide (CO2) monitoring and control system with a minimum of one CO2 sensor at all return points on each floor, is provided to facilitate continuous monitoring and adjustment of outside air ventilation rates to each level, to ensure independent control of ventilation rates to achieve outside air requirements; OR HVAC systems provide 100% outside air with no recirculated component.</p> <p>Mixed-Mode Ventilated Spaces Both modes of operation must satisfy the relevant mechanical and natural ventilation criteria. The points awarded will be limited to the maximum points awarded under the mechanical ventilation criteria.</p>	<p>Mechanical designer / Contractor:</p> <ul style="list-style-type: none">- Provide Carbon Dioxide monitoring and control system, interlock to BMS/Central controller and O/A damper;- Interlock O/A damper as a function of the Carbon Dioxide concentration in accordance to 600 PPM for 50% improved ventilation rate (IEQ-1);- Install CO₂ sensors at all return points- Carbon Dioxide shall be no greater than 600ppm- Provide tender drawings- Identify the proposed HVAC system in specification- Stipulate in specification to identify the proposed HVAC system and outline the requirements and operation. <p>Contractor:</p> <ul style="list-style-type: none">- Install carbon dioxide sensor, interlock to central controller and outside air damper- Details the on-going operation and maintenance requirements of the CO₂ sensors in O&M <p>Commissioning Agent:</p> <ul style="list-style-type: none">- Commission and provide report <p>Green star consultant: Provide summary report</p>	<p>Mechanical designer Contractor Green Star Consultant Commissiong Agent</p>
	Daylight	IEQ - 4	3	1	1	<p>Up to three points are available in his credit; there are two alternative credit criteria:</p> <p>The percentage of the NLA that has a measured Daylight Factor (DF) of not less than 2.0%, at desk-height level (720mm AFFL) under a uniform design sky; OR The percentage of the NLA that has a Daylight Illuminance (DI) of at least 250 Lux.</p> <p>In both cases are the points awarded based on percentage of NLA as per below. One point is awarded for 30% of NLA; Two points are awarded for 60% of NLA; and Three points are awarded for 90% of NLA.</p>	<p>Green star consulting: Provide</p> <ul style="list-style-type: none">- Daylight calculation/modelling to confirm point- Report <p>Architect:</p> <ul style="list-style-type: none">- Nominate all glazing properties and VLT- Provide reflectance values of of paint, carpet etc	<p>Architect Green Star consultant</p>
	Daylight Glare Control	IEQ - 5	1	1	0	<p>One point is awarded where it is demonstrated that glare from daylight is reduced through any combination of the below:</p> <p>Where, for each typical glazing configuration or atrium, fixed shading devices shade the working plane 1.5m in from the centre of the glazing of direct sun at desk height (720mm AFFL) for 80% of standard working hours; OR Where blinds or screens are fitted on all glazing and atriums as a base building provision and meet to following criteria; - Eliminate all direct sun penetration; - Are control with an automatic monitoring system; - Are equipped with a manual override function accessible by occupants; and - Have a visual light transmittance (VLT) of <10%.</p>	<p>Architect: To provide:</p> <ul style="list-style-type: none">- Fixed shading devices shade the working plane, 1.5m in from the centre of the glazing, from direct sun at desk height 720mm FFL for 80% (business hour 8am to 6pm) of standard working hours;- Internal blind is acceptable providing:<ul style="list-style-type: none">A base building provisionEliminate all direct sun lightAutomatic control with manual overrideVLT less than 10%- Confirm operation hour- Where glare is reduced through fixed devices, including visual images of the modelled building from all four elevations and images showing sun penetration of the floor plate for the working hours on the equinox and solstices. Provide summary of the hours where the fixed shading devices do not shade the working plane <p>The visual light transmittance (VLT) of blind has to be less than 10%;</p> <p>Architect/Cost control</p> <ul style="list-style-type: none">- Provid cost estimation <p>Architect:</p> <ul style="list-style-type: none">- Nominate the daylight glare control system and how to achieve compliance- Provide floor drawings with shading effect for each hour from 8am - 6pm <p>Green star consultant:</p> <ul style="list-style-type: none">- Provide summary report	<p>Architect Contractor Green Star consultant</p>
	High Frequency Ballasts	IEQ - 6	1	1	0	<p>One point is awarded where:</p> <p>High frequency ballasts are installed in fluorescent luminaries over a minimum of 95% of the Class 5 Commercial Office NLA.</p>	<p>Electrical designer</p> <ul style="list-style-type: none">- Design with high frequency ballast operate at over 32,000 Hz over a minimum of 95% of the class 5 NLA- Provide cost estimation- Stipulate in specification the use of high frequency ballasts for all the luminaries listed <p>Contractor</p> <ul style="list-style-type: none">- Provide details on all luminaries with types of ballasts and quantities	<p>Electrical designer Contractor</p>

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Credit Summary



Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Electric Lighting Levels	IEQ - 7	1	1	0	<p>One point is awarded where: The office lighting design has a maintained illuminance level of no more than 400 Lux for 95% of the Class 5 Commercial Office NLA as measured at the working plane (720mm AFFL).</p> <p>A dimmable lighting system can be used as an alternative method of compliance for this credit. The project team must demonstrate that:</p> <ul style="list-style-type: none">• The system has been configured to be at a maintained illuminance level as per the Credit Criteria;• The lighting control system has 'restricted' occupant control i.e. A user cannot change the settings to increase the lux levels above the requirements of the Technical Manual;• Where sensors are used to monitor light levels, the lights controlled by it must be within the 'field of view' of the sensor (i.e. if a sensor has a 4m radius, then the centre of each controlled light must be within this zone);• The Building Guides include a specific section detailing how and when occupants can control the light levels and how dimming can change the colour of the lamp (ie a purple fluorescent tube is a sign of extensive dimming, not that the light isn't working); and• Commissioning has been (or will be in the case of a design rating) undertaken to show that light levels have been set for each light fitting via measurement, and that , if any, the sensors have not been overridden, <p>Please note that when assessing lighting energy consumption, the projects must either allow for full power (ie no dimming) or provide evidence of the light's power consumption at various dimming levels.</p>	<p>Electrical designer</p> <ul style="list-style-type: none">- Maintain the illuminance level of no more than 400 Lux for 95% of Class 5 NLA, measure at 720mm AFFL- Stipulate the maximum illuminance lighting level in specification- Provide isolux Plot Drawings marked up to show the location and size of all areas where maintained illuminance levels exceed 400 lux, and correlated with the short statement/report <p>Contractor</p> <ul style="list-style-type: none">- Install as per specification and provide confirm in written form	Electrical designer Contractor
	External Views	IEQ - 8	2	1	0	<p>Up to two points are awarded where: A significant portion of the Class 5 Commercial Office NLA has a direct line of sight to the outdoors or into an adequately sized and day-lit atrium is:</p> <ul style="list-style-type: none">- One point for 60% of the NLA; and- Two points for 80% of the NLA.	<p>Green star consultant/Architect</p> <ul style="list-style-type: none">- Initial calculation shows compliance to 1 point1F: approx. 76.8% as per DA1004[01]2F: approx. 63.8% as per DA1005[01]3-7F: approx. 60.3% as per DA1006[02]	Architect Green Star consultant
	Thermal Comfort	IEQ - 9	2	1	1	<p>Up to two points are awarded where high level of thermal comfort is achieved for all of the Class 5 Commercial NLA through any combination of the below:</p> <p>Naturally ventilated and mechanically assisted naturally ventilated spaces: Where naturally ventilated buildings achieve credit criteria for IEQ-10 'Individual Comfort Control', up to two points are awarded for if Accessibility Limits of ASHRAE Standard 55-2004 are achieved during Standard Operating Hours of Occupancy for 98% of the year:</p> <ul style="list-style-type: none">- One point for internal temperatures within 80% Acceptability Limit 1; and- Two points for internal temperatures within 90% Acceptability Limit 1. <p>Mechanically Air-Conditioned Spaces: Where Predicted Mean Vote (PMV) levels, calculated in accordance with ISO7730, are achieved during Standard Operating Hours of Occupancy for 98% of the year using standard clothing and metabolic rate value:</p> <ul style="list-style-type: none">- One point for PMV levels between -1 and +1, inclusive; and- Two points for PMV levels are between -0.5 and +0.5, inclusive. <p>Mixed-mode Ventilated Spaces: For mixed-mode buildings, the above mechanical and natural ventilation thermal comfort criteria must be met.</p>	<p>Mechanical Designer / Green star consultant:</p> <ul style="list-style-type: none">- Provide calculation to confirm the Predicted Mean Vote (PMV) fall within +1 & -1 in accordance with ISO7730 in Occupied Space;- Provide thermal comfort report- Provide summary report- Stat in specification of all the thermal properties of all materials that used <p>Architect:</p> <ul style="list-style-type: none">- Provide details window schedule <p>NOTE: Deem to Satisfy Criteria Dry bulb temperature within 20 degree C to 24 degree C; Mean radiant temperature of within 20 degree C to 27 degree C; RH within range of 40% to 60%; Air velocity not more than 0.2m/s with no supply directed at occupants (unless they have direct control of the air flor e.g. displacement grilles, task air nozzles); Double glazing is installed on 90% of all fenestration, and 100% of North, East and West orientations; HVAC system must have separate internal and perimeter zones that each provide independent heating, cooling and air volumes; No individual perimeter zone can exceed 100 sqm; A perimeter zone can serve no more than one facade orientation; Each zone must have a thermostat located in that zone</p>	Mechanical designer Architect Green star consultant
	Individual Comfort Control	IEQ - 10	2	0	0	<p>Up to two points are awarded where it is demonstrated that the base building provides for individual user control of air supply rates, air temperature, or mean radiant temperature to each workspace, through any combination of the below:</p> <p>Naturally Ventilated and Mechanically Assisted Naturally Ventilated Spaces Individual user control over ventilation openings, no less than 0.75m2, is provided as follows:</p> <ul style="list-style-type: none">- One point where openings are provided every 30m2 of the NLA; and- Two points where openings are provided every 15m2 of the NLA. <p>Mechanically Air-Conditioned Spaces The base building HVAC system allows for tenant installation of individual user control of thermal comfort to each workspace for each 15m2 or part thereof (including enclosed spaces), as follows:</p> <ul style="list-style-type: none">- One point for 60% of NLA; and- Two points for 90% of NLA. <p>Mixed-Mode Ventilated Spaces For mixed-mode buildings, the above mechanical and natural ventilation thermal comfort criteria must be achieved.</p>	Relatively high cost imposed, credit not claimed	Mechanical designer Architect Green star consultant
	Hazardous Materials	IEQ - 11	0	NA	0	<p>One point is awarded where:</p> <p>A comprehensive hazardous material survey has been carried out on the project site, as defined by the relevant Environmental and Occupational Health and Safety (OH&S) legislation; and Whenever asbestos, lead or Polychlorinated Biphenyls (PCBs) were found, they have been removed in accordance with the standards listed under in the NOTE section.</p> <p>For new developments or developments in which none of the above hazardous materials were found, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Indoor Environment Quality category score. Type 'na' in the No. of points Achieved column</p>	No existing building at Stage 1	
	Internal Noise Levels	IEQ - 12	2	2	0	<p>Up to two points are awarded where 95% of the project's NLA does not exceed the 'Satisfactory' ambient internal noise levels in accordance with AS/NZS 2107:2000, as follows:</p> <p>Building Services Design</p> <ul style="list-style-type: none">- One point is awarded where, within the entire base building general office space, noise from the building services does not exceed 40dBAeq. <p>Overall Building</p> <ul style="list-style-type: none">- One point is awarded where within the base building office space, the sound level does not exceed 40dBAeq (assuming open plan offices).	<p>Cap Corp:</p> <ul style="list-style-type: none">- Engage acoustic engineer to confirm and approve <p>Acoustic consultant:</p> <ul style="list-style-type: none">- To confirm & approve design will not exceed sound levels requirement in Table 1 of AS/NZS2107:2000 for a minimum 95% of the project's nominated area- Provide assessment report. The data provided in the report should clearly justify the conclusion and account for all constant noise sources (hydraulic and mechanical systems that are both internal and external to the space, traffic, etc.). The report shall include a tabulated summary listing the noise levels in all relevant spaces and comparing them to the values prescribed in the standard to aid submission process <p>Commissioning Agent:</p> <ul style="list-style-type: none">- Test and provide report	Cap Corp Acoustic Consultant Commissioning Agent

