

Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) The Haymarket

Sustainability Report for Stage 2 State Significant Development Application (SSDA 3)

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Page | ii

1	INTRODUCTION	2
1.1	Overview of Proposed Development.....	3
1.2	Background.....	3
1.3	Site Description.....	5
1.4	Planning Approvals Strategy.....	7
2	THE URBANEST DESIGN PHILOSOPHY	8
3	THE URBANEST GREEN STAR CUSTOM TOOL	9
4	PROJECT DESCRIPTION	10
5	SUSTAINABILITY OBJECTIVES	12
6	BUILDING CODE OF AUSTRALIA SECTION J	13
6.1	Building Fabric	14
6.2	Glazing	15
6.3	Building Sealing	17
6.4	Air Conditioning and Ventilation	18
6.5	Artificial Lighting and Power	18
6.6	Hot Water Supply.....	18
6.7	Access for Maintenance and Facilities for Monitoring.....	18
7	GREEN STAR URBANEST CUSTOM TOOL	19
7.1	Area Definitions	21
8	SUSTAINABILITY INITIATIVES.....	22
8.1	Management.....	22
8.2	Indoor Environment Quality.....	24
8.3	Energy	28
8.4	Transport	29
8.5	Water	32
8.6	Materials	33
8.7	Land Use and Ecology.....	35
8.8	Emissions	36
9	PROJECT MILESTONES	37
	APPENDIX A: GREEN STAR SCORECARD.....	39
	APPENDIX B: GREEN STAR ACTION LISTS.....	40

This report supports a State Significant Development (SSD) Development Application (DA) submitted to the Minister for Planning and Infrastructure pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

More specifically this subsequent DA seeks approval for a residential building (student accommodation) within the western development plot (Darling Drive) of The Haymarket and associated public domain works. The DA has been prepared and structured to be consistent with the Concept Proposal DA.

- Detail how Ecologically Sustainable Development (ESD) principles (As defined in Clause 7 (4) of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*) will be incorporated in the design, construction and ongoing operation phases of the development;
- Address the potential for sustainable technologies and/or renewable energy; and,
- Provide an integrated Water Management Plan including alternative water supply, proposed end uses of potable and non-potable water, water sensitive urban design (WSUD) and water conservation measures.

SICEEP The Haymarket Sustainability Report for SSDA3
April 2013

The proposal relates to a detailed ('Stage 2') DA for a residential building (student accommodation) in the Darling Drive Plot of The Haymarket together with associated public domain works. The Haymarket Site is to be developed for a mix of residential and non-residential uses, including but not limited to residential buildings, commercial, retail, community and open space. The Darling Drive Plot is one of six development plots identified in the Concept Proposal DA.

- Demolition of existing site improvements;
- Associated tree removal and planting;
- Construction and use of one residential building within the Darling Drive Plot, to be used for student accommodation purposes;
- Public domain improvements, including:
 - o Realignment and upgrade of Darling Drive (part);
 - o Provision of a new urban square (known as Macarthur Place) located at the termination of The Goods Line; and,
 - o Extension, realignment and augmentation of physical infrastructure / utilities as required.

The NSW Government considers that a precinct-wide renewal and expansion of the existing convention, exhibition and entertainment centre facilities at Darling Harbour is required, and is committed to Sydney reclaiming its position on centre stage for hosting world-class events with the creation of the Sydney international convention, exhibition and entertainment precinct.

Following an extensive and rigorous Expressions of Interest and Request for Proposals process, a consortium comprising AEG Ogden, Lend Lease, Capella Capital and Spotless was announced by the NSW Government in December 2012 as the preferred proponent to transform Darling Harbour and create the new Sydney international convention, exhibition and entertainment Precinct.

Key features of the Preferred Master Plan include:

- Delivering world-class convention, exhibition and entertainment facilities, including:
 - o Up to 40,000m2 exhibition space;
 - o Over 8,000m2 of meeting rooms space, across 40 rooms;
 - o Overall convention space capacity for more than 12,000 people;
 - o A ballroom capable of accommodating 2,000 people; and
 - o A premium, red-carpet entertainment facility with a capacity of 8,000 persons.
 - o Providing up to 900 hotel rooms in a hotel complex at the northern end of the precinct.
- A vibrant and authentic new neighbourhood at the southern end of the precinct, called 'The Haymarket', including apartments, student accommodation, shops, cafes and restaurants.
- Renewed and upgraded public domain that has been increased by a hectare, including an outdoor event space for up to 27,000 people at an expanded Tumbalong Park.
- Improved pedestrian connections linking to the proposed Ultimo Pedestrian Network drawing people between Central, Chinatown and Cockle Bay Wharf as well as east-west between Ultimo/Pymont and the City.

On 21 March 2013 a critical step in realising the NSW Government's vision for the SICEEP Project was made, with the lodgement of the first two SSD DAs with the Department of Planning and Infrastructure. The key components of these proposals are outlined below.

Public Private Partnership SSD DA (SSD 12_5752)

The Public-Private Partnership (PPP) SSD DA (SSDA 1) includes the core facilities of the SICEEP Project, comprising the new, integrated and world-class convention, exhibition and entertainment facilities along with ancillary commercial premises and public domain upgrades.

The Haymarket Concept Proposal (SSD 13_5878)

The Haymarket Concept Proposal SSD DA (SSDA 2) establishes the vision and planning and development framework which will be the basis for the consent authority to assess detailed development proposals within the Haymarket Site.