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Volatile Organic Compounds	IEQ - 13	3	3	0	<p>Up to three points are awarded where the various finishes used in the project meet the benchmarks outlined below as follows:</p> <p>Paints One point where at least 95% of all painted surfaces meet the TVOC Content Limits outlined in Table IEQ-13.1 (low-VOC) or where no paint is used in the project.</p>	<p>Builder / Architect:</p> <ul style="list-style-type: none">- Provide products with low VOC emission in accordance to following values- Confirm VOC emission meet requirement- Provide summary table to Green star consultant, listing and referencing all relevant products, and nominating those that meet the criteria <p>Stipulate in specification:</p> <ul style="list-style-type: none">- Nominate the TVOC limits required for each product within the relevant category type- Stating that the contractor is required to obtain approval of the design team or client before substituting the finishes listed in the schedule;- Requiring that at the end of construction works, the contractor undertakes a final audit to ensure the correct products have been used;- Where the project has no products from a particular category, showing where it is stipulated that no such product is to be used in the project. <p>Contractors / Builder:</p> <ul style="list-style-type: none">- All sealant to be used shall be complied to the following value. Submit product details to Architect / Green star consultant to confirm.- Undertake final audit ot ensure correct products have been used at teh end of construction- VOC Data sheets shall be submitted in the form of:<ol style="list-style-type: none">1) Baboratory test reports or test certificates issued by a NATA or ISO/IEC 17025 certified testing laboratory2) Material Safety Data Sheets (MSDS) stating all VOC testing result in g/litre per product and the test method used to obtain the results. Refer to attached compliant experimental test methods.3) Manufacturer prepared VOC data sheets that demonstrate all VOC value and calculation of the subtotal of all components. Provide a statement from manufacturer stating that the results have been obtained based on the subtotal of the known VOC values of the product's raw material components. <p>Green star consultant: Provide summary report</p> <p>NOTE: Theoretical VOC calculations, based on the subtotal of the known VOC values of the product's raw material components, for adhesive, sealants, or paints can be submitted as evidence for this credit. Project teams must submit a signed letter from the manufacturer listing the VOC results and stating that the calculations have been performed as above. This document substitutes the requirement for test reports or a manufacturer's data sheet. All other documentation stated in the Technical Manual is required.</p> <p>Paints (Max TVOC content allowed, g/L of ready-to-use product) Walls and ceilings - interior gloss 75 g/L; Walls and ceilings - interior semi gloss 16 g/L; Walls and ceilings - interior low sheen 16 g/L; Walls and ceilings - interior flat washable 16 g/L; Ceilings - interior flat 14 g/L; Trim - gloss, semi gloss, satin, varnishes and woodstains 75 g/L; Timber and binding primers 30 g/L; Latex primer for galvanized iron and zincalume 60 g/L; Interior latex undercoat 65 g/L; Interior sealer 65 g/L; One and two pack performance coatings for floors 140 g/L; Any solvent-based coatings whose purpose is not covered in table 200 g/l</p>	<p>Green Star Consultant</p> <p>Architect / Builder to provide product details and schedule</p> <p>Contractors</p>
						<p>Carpets and Flooring One point where all carpets meet the TVOC emissions limits outlined in Table IEQ-13.2 (low-VOC); OR Where no carpet has been installed in the project and projects wish to use low-VOC flooring, one point is awarded where all the flooring installed in the project meet the emissions limits outlined in Table IEQ-13.2.</p> <p>Where no carpet has been installed in the project, the carpet point is 'Not Applicable' and is removed from the total number of points available for the category; type 'na' in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	<p>Carpets</p> <ul style="list-style-type: none">- Total VOC limit 0.5 mg/sqm per hour;- 4-PC (4-Phenylcyclohexene) 0.05 mg/sqm per hour <p>Floor covering products other than carpet (using ISO-16000 test protocol):</p> <ul style="list-style-type: none">- TVOC at three days 5 mg/sqm per hour- TVOC at 28 days 0.5 mg/sqm per hour <p>The following international standards are to be referenced for low-VOC:</p> <ul style="list-style-type: none">• The Australian Environmental Labelling Association, Inc. Standard No: AELA 23-2005 'Australian Voluntary Environmental Labelling Standard Architectural and Protective Coatings'.• South Coast Air Quality Management District (California, U.S.) – Rule 1168 - for adhesives and sealants• Carpet and Rug Institute Green Label (U.S.) – for carpets <p>Following manufactures and products can be referred to. Floor finishes: Ontera modular carpets - http://www.ontera.com.au/ Interface carpets - http://www.interfaceap.com Shaw carpets www.shawtile.com Paints: Berger BreatheEasy http://www.berger.com.au/Flash/breatheeasy.html Dulux Aquanamel http://www.dulux.com.au/html/planning/product_range_interior_walls.aspx</p>	<p>Green Star Consultant</p> <p>Architect / Builder to provide product details and schedule</p> <p>Contractors</p>
						<p>Adhesives and Sealants One point where 95% of all adhesives and sealants meet the TVOC Content Limits outlined in Table IEQ-13.3 (low-VOC) or where no adhesives or sealants are used.</p>	<p>Adhesives & Sealants (Max TVOC content, g/litre of product) Indoor carpet adhesive 50 g/L; Carpet pad adhesive 50 g/L; Wood flooring and laminate adhesive 100 g/L; Rubber flooring adhesive 60 g/L; Sub-floor adhesive 50 g/L; Ceramic tile adhesive 65 g/L; Cove base adhesive 50 g/L; Dry wall & panel adhesive 50 g/L; Multipurpose construction adhesive 70 g/L; Structural glazing adhesive 100 g/L; Architectural sealants 250 g/l</p>	<p>Green Star Consultant</p> <p>Architect / Builder to provide product details and schedule</p> <p>Contractors</p>

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Formaldehyde Minimisation	IEQ - 14	1	1	0	<p>One point is awarded where all composite wood products (including exposed and concealed applications) either: Contain low-emission formaldehyde. OR Contain no formaldehyde.</p> <p>If no engineered wood products are used within the project, this credit is 'Not Applicable' and is removed from the total number of points available for the category; type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	<p>Architect:</p> <ul style="list-style-type: none">- Stipulated in specification 95% of all engineered wood products must have low formaldehyde emissions (refer to attached document - IEQ-9 Formaldehyde emission limit values for different testing protocols)- List and referencing all engineered wood products used in the project, provide summary table- Clearly identify the products that meet criteria in the table attached IEQ 9- Stat in specification the formaldehyde content or emissions standard for all engineered wood products used in the project- Stipulat in specification that contractor is required to obtain the approval of the design team or client before substituting the engineered wood products listed in the schedule <p>NOTE: The following applications are excluded from this credit</p> <ul style="list-style-type: none">- any engineered wood products used in exterior application- formwork- internal car park applications- re-used engineered wood products- raw timber <p>NOTE2: The emission levels must be established by a NATA or ISO/IEC17025 registered laboratory as per the testing methodologies provided in the attached table IEQ 9</p> <p>NOTE3: - Engineered wood products, particle board, MDF, decorative overlaid wood panels, must confirm to formaldehyde testing outlined in AS4266.16-2004 and emission shall be no greater than the limit value provided in IEQ-9 Emission Limit table</p> <ul style="list-style-type: none">- Veneer and plywood must conform to formaldehyde testing outlined in AS/NZS2098.11-2005 and emission shall be no greater than the limit value provided in IEQ-9 Emission Limit table- Emission of formaldehyde from the final product shall not exceed 0.1 ppm after 28 days when tested and certified in accordance with EN717-1. Should any test is to be carried out in accordance with other accepted international standard, refer to IEQ-9 Emissions Limit table, result must be correlated to EN 717-1.	Architect
	Mould Prevention	IEQ - 15	1	0	1	<p>One point is awarded where it is demonstrated that: The mechanically air-conditioned ventilation system actively controls humidity to be no more than 60% relative humidity in the space and no more than 80% relative humidity in the supply ductwork; OR The building is fully naturally ventilated.</p>	<p>Install humidity sensors in all ductwork and interlock to BMS to ensure the humidity control;</p> <p>(might require reheat element which involves energy & cost impact)</p>	Mech Desinger Constractor
	Tenant Exhaust Riser	IEQ - 16	1	1	0	<p>One point is awarded where the building includes a dedicated tenant's exhaust riser with the following characteristics:</p> <ul style="list-style-type: none">- Complies with section 5.7 of AS1668.2-2002;- Provides no less than 0.2 L/s/m² for 100% of the NLA;- Has a capacity of 0.35 L/s/ m² for 100% of NLA on any individual floor; and- The exhaust system is not recycled to other enclosures of different use.	<p>Mechanical designer:</p> <ul style="list-style-type: none">- Outline the design criteria for the exhaust riser and demonstrate compliance with the credit in specification <p>Contractors: Install tenant exhaust riser; Tenant exhaust riser must NOT serve the kitchenette or tearoom</p> <p>A grade building requirement</p>	Mech Desinger Constractor
		TOTAL	26	17	3			
Energy								
	Conditional Requirement	Ene -	-	-	0	<p>To meet the conditional requirement: The project's predicted greenhouse gas emissions must not exceed 110 kgCO2/m2/annum as determined using energy modelling in accordance with:</p> <p>The Australian Building Greenhouse Rating (ABGR) Validation Protocol for Computer Simulations. OR The final and current version of the Green Star Energy Calculator Guide.</p>		
	Greenhouse Gas Emissions	Ene - 1	20	5	0	<p>Up to twenty points are awarded where it is demonstrated that the building's predicted greenhouse gas emissions have been further reduced below the Conditional Requirement. No evidence is required in addition to that submitted for Ene – Conditional Requirement.</p>	<p>Mechanical designer/Green Star Consultant: Provide energy modelling based on:</p> <ul style="list-style-type: none">- Gas fired VRF heat recovery system with economy cycle to office and;- Miscellaneous ventilation system- Tenant cooling tower- T5 high efficiency lighting system- Carpark supply and exhaust with CO monitory and VSD- 6 Lifts <p>Architect/Services designers/Contractors/Lift contractors/Cap Corp</p> <ul style="list-style-type: none">- Glazing schedule and performance details- Lighting schedule and power consumption details- Design specification from all services- Pumps & all ancillary equipments details- Lift details- DHW <p>Green star consultant:</p> <ul style="list-style-type: none">- Model based on benchmark building in accordance with Section J JV3 and DTS value- Finalize energy model and report	All services designers Contractor Green Star consultant Architect Cap Corp Lift contractor
	Energy Sub-metering	Ene - 2	2	2	0	<p>Up to two points are awarded as follows:</p> <p>One point is awarded where: It is demonstrated that sub-metering is provided for substantive energy uses within the building (i.e. all energy uses of 100kVa or greater); and There is an effective mechanism for monitoring energy consumption data.</p>	<p>Mech/Elect/Hydr Services:</p> <ul style="list-style-type: none">- Provide/install meter to meet 2 points criteria- Electrical consumption shall be measured separately for each primary functional space- Provide ??? meters for electrical TBC, meter shall be provided to all energy uses of 100kVa or greater, meters shall measure the tenant and base building consumption seprative for future NABERS rating; sub meter shall be provided seperately to lighting, power on each floor/tenant- Provide ??? meters for mechanical TBC, sub-meter shall be provided seperately record the consumption on each floor, carpark, tenant equipment- Describe in specification how the consumption data will be collected, recorded and monitored during the operation of the building- Provide summary table of all metered primary functional spaces- Describe in specification how electricity metering is provided separately for lighting and separately for power for each primary functional space, including how data is collected, recorded and monitored;- State in specification the installation requirements for each meter- All meters shall be connected to BMCS- Provide cost estimation <p>Green Star consultant:</p> <ul style="list-style-type: none">- Provide summary report	Elec Desinger Mech Designer Contractors

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
						An additional point is awarded where: - The point above is achieved; - It is demonstrated that sub-metering is provided separately for lighting and separately for power for each floor or tenancy, whichever is smaller; and - There is an effective mechanism for monitoring water consumption data.		
	Lighting Power Density	Ene - 3	3	2	0	Up to three points are awarded where it is demonstrated that the lighting power densities for 95% of the NLA meets the following criteria at 720mm AFFL with the default maintenance factor of 0.8: One point for energy use of 2.5 W/m² per 100 Lux; Two points for energy use of 2.0 W/m² per 100 Lux; and Three points for energy use of 1.5 W/m² per 100 Lux.	Electrical service - Design lighting with 2.0 W/sqm per 100 Lux (average of NLA); - Provide a summary short report detailing he lighting power density calculation, stating the working plane used in the calculation - Provide a summary table that lists all layouts and their area, demonstrating that compliant areas jointly account for at least 95% NLA - Details lighting design and requirements in specification Contractor: - Provide summary of the type and quantity of fittings supplied to the project, list of items shall come from the suppliers - Provide statement to confirm the location and type of fittings installed, clearly identify on drawings Commissioning agent: - Conduct commissioning - Provide report detailing the measurement data, stating the working plane used for measurement and confirming compliance of each typical layout	Elect Designer Contractor Commissioning Agent
	Lighting Zoning	Ene - 4	2	2	0	Up to two points are awarded as follows: One point is awarded where it is demonstrated that: All individual or enclosed spaces are individually switched; The size of individually switched lighting zones does not exceed 100m² for 95% of the NLA; and Switching is clearly labelled and easily accessible by building occupants.	Electrical designer: - Design lighting zone to no greater than 100 sqm for 95% NLA; - Install individual switch with label; - Switches must be installed within the 100 sqm zone and at every entry; - In order to claim the second point, lighting fixture over 90% of NLA must be able to be readdressed/regrouped without rewiring (individually addressable), provide Dail control system with highlevel interface - Details the requirements for switching and zoning in specification - Provide a summary table that lists all separately switched zones and their area, demonstrating that compliant areas jointly account for the stipulated proportion of the NLA - Provide cost estimation Commissioning agent: - Provide statement that lighting system has been commissioned and operates as intended by design. All commissioning data shall be presented in a clear and neat format ready for submission. Contractor: - Supply and install the propsed lighting system and wiring control - Provide statement to confirm the system has been installed and wired as designed - Provide as-installed drawing NOTE: Motion occupancy sensors are treated the same way as manual switching, they must be automated with a mnaual override and connected to BMS with time control	Elect Designer Contractor Commissioning Agent
						An additional point is awarded where: - The point above is achieved; and - It is demonstrated that an individually addressable lighting system is provided for 90% of the NLA.		
	Peak Energy Demand Reduction	Ene - 5	2	0	1	Up to two points are awarded where it is demonstrated that the building has reduced its peak electrical demand load on electricity infrastructure as follows: One point where: Peak electrical demand is actively reduced by 15%; OR The difference between the peak and average demand does not exceed 40%. Two points where: Peak electrical demand is actively reduced by 30%; OR The difference between the peak and average demand does not exceed 20%.	Mechanical Designer: - Provide details and final selection on AC system, based on Gas fired VRV; Co-generation; Tri-generation; - Provide final equipment schedules Electrical Designer: - Compliance TBC - Provide short report justifying, with supporting calculations, the building's peak demand value - Detailing, with supportin gcalculations, the design, operation, and sufficient capacity of teh intended system - Calculation as per AS3000 - Identify what active mechanism will ensure that the demand on the infrastructure will at no point exceed the stipulated percentage of the building's demand - Details the proposed system/solution in specification Commissioning agent: -Commission the system - Provide report demonstrating the system have been commissioned and operate as intended, appending relevant test data, and referencing the O&M manual NOTE: Peak energy demand is teh predicted annual peak to be calculated as teh sum of all distribution bars relevant to the base building in electrical schematics. Calculation must be: - In accordance with AS3000; - As the absolute design capacity of the system, after the application of diversity factors but prior to the application of contingency factors as required for utility aggrements; mixed-mode ventilated buildings must be calculated as per the mechanically air-conditioned mode; - Tenant light and power is not to be included in assessment - Assuming the BCA DTS approach for building fabric Might consider: Photovoltaics with battery storage; Fuel cells; Energy & thermal storage system; Co/Tri-generation (relatively expensive); Micro turbine	Elect Designer Mech Designer Commissioning agent
		TOTAL	29	11	1			
Transport								

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Provision of Car Parking	Tra - 1	2	0	1	<p>Up to two points are awarded as follows:</p> <p>One point is awarded where the number of car parking spaces is:</p> <ul style="list-style-type: none">- At least 25% less than the maximum local planning allowances applicable to the project. <p>OR</p> <ul style="list-style-type: none">- Not to exceed the minimum planning allowance by more than 10% <p>Two points are awarded where the number of car parking spaces is:</p> <ul style="list-style-type: none">- At least 50% less than the maximum local planning allowances applicable to the project. <p>OR</p> <ul style="list-style-type: none">- No more than the minimum local planning allowances. <p>Where car parking is not permitted in the local planning scheme, this credit is 'Not Applicable' and is excluded from the points available to calculate the Transport Category Score, type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	<p>Cap Corp:</p> <ul style="list-style-type: none">- Provide council carparking allowance details- Provide DA approval certificate and relevant documents <p>Architect :</p> <ul style="list-style-type: none">- Provide XXX carspaces to Stage 1 <p>Green Star Consultant:</p> <ul style="list-style-type: none">- Prepare summary report	Cap Corp Architect Green Star consultant to provide summary
	Fuel-Efficient Transport	Tra - 2	1	0	0	<p>One point is awarded where:</p> <ul style="list-style-type: none">- A minimum 80% of all spaces designated for use by car-pool participants, small cars, hybrid, or other alternative fuel vehicles must be preferred parking space; and <p>Of the total parking spaces on the site:</p> <ul style="list-style-type: none">- A minimum of 10% or 10 parking spaces (whichever is the greater) are designed and labelled for small vehicles, in accordance with AS/NZS2890.1:2004; and- A minimum of 5% or 5 parking spaces (whichever is the greater) are designed and labelled for mopeds and/or motorbikes, in accordance with AS/NZS2890.1:2004. <p>If no parking spaces are to be provided this credit is 'Not Applicable' and is excluded from the points available used to calculate the Transport Category Score, type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	<p>TBC</p> <p>NOTE: small car parking spaces, 2300 x 5000 W x L motorcycles parking spaces, 1200 x 2500 W x L</p>	Architect Cap Corp Green star consultant
	Cyclist Facilities	Tra - 3	3	3	0	<p>Up to three points are awarded as follows:</p> <p>One point is awarded where the following are provided:</p> <ul style="list-style-type: none">- Secure bicycle storage for 5% of building staff (based on one person per 15m2 of NLA);- Accessible showers (based on one per 10 bicycle spaces provided or part thereof);- Changing facilities adjacent to showers; and- One secure locker per bicycle space in the changing facilities. <p>Two points are awarded where the following are provided:</p> <ul style="list-style-type: none">- Secure bicycle storage for 10% of building staff (based on one person per 15m2 of NLA);- Accessible showers (based on one per 10 bicycle spaces provided or part thereof);- Changing facilities adjacent to showers; and- One secure locker per bicycle space in the changing facilities.	<p>Architect:</p> <ul style="list-style-type: none">- Provide bicycle path from building entrance to parking area <p>Provide</p> <ul style="list-style-type: none">- 104 bike rack for building staffs, facility has to be secure in weather proofed enclosure close to main entrance- 11 Accessible showers (based on one per 10 bicycle spaces provided or part thereof) shall be provided;- One secure locker per bicycle space in the changing facilities shall be provided- Change room must be located next to shower- 21 bicycle parking spaces for visitors. Visitor racks must be located near a major public entrance and not intended for sole or primary use by couriers. <p>Racks shall comply with AS2890.3. Railings, lampposts and other non-purposeful bike parking facilities do not comply with Greenstar protocol</p> <ul style="list-style-type: none">- Rack/rails shall be covered and protected from the elements and designed to AS2890.3 with both wheel and the frame to be locked securely; <p>Alternatively, a locked bicycle shed with access for staff only shall be provided. Sufficient space must be provided to store all bikes without having to move other bikes or rely on a bike's integral stand. Fixture to lock bikes in this case are not required.</p> <ul style="list-style-type: none">- Details the number of showers, lockers and storage/parking spaces provided in specification- Stipulate in specification that storage/parking spaces must comply with AS2890.3 and the requirement for compliance, i.e. racking, locking details, visitors' parking, shower & changing facilities accessibility	Architect Green Star consultant to provide summary Electrical designer Hydraulic designer Builder Contractor
						<p>An additional point is awarded where:</p> <ul style="list-style-type: none">- The requirements for either one or two points have been met; and- Visitor bicycle parking is provided and meets the following criteria: <p>One space per 750m2 NLA or part thereof; and</p> <p>Provided in an accessible location, signposted and close to, or adjacent to, a major public entrance to the building.</p>	<p>Builder/Contractor (racks)</p> <ul style="list-style-type: none">- Provide confirmation on the number of bicycle storage space provided from the supplier- Supply and install in accordance with AS2890, provide statement- Supply and install storage space for visitors in accordance with AS2890.3, confirm the number from suppliers and statement <p>Electrical Designer:</p> <ul style="list-style-type: none">- Lighting/signage is designed in accordance with AS1158- Provide tender drawings showing lighting and signage provided to the bicycle path <p>Hydraulic Designer:</p> <ul style="list-style-type: none">- Provide 11 accessible showers <p>Green Star Consultant:</p> <ul style="list-style-type: none">- Provide summary report <p>NOTE: Secure lockers should not be significantly smaller than 80cm tall by 25cm wide or 180cm tall by 40cm wide;</p>	
	Commuting Mass Transport	Tra - 4	5	2	1	<p>Up to five points are awarded for the quality of mass transport options available to building occupants. The points are determined using the Green Star Mass Transport Calculator based on:</p> <ul style="list-style-type: none">- The type of mass transport services available within 1000m of the site;- The number of routes served; and- The average interval between services during weekday peak hours. <p>The points are determined using the Green Star Public Transport Calculator.</p>	<p>TBC, at the moment 2 points</p>	Green star consultant
		TOTAL	11	5	2			
Water								

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Occupant Amenity Water	Wat - 1	5	1	0	<p>Up to five points are awarded where the predicted potable water consumption for sanitary use within the building has been reduced against a 'best practice' benchmark.</p> <p>The points are determined by the Green Star Potable Water Calculator.</p>	<p>Hydraulic designer / Landscape / Architect:</p> <ul style="list-style-type: none">- ??? toilets, each WELS 5 stars, average 3 L/flush dual flush- ??? urinals, each WELS 5 stars, 2 L/min, with auto timer- ??? indoor taps, WELS 5 stars basin taps (General), average 6 L/min- ??? indoor taps, WELS 3 stars (cleaner room), average 9 L/min- ??? showers, WELS 5 stars, 9 L/mins- Confirm the consumption for irrigation, size of tank- Confirm rainwater re-use, tank size, collect area, quantity- Confirm grey water re-cycle, tank size, percentage of re-use, tank size- ???% of toilets use rainwater- ???% of indoor taps use rainwater- ???% of shower taps use rainwater- ???% of irrigation will use rainwater- Rainwater used for other purposes ???- Rainwater available for ALL uses ???kl per week <p>Stipulate in specification:</p> <ul style="list-style-type: none">- State the minimum water consumption level of all fitting has been designed in accordance to above- Provide details for all hydraulic fixtures and fittings, any water reuse systems and teh water collection systems with a specific mention of the capacity of the system and the portion of each individual application consumption <p>Architect:</p> <ul style="list-style-type: none">- Provide descriptions in specification of all the water-efficient features in the building- Provide a summary of all fixtures and fitting schedule and their flow rate- Stipulate in specification that the water consumption of all fitting must comply with the value listed above <p>Contractors/Commissioning Agent:</p> <ul style="list-style-type: none">- Provide commissioning report demonstrating that the relevant systems have been installed and commissioned and operate as intended by the design. Report shall refer to the O&M manual to indicate that all the intended gydraulic fixtures and fittings and all water reuse, collection and storage systems have been installed- Provide as-install schedule of all fitting with their flow rate <p>Green star consultant:</p> <ul style="list-style-type: none">- Provide summary report	<p>Hydraulic designer</p> <p>Architect</p> <p>Contractor</p> <p>Green Star consultant</p> <p>Commissiong Agent</p>
	Water Meters	Wat - 2	1	1	0	<p>One point is awarded where:</p> <ul style="list-style-type: none">- Water meters are installed for all major water uses in the project; and- There is an effective mechanism for monitoring water consumption data.	<p>Hydr Services:</p> <ul style="list-style-type: none">- Provide/install meter to meet requirement- Provide water meters to all major water use, i.e. 1 for bathrooms, 1 for irrigation, 1 for rainwater supply, 1 for grey water, 1 for hot water, 1 for cold water, 1 fore bore water, Hydraulic to confirm- Identify major water uses, describe in specification- Describe in specification how the consumption data will be collected, recorded and monitored during the operation of the building including the function of the alert and leak detection systems, identify all major water uses- Provide summary table of all metered spaces- Provide details in specifaction regarding teh major water uses and stipulate the sub-metering requirements. All water meters are to be connected to the BMS- All meters shall be connected to BMCS for record and monitoring. BMS shall be provided with a leak detection system and include an alarm in the event of a new trend in water consumption. <p>Mech Services/Contractor:</p> <ul style="list-style-type: none">- Incorporate the additional DDC point from water meter into BMS- Provide cost <p>Commissioning agent:</p> <ul style="list-style-type: none">- Provide report showing that all the meters and the monitoring system have been commissioned and are operating as intended <p>Green Star consultant:</p> <ul style="list-style-type: none">- Provide summary report <p>NOTE 1:</p> <p>Major water uses</p> <ul style="list-style-type: none">- Bathrooms;- Showers (if provided for at least 5% of staff);- Evaporative heat rejection systems;- Irrigation systems;- Wash down systems;- Rainwater supply;- Recycled water supply;- Humidifiers	<p>Hydraulic designer</p> <p>Contractor</p> <p>Mechanical</p> <p>Commissiong agent</p> <p>Green star consultant</p>
	Landscape Irrigation	Wat - 3	1	1	0	<p>One point is awarded where:</p> <ul style="list-style-type: none">- Potable water consumption for landscape irrigation has been reduced by 90% <p>OR</p> <ul style="list-style-type: none">- A xeriscape garden has been installed. <p>If there is no landscaping, or landscaping represents less than 1% of the site area, this point is 'Not Applicable' and is excluded from the points available used to calculate the Water Category Score. Type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	<p>Architect / Landscape Architect:</p> <ul style="list-style-type: none">- Confirm Landscape area to be ??? sqm- Confirm irrigation water consumption ??? kL/week- Details in specification the proposed landscape irrigation system, its water sources and operation requirements- Provide landscape report to justify why the design can be classified as 'xeriscaping'- Total landscape area including roof, vertical and planter gardens has to be no less than 1% of site area. <p>Cap Corp:</p> <ul style="list-style-type: none">- Provide short statement stating that the provision of irrigation systems for teh xeriscape garden will be removed within three months of landscaping installation and no water will be supplied to the landscape after completion. <p>Hydraulic designer:</p> <ul style="list-style-type: none">- 100% rainwater for irrigation- Provide details of portable water consumption referencing the water efficiency regulation for comparison- Identify the proposed landscape irrigation system, water source and operation requirement in specification <p>Contractors:</p> <ul style="list-style-type: none">- Install water tank for rainwater storage and irrigation- Provide commissioning report demonstrates the system has been installed, commissioned and operates as intended by the design <p>Green star consultant:</p> <ul style="list-style-type: none">- Provide summary report <p>Commissioning agent:</p> <ul style="list-style-type: none">- Provide commissioning and report demonstrating that the system has been commissioned and operates as intended by the design, and expressed in the hydraulics report	<p>Hydraulic / Landscape designer</p> <p>Architect</p> <p>Green star consultant</p> <p>Contractor</p> <p>Cap Corp</p> <p>Commissiong agent</p>

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	Heat Rejection Water	Wat - 4	4	2	2	<p>Up to four points are awarded as follows:</p> <p>Two points are awarded where:</p> <ul style="list-style-type: none">- Potable water consumption of water-based heat rejection systems is reduced by 50%; and <p>Four points are awarded where:</p> <ul style="list-style-type: none">- Potable water consumption of water-based heat rejection systems is reduced by 90%; <p>OR</p> <ul style="list-style-type: none">- No water-based heat rejection systems are provided. <p>NOTE:</p> <p>The use of non-chemical dosing (such as ionisation, UV treatment etc) or the elimination of water cooled systems can significantly reduce potable water consumption.</p>	<p>System TBC</p> <p>Mechanical designer:</p> <ul style="list-style-type: none">- Details in specification- Include side stream filtration system, eliminate chemical dosing- Provide calculation to justify the portable water requirement for an average day in January, April, July and October <p>Hydraulic designer:</p> <ul style="list-style-type: none">- Provision of water to cooling tower from rainwater tank, 100% reduction in portable wawter consumption, confirmation if capacity is ok- Details in specification of the proposed system <p>Contractors:</p> <ul style="list-style-type: none">- Install water supply pipes- Provide commissioning report demonstrating that the installed system has been fully commissioned and operates as intended <p>Green star consultant:</p> <ul style="list-style-type: none">- Provide summary report <p>Commissioning agent:</p> <ul style="list-style-type: none">- Commission system and provide report demonstrating that the installed system has been fully commissioned and operates as intended by the design	Mechanical designer Hydraulic designer Contractor Green star consultant Commissioning agent
	Fire System Water Consumption	Wat - 5	1	1	0	<p>One point is awarded where:</p> <ul style="list-style-type: none">- There is sufficient temporary storage for a minimum of 80% of the routine fire protection system test water and maintenance drain-downs, for reuse on-site; and- Each floor fitted with a sprinkler system has isolation valves or shut-off points for floor-by-floor testing; <p>OR</p> <ul style="list-style-type: none">- The fire protection system does not expel water for testing. <p>If the building does not have a sprinkler system, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Water Category Score.</p>	<p>Hydraulic designer/Fire Engineer:</p> <ul style="list-style-type: none">- Confirm tank size and system ???- Design sprinkler system to not expel water during testing- Install storage tank for fire test water or for fire test water AND rainwater/recycled water. The size of storage of the latter case must be designed to avoid overflow of collected water into the sewerage system or the watercourse;- Details in specification regarding the fire protection system components and their properties- Details in specification regarding the fire protection system, its operation and testing requirements and how the water will be reused on site- Where no sprinkler system to be installed, justification shall be provided in Fire Engineering report and refer to relevant clauses <p>Commissioning agent:</p> <ul style="list-style-type: none">- Provide commissioning and report demonstrating that teh fire protection system has been commissioned and operates as intended <p>NOTE:</p> <p>Need water storage tank for fire testing water; Or increase the rainwater storage tank size, it must be designed to avoid overflow of collected test water into the sewerage system; Re-use water onsite for e.g. irrigation/put back to fire system</p> <p>NOTE2:</p> <p>The fire protection system is deemed to include:</p> <ul style="list-style-type: none">- Hydrants;- Firehose reel;- Storage and sprinkler-test tanks;- Sprinkler-test and drain-down points <p>As sprinkler water may not be suitable for reuse, sprinklers and sprinkler pipe drain-down water can be excluded.</p>	Hydraulic designer Fire engineer Contractor Commissioning agent
		TOTAL	12	6	2			
Materials								
	Recycling Waste Storage	Mat - 1	2	2	0	<p>Two points are awarded where a dedicated storage area for the separation and collection of office recyclables is provided and it:</p> <ul style="list-style-type: none">- Is adequately sized in accordance with 'Sizing the Waste Storage Area' table (Table Mat-1.1);- Meets the access requirements of 'Policy for Waste Minimisation in New Developments' (NSW, 2004): Section A, points A-12 through A-17, and Section C, points C6 and C7; and- Is located in the same level as the loading dock with clearly marked, sign-posted, convenient, guaranteed access route within one of the following walking distances:<ul style="list-style-type: none">- 20m of the exit used for recycling pick-up; <p>OR</p> <ul style="list-style-type: none">- 20m of the lift core serving all floors; <p>OR</p> <ul style="list-style-type: none">- 3m of the shortest route connecting the lift core serving all floors and the exit used for recycling pick-up.	<p>Gross Floor Area @ Stage 1: 16408 sqm</p> <p>Architect:</p> <ul style="list-style-type: none">- To provide 0.218% to GFA for Recycling Waste Storage, therefore 36 sqm- Design to 'Policy for Waste Minimisation in New Developments' (NSW, 2004): Section A, points A-12 through A-17, and Section C, points C6 and C7- Provide short report identify the compliance with the 'Policy for Waste Minimisation in New Developments' (NSW, 2004) <p>Green Star consultant:</p> <ul style="list-style-type: none">- Provide summary report	Architect Green Star Consultant
	Building Reuse	Mat - 2	0	NA	0	<p>Six points are available as follows:</p> <p>Up to two points are awarded where a proportion of the total existing façade of the building, by vertical area, is reused:</p> <ul style="list-style-type: none">- One point for reuse of 60%; or- Two points for reuse of 90%. <p>Up to four points are awarded where a proportion of the existing major structure, by gross building volume, is reused:</p> <ul style="list-style-type: none">- Two points for 30% reuse;- Three points for 60% reuse; or- Four points for 90%. <p>Where the site contained no buildings at the time of purchase or the total GFA of the original building(s) is less than 20% of the GFA of the new building that replaces it, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Materials Category Score, type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	<p>Cap Corp:</p> <ul style="list-style-type: none">- Provide statement to confirm no existing building at Stage 1	Cap Corp
	Reused Materials	Mat - 3	1	0	1	<p>One point is awarded where:</p> <p>At least 2% of the project's total contract value is represented by reused products/materials.</p> <p>This credit excludes materials specifically addressed by other credits (i.e. steel, concrete, PVC and timber); neither does it address the reuse of the original building(s) on the site (addressed in Mat-2 'Building Reuse').</p>	<p>Cap Corp/Architect/Structural designer/All services designer:</p> <ul style="list-style-type: none">- Confirm if possible to achieve, all reuse materials (exclude steel, concrete, PVC and timber) make up to a min. 2% of contract value <p>Architect/Structural/All services</p> <ul style="list-style-type: none">- Stipulate all reused products and materials and the associated quantities in specification- Provide list of schedule and associated cost <p>Cost control:</p> <ul style="list-style-type: none">- Estimate cost <p>Cap Corp:</p> <ul style="list-style-type: none">- Provide statement stating the project's total value <p>Contractors:</p> <ul style="list-style-type: none">- Supply and install all reuse products in accordance with relevant specification or to the Green star requirement should this credit is claimed- Provide statement that all reused items have been installed- Provide evidence of reuse of products, such as purchase receipts of items from a second-hand retailer etc	Cap Corp Architect Structural All services Contractors

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	Shell and Core or Integrated Fit-out	Mat - 4	2	0	0	Two points are available as follows: Up to two points are awarded where a percentage of the (NLA) of the project is delivered as any combination of shell and core or integrated fitout. - One point for 60% of NLA; or - Two points for 90% of NLA.	Cap corp / Architect: - Confirm lease agreement, identify S&C and Integrated Fitout area	Cap corp Architect
	Concrete	Mat - 5	3	3	0	Three points are available as follows: Up to three points are available where the project has reduced the absolute quantity of Portland cement, as an average across all concrete mixes, by substituting it with industrial waste product(s) or oversized aggregate as follows: - For 1 point, 30% for in-situ concrete, 20% for pre-cast concrete and 15% for stressed concrete; or - For 2 points, 60% for in-situ concrete, 40% for pre-cast concrete and 30% for stressed concrete.	Structural designer/Builder/Contractor: - Design to reduce portland cement by 60% for all in-situ concrete, 40% for pre-cast concrete and 30% for stressed concrete - Design to min. 20% of all aggregate used for structural purposes is recycled and no natural aggregates are used in non-structural uses - Estimate the total material value of the new concrete as a proportion of the project's total value (can be undertaken by other suitable person) - Provide Concrete technologist report, breakdown of all concrete uses in the project, with the description, volume, composition and proportions of components clearly identified for each mix and use; indicate the volume of Portland cement replaced by the industrial waste product or oversize aggregate; if oversized aggregate is used, calculations to demonstrate that this approach is equivalent to reducing the amount of cement used in a project by replacing it with industrial waste products - Structural designer to identify the proportion of industrial waste product to be used in place of cement where industrial waste product is to be used. Where oversized aggregate is to be used for cement replacement, identify the use of oversize aggregate in order to reduce the amount of cement required in a project - (Additional Point) Identify all aggregate uses in the project, describe where recycled or natural aggregate is used and demonstrate the credit criteria is met Structural designer: Stipulate in specification - Details all concrete in the project - Stating industrial waste product shall come from industrial facilities co-fired with hazardous waste - Where industrial waste product is being used for cement replacement, identifying the proportion of industrial waste product to be used in place of cement - Where oversized aggregate is being used for cement replacement, identifying the use of oversize aggregate in order to reduce the amount of cement required - Norminate the proportion of recycled aggregate to be used and stipulate that the recycled aggregate be classified as Class 1 RCA in accordance with HB 155-2002	Builder Structural designer
						An additional point is awarded where: - At least one of the above points is achieved; - 20% of all aggregate used for structural purposes is recycled (Class 1 RCA in accordance with HB155-2002) or slag aggregate; and - No natural aggregates are used in non-structural uses (e.g. bulding base course, sub-grade to any car parks and footpaths, backfilling to service trenches, kerb and gutter). If the material cost of new concrete represents less than 1% of the project's contract value, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Materials Category Score, type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.	NOTE: Recycled concrete aggregates — produced by the reclamation, crushing and screening of demolition concrete waste, AND, slag aggreggate which is an industrial waste product. Reclaimed aggregates — Produced from unused fresh concrete returned to its manufacturer in a state such that separation of the aggregates from the cement paste is still possible by washing and or screening, AND produced from crushing selected surface rock from excavation works associated with building construction. NOTE2: Where the credit is claimed as 'Not Applicable', projects may provide, in place of the Quantity Surveyor report, either a Report from a Structural Engineer, or a report from the Cost Planner, stating that the quantities of the total material value of the new concrete as a proportion of the project's total value represents less than 1% of the project's contract value.	
	Steel	Mat-6	2	1	1	Up to two points are awarded where at least 95% of all steel used in the building's structure complies with the criteria set out below, and is sourced from a responsible steel maker. Points are awarded as follows: • Where structural steel comprises 60% or more of the total steel used in the structure, one point is awarded for each of the two initiatives met below: - At least 95% of all Category A products and at least 25% of Category B products (see Table 1) meet or exceed the nominated steel strength grades and are permanently marked with their strength grade; - At least 60% of the fabricated structural steelwork is supplied by a steel fabricator / steel contractor accredited to the Environmental Sustainability Charter of the Australian Steel Institute. • Where reinforcing steel comprises 60% or more of the total steel used in the structure of the building, one point is awarded for each of the two initiatives met below: -At least 95% of all reinforcing bar and mesh meets or exceeds 500MPa strength grade, and at least 60% of all reinforcing steel is produced using energy-reducing processes in its manufacture (measured by average mass by steel maker annually); - At least 95% of all reinforcing steel meets or exceeds 500MPa strength grade, and at least 15% (by mass) of all reinforcing steel is assembled using off site optimal fabrication techniques detailed in Table 2. Where neither structural steel nor reinforcing steel comprises more than 60% of the total steel used in the structure, a combination of any of these criteria as set out above can be used to achieve the credit for a maximum of two points. See Additional Guidance for more information. If the material cost of structural and reinforcing steels represents less than 1% of the project's total contract value, or there are no new structural or reinforcing steels used in the project, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Materials Category Score.	Builder/Structural designer/Quantity Surveyor: - Estimates the total mass and material cost of the steel within the building structure - Confirm the ratio (by mass) of the structural steel to total steel and reinforcing stell to total steel - Install high strength grade structural steel, min. 95% of Category A and 25% of Category B (refer to below) - Source structural steelwork from manufacturer accredited to the Environmental Sustainability Charter of the Australian Steel Institute - Provide details/steel schedule stating the content of all steel used in the project. Provide schedule to indicate the total mass of the structural/reinforce steel as a portion of the total steel mass in the project - Calculate the overall percentage of structural/reinforced steel that meet criteria and point claim. Demonstrate via a summary table (and calculations wherever relevant). - Provide report to Identifying the total amount (by mass) and strength grade of steel used within the building structure; Identifying all of the applications of steel installed within the building structure; Identifying the product used for each type of application; Short description of the off-site optimal fabrication techniques used in the building's structure If steel was supplied for uses outside the building structure, these uses must be clearly identified and excluded from the calculations. OR Where the credit is claimed as 'Not Applicable', stating that the quantities of the total material value of the new steel as a proportion of the project's total value represents less than 1% of the project's contract value. Structural designer: Stipulate in specification - The revelant structural or reinforcing steel strength grades and the permanent steel marking requirements - As a minimum, the relevant percentage of structural steel be supplied by an ASI accredited steel fabricator or contractor - As a minimum, the relevant percentage of of reinforcing steel be supplied by a steel manufacturer that uses energy-reducing processes, include the benchmark for energy reducing processes - the optimal off-site fabrication techniques used for all reinforcing steel in concrete and percentage (by mass) of reinforcing steel specified for use NOTE: Category A Roof sheeting 550 MPa min. strength grade Wall sheeting 550 MPa min. strength grade Profiled-steel decking 550 MPa min. strength grade Purlins 450 MPa min. strength grade Girts 450 MPa min. strength grade Light steel framing systems 450 MPa min. strength grade (Light-steel framing systems refers to building framing systems made of lightweight cold-rolled galvanised steel sections Category B Hot-rolled structural steels (including plate) (e.g. universal beam and column sections, parallel flange channels, angles) 350 MPa min. strength grade Cold-formed sections (including hollow sections) (e.g. square and rectangular hollow sections, circular hollow sections, cold-formed channels and angles) 450 MPa min. strength grade Welded sections (e.g. welded beams and columns made from plate) 400 MPa min. strength grade Table 2 - Off site Optimal Fabrication of Reinforcing Steel. 1) Engineered Reinforcing Bar Carpet - Reinforcing bars fabricated off site for rolling out on site 2) Engineered/Customised Mesh - Run-to-length meshes, tailored meshes, special size meshes, engineered meshes, variable diameter and spacing meshes 3) Prefabricated Reinforcing Cages - Prefabricated reinforcing cages for concrete elements such as slabs, walls, cores, columns and piles	Builder Structural designer Quantity Surveyor

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	PVC	Mat-7	2	2	0	<p>Up to two points are awarded when a percentage of a project's PVC flooring, resilient wall coverings, cable insulation, pipe and conduit - which together account for the majority of PVC use in buildings and which are referred to as 'common uses of PVC' in this credit – meet the Best Practice Guidelines for PVC in the built environment. For further information on the Best Practice Guidelines see the Additional Guidance section of this credit. Points are awarded as follows:</p> <ul style="list-style-type: none">- One point where at least 60% of the common uses of PVC products in buildings (by cost) complies; and- Two points where at least 90% of the common uses of PVC products in buildings (by cost) complies. <p>If the cost of PVC products in common uses of PVC represents less than 0.05% of the project's total contract value, or there are no PVC products present in the project for any of the common uses of PVC, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Materials Category Score.</p> <p>The total cost of PVC products shall be determined by the cost of teh entire product (excluding installation costs)</p> <p>Documenting compliance of a PVC product to teh Guidelines shall be demonstrated using any of the following pathways:</p> <ul style="list-style-type: none">- ISO14001 certified EMS that includes the requirements of the Best Practice Guidelines;- Independently audited manufacturer's declaration of compliance to the Best Practice Guidelines; or- Product third party certification of compliance to the guidelines (ISO type 5 certificate of eco label).	<p>Architect/All services designers/Contractors:</p> <ul style="list-style-type: none">- Stipulate in specification all PVC used in this project shall be sourced from manufacturers that meet the Best Practice Guidelines for PVC in the Built Environment. Specification shall specifically state the three methods of demonstrating compliance (refer to below- Stipulate in specification that any substitute PVC product of a specified PVC product shall be compliant with the criteria- Design to meet two point requirement, 90% of total PVC (by cost) meets the Best Practice Guidelines for PVC in the built environment <p>Quantity surveyor</p> <ul style="list-style-type: none">- Provide report to1) identify all pipe, conduit and associated fittings, wire and cable insulation and flooring products and PVC content2) state which PVC products in common uses of PVC are compliant (including total combined cost)3) state which PVC products in common uses of PVC are NOT compliant (including total combined cost)4) state the percentage (by cost) of the total PVC products in common uses of PVC that is compliant5) reference to specification from services designer- Report shall include a comparison of all PVC cost to the total project value <p>Cap Corp:</p> <ul style="list-style-type: none">- Provide contract/statement to show the total project value- Engage independent auditor to certify compliance to the Guidelines <p>Contractors:</p> <ul style="list-style-type: none">- All products shall be sourced from manufacturers that meet the Best Practice Guidelines for PVC in the Built Environment. refer to specification from service designers. <p>NOTE: Refer to attached PVC Best Practice Guide</p> <p>Re-used PVC is defined as PVC products pre-existing in a building or fitout, or PVC products procured from a second hand source. Re-used PVC product sources may include, but are not limited to second hand retailers, removalists, auction houses, and demolition works from previous sites. Re-used PVC products may be excluded from documentation in this credit</p> <p>Products containing recycled PVC content shall be documented in the credit and comply with teh Best Practice Guidelines as even PVC products with high recycled content require some virgin PVC in their production. Claims of recycled content in such products by suppliers or manufacturers must be independently verified. This requirement is incorporated in the Best Practice Guidelines for PVC in the Built Environment.</p> <p>All specified PVC (refer to relevant specification) is to be independently verified as compliant with the Best Practice Guidelines for PVC in the Built Environment. Documenting compliance of a PVC product to the Best Practice Guidelines shall be demonstrated using any of the following pathways:</p> <p>1) Environmental Management System (EMS): Inclusion of the Best Practice Guidelines for PVC in the manufacturer or supplier's independently audited ISO 14001, Environmental Management Systems (EMS). Audits must be conducted by a JAS-ANZ (or equivalent) accredited certification body on a biannual basis. The compliance certificate issued by the auditor must provide written assurance of compliance to the guidelines and serves as the documentation needed to establish compliance with the credit via the EMS option; or</p> <p>2) Product Declaration: Manufacturer or supplier product declaration that the producer-specific and product performance-specific criteria of the Best Practice Guidelines for PVC have been met for a specific product. The product declaration must be independently audited on a biannual basis by either an accredited auditor registered by RABQSA or another equivalent national or international auditor, or a JAS-ANZ (or equivalent) accredited certification body. A copy of the compliance certificate issued to the manufacturer/supplier by the auditor must be included in the Green Star submission along with a copy of the product declaration. These two items serve as the documenetation required to establish compliance with the credit via the Product Declaration option; or</p> <p>3) Product Certification: Independent accreditation program(s) or product certification schemes that integrate the producer-specific and product perform,ance-specific criteria of the Guidelines into standare(s) or certification criteria (e.g. Type 5 ISO product certification, and eco labels). Independent accreditation programs and product certification schemes must compliance with Part I, Setion A – Governance and Transparency of the GBCA Assessment Framework for Product Certification Schemes. Evidence of independent accreditation of the product(s) (e.g. to an ISO Type 5 certification such as an Australian Standard or to a GBCA – recognised eco label) must be provided to Green Star project teams for inclusion in Green Star submissions and serves as the documentation needed to establish compliance with the credit via the Product Certification option.</p>	All services designers Quantity surveyor Contractors
	Timber	Mat-8	1	1	0	<p>Up to two points are awarded as follows:</p> <ul style="list-style-type: none">- One point where at least 95% (by cost) of all timber used in the building and construction works is certified by a forest certification scheme that meets the GBCA's 'Essential' criteria for forest certification (e.g. all schemes accredited by FSC International or PEFC); or is from a reused source; or is sourced from a combination of both.	<p>Structural designer/Architect:</p> <ul style="list-style-type: none">- Design to meet 1 point requirement, 95% by cost of all timber is certified by a forest certification scheme- Stipulate in specification requiring that any certified timber used in the project is supplied in accordance with the Chain of Custody (CoC) rules of the respective forest certification scheme- Stipulate in specification requiring that contractor to obtain approval of the design team or client before substituting the timber listed in specification- Sourced from manufacturers with FSC certification- Provide description demonstrating how this requirement is met and provide calculations (breakdown of all components by area, length and mass). Where the actual cost of the item is known then this cost must be reported. where the actual cost of re-used items is not known then the cost may be estimated on the basis of replacement cost (the cost of an equivalent new item). <p>Quantity surveyor:</p> <ul style="list-style-type: none">- Provide summary report- Nominate all timber uses- Reference to specifications from Architect / Structural desinger for all timber uses in the project to demonstrate that at least 95% of all timber (by cost is either re-used or certified- Confirm total cost of timber in relation to the total project's contract value. The contract value is defined as teh dollar value required to complete the works for the entire project, including site works (landscaping, external paving, etc). Excluedeing. Demolition works, consultants, design fees, project management fees, works outside the site area and buildings or areas within the site that are not being assessed for purposes of Green star. <p>NOTE1: A current list of holders of the FSC chain-of-custody and management Certificate can be found on the following website: http://www.fsc-info.org/</p> <p>NOTE2: The following applies to 95% of all formwork in a project for purposes of this credit:</p> <ul style="list-style-type: none">- New formwork must have Forest Stewardship Council certification.- Formwork that was new for this project that did not have Forest Stewardship Council certification, and was reused within this project cannot claim this credit.- Formwork that has been previously used in another project and has been used in this registered project can be deemed reused. <p>NOTE3: For timber products to receive points within the Green Star 'Sustainable Timber' credit for the use of FSC certified timber, a full Chain of Custody (CoC) must exist through the supply chain to the project. That is, all FSC certified wood materials sourced by, and used on, the project must come from suppliers that have a valid FSC Chain of Custody certificate. For example, if a board manufacturer who has FSC certification sells the board to a contractor for installation on the building, full chain-of-custody exists to the project. However, if the board manufacturer provides product to the workstation manufacturer who doesn't have FSC certification, who then sells it to the project, then CoC is lost, and Green Star points can not be claimed. Entities that have been contracted/subcontracted to purchase, transform and/or install FSC certified wood specifically for the project do not need to be Chain on Custody holders themselves. Instead, these entities must prove (e.g. by providing invoices that include a current CoC code) that they have purchased the certified material directly from suppliers that have a valid Chain of Custody certificate.</p>	Architect Structural designer Quantity Surveyor

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
						<p>* Two points* where at least 95% (by cost) of all timber used in the building and construction works is certified by a forest certification scheme that meets both the GBCA's 'Essential' and 'Significant' criteria for forest certification; or is from a reused source; or is sourced from a combination of both.</p> <p>* Only one point is currently available when claiming this credit. Further work is being undertaken on the 'Significant' criteria for forest management, against which forest certification schemes can be assessed to qualify certified timber for a second point in this credit. The second point will be N/A until the 'Significant Criteria' are implemented.</p> <p>A list of up-to-date GBCA recognised forest certification schemes can be found on the GBCA website at www.gbca.org.au.</p> <p>If the material cost of timber represents less than 0.1% of the project's total contract value then this credit is 'Not Applicable' and is excluded from the points available used to calculate the Materials Category Score.</p>	N/A	
	Design for Disassembly	Mat - 9	1	0	0	<p>One point is awarded where:</p> <ul style="list-style-type: none">- 50% (by area) of the structural framing, roofing, and façade cladding systems are designed for disassembly. <p>OR</p> <ul style="list-style-type: none">- 95% of the total façade is designed for disassembly. <p>If the material cost of the structural framing, roofing, and façade cladding systems represent less than 1% of the project's total contract value, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Materials Category Score, type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	Point not claimed	
	Dematerialisation	Mat - 10	1	1	0	<p>One point is available where a substantial reduction in materials consumption occurs as follows:</p> <p>Where within projects where at least 50% of the GFA is framed in structural steel, and where it is demonstrated that the building's structural requirements and integrity have been achieved using 20% less steel (by mass) than in a structure with conventional steel framing, without changing the load path to other structural components.</p> <p>OR</p> <p>Where any two of the initiatives below are demonstrated:</p> <p>Structure</p> <p>Within projects where at least 50% of the GFA is framed in structural steel, and where it is demonstrated that the building's structural requirements and integrity have been achieved using 10% less steel (by mass) than in a structure with conventional steel framing, without changing the load path to other structural components.</p> <p>Ductwork</p> <p>The building is fully naturally ventilated;</p> <p>OR</p> <p>The requirement for ductwork has been reduced by 95%.</p> <p>Building Efficiency</p> <p>For new buildings, where it is demonstrated that Building Efficiency, defined as the ratio of the total NLA over the total GFA, is at least 85%.</p> <p>Finishes</p> <p>As-installed final design must require no finish.</p> <p>95% of all base building floor material is exposed structure with no covering (e.g. exposed sealed concrete floor);</p> <p>OR</p> <p>95% of all base building ceiling is exposed structure (and services, where relevant) with no cladding (e.g. exposed concrete ceiling).</p> <p>Cladding</p> <p>25% of the roof cladding area has a dual function (e.g. roof garden substrate or photovoltaic shingles serve as cladding);</p> <p>OR</p> <p>25% of the façade cladding area has a dual function (e.g. photovoltaic panels serve as cladding).</p> <p>Piping</p> <p>No piping is used for urinals (i.e. all urinals are waterfree);</p> <p>OR</p> <p>No piping is used for toilets (i.e. all toilets are waterfree);</p> <p>OR</p> <p>Mass of underground piping is reduced by 25% for the same functional requirement and material.</p>	<p>Aim for Building Efficiency & Roof cladding; Cap corp, Architect Hydraulic to advise</p> <p>Architect:</p> <ul style="list-style-type: none">- At the moment achieve 95% NLA/GLA- Provide roof garden to 25% of roof area to claim the cladding credit, might consider "xeriscape" on roof- Nominate in specification the relevant details for the point claim. <p>Hydraulic designer:</p> <ul style="list-style-type: none">- Provide drain, irrigation to roof garden <p>Cost control:</p> <ul style="list-style-type: none">- Estimate cost <p>Green star consultant:</p> <ul style="list-style-type: none">- Provide summary report	Architect Cap Corp
		TOTAL	15	10	2			
Land Use & Ecology								
	Conditional Requirement	Eco -	0	-	0	<p>The Eco-Conditional Requirement is met where the project site is not:</p> <ul style="list-style-type: none">• On prime agricultural land; should the project site be on prime agricultural land then this project is not eligible for a Green Star certified rating;• On land containing old-growth forest; should the project site be on land containing old-growth forest then this project is not eligible for a Green Star certified rating;• Within 100 metres of a wetland listed as being of 'high ecological value'. Should the project site be within 100 metres of a wetland listed as being of 'high ecological value', then the project can only be deemed eligible for a Green Star certified rating if the project is defined as a 'refurbishment' and the Wetland Protection Measures (outlined below) have been completed;• Within 100 metres of a wetland NOT listed as being of high ecological value. Should the project site be within 100 metres of a wetland NOT listed as being of high ecological value, then the project can only be deemed eligible for a Green Star certified rating if the Wetland Protection Measures (outlined below) have been completed. <p>Wetland Protection Measures</p> <ul style="list-style-type: none">• A site-specific Wetland Management Plan has been produced, exhibited and implemented; and• All points are achieved in Emi-5 'Watercourse Pollution' and in Emi-7 'Light Pollution'. <p>The GBCA reserves the right to provide the final ruling on a project's compliance with this Conditional Requirement.</p>		
	Topsoil	Eco - 1	1	1	0	<p>One point is awarded where:</p> <ul style="list-style-type: none">- All topsoil impacted by the construction works is separated and protected from degradation, erosion or mixing with fill or waste;- There is no net change in the volume of topsoil on the site; and- 95% of all topsoil (by volume) retains its productivity. <p>Where no topsoil was impacted by the construction works, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Land Use & Ecology Category Score, type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.</p>	<p>Architect / Cap Corp / Builder:</p> <ul style="list-style-type: none">- Confirm existing topsoil quantity- Engage site surveyor- Provide topsoil storage on site, base on the outcome from survey;- Retain all topsoil- Engage site surveyor- Provide report to describe the scope and extent of the construction works, how they will affect existing topsoil, describe how the integrity of the site's topsoil will be protected throughout construction works- Provide description with calculation of the "before" and "after" conditions that account for all topsoil on the site, and clearly confirm that no more than 5% of the site's topsoil will be covered by hard surfaces as a consequence of the design, a minimum 95% of the topsoil will remain productive- Stipulate in contract the requirements of topsoil management that the contractor and sub-contractors must adhere to <p>Site surveyor:</p> <ul style="list-style-type: none">- Quantify the amount of topsoil on site- Provide survey report, justify all assumptions <p>Cost control:</p> <ul style="list-style-type: none">- Provide cost estimation <p>Contractor:</p> <ul style="list-style-type: none">- Confirm no top soil is exported from site- Quantify the amount of topsoil covered by hard surfaces- Provide short report describing the process to retain the top soil during construction <p>NOTE</p> <p>Topsoil is defined as the surface layer of soil containing partly decomposed organic debris.</p>	Architect Cap Corp Builder Surveyor Contractors

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Reuse of Land	Eco - 2	1	0	0	One point is awarded as follows: If the project is a refurbishment or a building extension; OR If at the time of the site purchase, 75% of the site had been previously built on.	Greenstar classify stage 1 site is "Previously developed land" due to carpark exists; however it does not make up to 75% of site area	Cap Corp
	Reclaimed Contaminated Land	Eco - 3	2	0	0	Two points are awarded where: - The site was contaminated at the time of purchase; and - The developer has undertaken full remedial steps to decontaminate the site prior to construction. This credit is 'Not Applicable' for projects that are refurbishments or building extensions, and is excluded from the points available used to calculate the Land Use & Ecology Category Score; type "na" in the appropriate 'No. of Points Achieved' column of the rating tool.	Points not claimed	
	Change of Ecological Value	Eco - 4	4	1	1	Up to four points are awarded where: - For Greenfield sites, the site has no threatened or vulnerable species and for reused sites (e.g. refurbishments), such species are adequately protected if present; - There is no net reduction of native vegetation; and - The ecological value of the site is either not diminished, or is enhanced beyond its previously existing state. The points are determined by the Green Star Change in Ecology Calculator on the basis of comparison between the 'before' and the 'after' ecological value of the site.	Target minimum 2 points Cap Corp: - Engage site surveyor to identify all land type on site Site surveyor: - Provide all existing green land type and building area on site - Fill in the attached Ecology Value Calculator and photograph site condition; Architect / Landscape: - Enhance green land (increase the number of plant, e.g. garden, grassland, lawn, etc) - Provide landscape plan clearly identify all proposed green land type, in accordance with the list in the Greenstar Ecology Value Calculator - Fill in the attached Ecology Value Calculator - Provide summary report to identify the conditions and time periods necessary for installed land types - Provide site report from the relevant authority identifying the site's bioregion and confirming or refuting the presence of endangered, threatened or vulnerable species on the site - Details any planting and any requirements necessary to ensure the landscape functions - if value species found on site, provide "Endangered species protection plan". Plan shall include: identifying the threatened or vulnerable species present on site, identifying the conditions necessary for the thriving of these species and outlines the plan for protecting the species Green star consultant - Points to be confirmed upon details, potential to 1 or 2 points NOTE The existing state is defined as the state at the time of site purchase, please confirm if changes occurred throughout this period	Cap Corp Site surveyor Architect Landscape
		TOTAL	8	2	1			
Emissions								
	Refrigerant ODP	Emi - 1	1	1	0	One point is awarded where - All HVAC refrigerants have an Ozone Depletion Potential (ODP) of zero OR - No refrigerants are used.	Mechanical designer: - Use R134a or R410a refrigerant - Provide full mechanical equipment details including VRV condensers - Details in specification regarding HVAC system - Stipulate in specification to meet ODP requirement Contractor: - Confirming all equipments - Provide the mass and type of the refrigerant - Install AC units with zero ODP refrigerant	Mechanical designer Contractor
	Refrigerant GWP	Emi - 2	2	0	0	Up to two points are awarded as follows: - One point where 50% of the fluorocarbon refrigerant charge has been replaced with refrigerant(s) that have a Global Warming Potential (GWP) of 10 or less; and - Two points where all refrigerants have a GWP of 10 or less OR where no refrigerants are used at all.	Comply only if design with absorption chiller with refrigerant ammonia, however on site generation plant will need to be installed, meaning co/tri-generation system Does not comply if use R410a/R134a refrigerant, Point to be confirmed	Mechanical designer Contractor
	Refrigerant Leaks	Emi - 3	2	2	0	Up to two points are awarded as follows: One point is awarded where: - HVAC Systems containing refrigerants are contained in a moderately air tight enclosure; and - A refrigerant leak detection system is installed to cover high-risk parts of the plant.	Mechanical designer: - Install refrigeration leakage detection system, interlock to BMS; - Introduce pump-down mechanism for refrigerant, interlock to leakage detection system - Provide report to describe the system - Details the refrigerant leak detection and recover pump down system in specification Contractors: - Supply and install as required, interlock to BMS - Provide details explaining the correct operation of the refrigerant leak detection and recovery system	Mechanical designer Contractor
						An additional point is awarded where: - The point above is achieved; and - The project has installed a refrigerant recovery system that is: - Equipped with an automated pump-down system; and - Sized to effectively and safely capture, isolate, and store 95% (by weight) of the maximum refrigerant charge. Where the project is fully naturally ventilated or is fully mechanically assisted naturally ventilated OR if all points in Emi-1 'Refrigerant ODP' and Emi-2 'Refrigerant GWP' are achieved, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Emissions Category Score; type "NA" in the appropriate 'No. of Points Achieved' column of the rating tool.		

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Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Insulant ODP	Emi - 4	1	1	0	One point is awarded where no ozone-depleting substances are associated with either the manufacture or the composition of all thermal insulants in the project.	All services desingers / Architect: - Use zero ODP insulant, insulation shall not contain Ozone Depleting substances or involve the use of such substances during its manufacture - Nominate all the insulation uses, provide summary table - Stipulate in specification that only the insulant with zero ODP emission shall be used - Provide short statement stating that there are no thermal or acoustic insulant in the building emit zero ODP Green star consultant: - Provide summary report Contractors / Builder - Insulation shall not contain Ozone Depleting substances or involve the use of such substances during its manufacture NOTE: Insulants included (but not limited to) - Chilled/Hot water pipework - Refrigerant pipework - Ductwork - Hot and cold water pipes - Water tanks - AHU - Building fabric insulation, e.g. wall, roof, floor, window frames, doors spandrel panels etc - Acoustic insulation	All services designer Architect Contractors
	Watercourse Pollution	Emi - 5	3	2	1	Up to three points are awarded as follows: Two points are awarded where: - The development does not increase peak stormwater flows for rainfall events of up to a 1-in 2 year storm; and - All stormwater leaving the site, at any time up to a 1-in-20 year storm event, is treated or filtered in accordance with either: - CSIRO Urban Stormwater: Best Practice Environmental Management Guidelines. OR - Australian and New Zealand Environment Conservation Council (ANZECC)'s Guidelines for Urban Stormwater Management.	Civil / Hydr to confirm eligibility and advise e.g. Install oil and sediment arrester; Install sand filters, grassed swales; Install permeable paving materials, e.g. porous asphalt/concrete; Rainwater harvesting for toilet flushing/irrigation; Roof garden to retain water, however negative effect on structure; Vegetated filter strips to help remove pollutants from stormwater; TBC with Hydraulic designer NOTE: Install rainwater storage tank for harvesting, tank size and location to be confirmed by Hydraulic designer	Civil consultant Hydraulic consultant
						An additional point is awarded where: - The point above is achieved; and - A riparian buffer zone that has three separate zones of pollution buffering is installed within 9 meters of a waterway or natural watercourse and the development. Where the project site does not contain or is not immediately adjacent to a waterway, the additional point is 'Not Applicable' and is excluded from the points available used to calculate the Emissions Category Score, type "NA" in the appropriate 'No. of Points Achieved' column of the rating tool.		
	Discharge to Sewer	Emi - 6	5	4	0	Up to five points are available as follows: Up to four points are awarded where the building outflows to the sewerage system due to building occupants' usage have been reduced against an average-practice benchmark as follows: - One point for a 30% reduction; - Two points for a 50% reduction; - Three points for a 70% reduction; and - Four points for a 90% reduction.	Hydraulic designer/Architect: - Confirm the number of toilet/showers/urinal etc, flush rate - Install greywater treatment plant; - Reuse treated water for irrigation, toilet flush - Details any water treatment plant in specification; how it works and its treatment capacity compared with typical demand annually Commissioning agent: - Provide commissioning and report demonstrating system have been commissioned and operate as intended NOTE: Greywater storage size and location to be confirmed by Hydraulic designer, might required earth removal	Hydraulic Contractor
						An additional point is awarded where: - At least one point above was achieved; - There is a Blackwater Treatment Maintenance Plan; and - There is a maintenance contract for a minimum of five year to ensure that the blackwater treatment system operates as intended by the design. Where no blackwater treatment system is installed, the additional point is 'Not Applicable' and is excluded from the points available used to calculate the Emissions Category Score: type "NA" in the appropriate 'No. of Points Achieved' column of the rating tool.		
	Light Pollution	Emi - 7	1	1	0	One point is awarded where: - No light beam, generated from within the building or outside of the building boundary, is directed at any point in the sky hemisphere without falling directly onto a non-transparent surface; - The lighting design complies with AS4282 "Control of the Obrusive Effects of Outdoor Lighting"; and - 95% of outdoor spaces do not exceed the minimum requirements of AS1158 for illuminance levels.	Electrical designer: - Design in accordance with AS4282 - Provide lighting/luminaire schedule nominating the type, location and quantity - Provide calculation plot for all external lighting, showing all grid points on the calculation plane return a direct illuminance reading of zero lux - Design to eliminate all direct light source to the sky; - Design in accordance to AS4282; - Provide report detailing the lighting system and how criteria is met; referencing photometric data and illumination diagrams for all external luminaires; demonstrating the external lighting has been designed in accordance with AS4282 - Details all relevant lighting and its requirements in specification Contractor: - Supply and install as intend - Provide statement to confirm all light fittings are installed at each corresponding area and operate as intended	Electrical designer Contractor
	Legionella	Emi - 8	1	0	1	One point is awarded where: • There are no water based heat rejection system(s) serving the building; OR • Water-based heat rejection system(s) meet all of the following: <input type="checkbox"/> -Do not contain water that is kept at a temperature between 20°C and 50°C; <input type="checkbox"/> -Do not release an aerosol spray during operation; <input type="checkbox"/> -Are designed and built to maintain constant movement of the water in the system, when in operation, to prevent stagnation; <input type="checkbox"/> -Are designed and built for routine and periodic flushing to remove bio-film buildup and stagnant water from the system(s) whenever it is not in operation; and <input type="checkbox"/> -Are designed, located and built in accordance with AS/NZS 3666.1:2002; AND • A Legionella Risk Management plan has been prepared in accordance with AS/NZS 3666.2:2002 or AS/NZS 3666.3:2000 and has been included in the O&M manual provided to the building owner. This credit is applicable to all projects registered after December 18th, 2008. All projects registered prior to this date can choose to use this new credit in its entirety or use the credit issued within the Technical Manual.	Cooling tower on site, unlikely to claim point	Mechanical designer Contractor
		TOTAL	16	11	2			

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Credit Summary



Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed	Credit Criteria Summary	Action	Responsible
	Sub-total weighted points:	56			10			
Innovation								
	Innovative Strategies & Technologies	Inn-1	2	0	0	Up to five Innovation points are awarded at the discretion of the Green Building Council of Australia (GBCA) where it is demonstrated that an innovative strategy or technology is eligible for AusIndustry Research and Development tax concessions and has a significant environmental benefit. The application will be assessed by the GBCA against the following criteria: • Does the application comply with AusIndustry Research and Development tax concessions requirements? • What is the environmental benefit of the innovation? More than one innovation can be submitted, however, the maximum points available for any one building assessment under Inn-1, Inn-2 and Inn-3 is five (total).	TBC	
	Exceeding Green Star Benchmarks	Inn-2	2	0	0	Up to five Innovation points are awarded at the discretion of the Green Building Council of Australia (GBCA) where it is demonstrated that the building exceeds, by a measurable margin, one or more existing Green Star – Industrial PILOT credit category criteria. The application will be assessed by the GBCA against the following criteria: • How has the building initiative exceeded the benchmarks in the Green Star – Industrial PILOT rating tool? • What is the measurable environmental benefit of the innovation? More than one innovation can be submitted, however, the maximum points available for any one building assessment under Inn-1, Inn-2 and Inn-3 is five (total).	TBC	
	Environmental Design Initiatives	Inn-3	1	0	0	Up to five Innovation points are awarded at the discretion of the Green Building Council of Australia (GBCA) where it is demonstrated that a design feature provides a significant environmental benefit but is not awarded points under the Green Star – Industrial PILOT rating tool criteria. The application will be assessed by the GBCA against the following criteria: • What is the measurable environmental benefit of the innovation? • Which significant environmental benefits of the innovation have been addressed by Green Star – Industrial PILOT credits? More than one innovation can be submitted but the maximum points available for any one building assessment under Inn-1, Inn-2 and Inn-3 is five (total).	TBC	
TOTAL			5	0	0			

Total weighted points: 56 10

Once certified this would equate to a Four Star rating.

The GBCA does not endorse any self-assessed rating achieved by the use of Green Star - Office V3. The GBCA offers a formal certification process for ratings of Four Stars and above; this service provides for independent third party review of points claimed to ensure all points can be demonstrated to be achieved by the provision of the necessary documentary evidence. The use of Green Star - Office V3 without formal certification by the GBCA does not entitle the user or any other party to promote the Green Star rating achieved.