This report has been prepared to support a detailed Stage 2 SSD DA for a residential building (student accommodation) and associated public domain works within The Haymarket (SSDA 3), consistent with the Concept Proposal SSD DA.

The SICEEP Site is located within Darling Harbour. Darling Harbour is a 60 hectare waterfront precinct on the south-western edge of the Sydney Central Business District that provides a mix of functions including recreational, tourist, entertainment and business.

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April 2013

SICEEP The Haymarket Sustainability Report for SSDA3
April 2013

- Page | 7

Figure 2. Concept Proposal Development Plots

Urbanest's mission is to set a new Australian benchmark for student accommodation. Urbanest has been providing high quality student accommodation to Australia since February 2008. Urbanest owns, designs, builds, and manages each of its student accommodation facilities. Urbanest is a long-term property owner, manager and neighbour and is committed to the success and suitability for the whole life cycle of each of its developments.



At the conceptual stages of each development, decisions are made on their merits over the full lifecycle of the building, rather than focusing only on the upfront capital costs. Urbanest develops and manages their buildings; hence sustainable practices are pursued beyond design and construction, and into the building operation and management. Urbanest appreciates the value of whole of life sustainability analysis.

3 THE URBANEST GREEN STAR CUSTOM TOOL

Green Star is a comprehensive, national, voluntary environmental rating system that evaluates the environmental design and construction of buildings. A Green Star certification has largely become a representation of market leadership in both the areas of environmental design and premier building design. The Green Star framework currently rates buildings at the design and construction stage only and is administered by the Green Building Council of Australia (GBCA). Buildings achieve 4 star 'Best Practice', 5 star 'Australian Excellence' or 6 star 'World Leadership' certifications. Green Star is effective in clearly branding a development as a market leader. There is currently no Green Star Tool that assesses student accommodation buildings.

Green Star Custom is a tool development service provided by the Green Building Council of Australia (GBCA) who 'custom' build a rating tool to a specific project type for the exclusive use of the organisation which requests this service. Green Star Custom is available to projects that are currently ineligible to be rated under the GBCA's current suite of rating tools.



Urbanest is leading the market in student accommodation through developing their own Green Star Custom Tool. This Custom Tool will assess Urbanest's low and high rise student accommodation buildings and enable the formal certification of these projects as Green Star 4, 5 or 6 star rated projects. The Urbanest Custom Tool is anticipated to be completed in May 2013. Urbanest is currently employing sustainability principles within their projects in accordance with the latest draft version of the Urbanest Custom Tool available from the GBCA through the Custom Tool development process.

The development of this national sustainability framework, commissioned by Urbanest, specifically for student housing projects, is a first for Australia. The development of the Urbanest Custom Tool demonstrates Urbanest's commitment to set a new benchmark in sustainability performance for their student accommodation projects. The Urbanest Custom Tool will ensure for each project that sustainability is incorporated from conceptual design through construction to occupancy and operation.

W2 is a 19 storey student accommodation building located to the south of the Haymarket site. A second student accommodation tower is planned; a 14 storey student accommodation building to be located north of W2. Other proposed developments in The Haymarket include mixed-use development blocks, including a retail/commercial podium with residential towers above, a commercial office building, and public car parking.

W2 is located in a dynamic inner city urban environment and students have access to many amenities both within the building and in close proximity. A wide range of transport options are available to the students with secure bike storage provided, and the new light rail line adjacent to the site. There are many walkways and cycle ways nearby including the Ultimo Pedestrian Network (UPN). W2 is located near to the University of Sydney, the University of Technology, Sydney, and the Technology and Further Education (TAFE) New South Wales.

6 BUILDING CODE OF AUSTRALIA SECTION J

The Urbanest W2 student accommodation development will meet the minimum requirements of Section J Energy Efficiency of the BCA 2013.

Urbanest W2 is located in Climate Zone 5 as per Table A1.1 in Part A1 of the BCA. Areas subject to compliance in accordance with Part A3 of the BCA 2012 include:

- Ground Floor – Common areas including the reception and other common facilities;
- Level 1: Common areas including common facilities such as kitchens; and,
- Levels 2-18: Studio and four (4), five (5) and eight (8) bedroom clusters.

The Deemed-to-Satisfy (DTS) provisions of Section J apply to building elements forming the envelope of the building.

For the purposes of Section J, envelope means the parts of a building's fabric that separate a conditioned space or habitable room from:

- The exterior of the building; or,
- A non-conditioned space including:
 - The floor of a rooftop plant room, lift machine room or the like; and
 - The floor above a car park or warehouse; and
 - The common wall with a carpark, warehouse or the like.

A conditioned space means a space within a building, including a ceiling or under-floor supply air plenum or return air plenum, where the environment is likely, by the intended use of the space, to have its temperature controlled by air conditioning.

Conditioned spaces in the W2 development include:

- Common Areas on the Ground Floor and Level 1; and
- Clusters including bedrooms and living areas on Levels 2 -18.

The proposed air conditioning system will consist of a variable refrigerant volume air conditioning system. All habitable rooms will also be naturally ventilated in accordance with Section F4.6 of the NCC-2011.

Section J addresses energy efficiency requirements relating to:

- Building fabric;
- Glazing;
- Building sealing;
- Air conditioning and ventilation;
- Artificial lighting and power;
- Hot water supply; and,
- Access for maintenance and facilities for monitoring.

Compliance with Section J will be reviewed prior to the submission of the Design Approval to ensure that the proposed development is able to comply with the minimum DTS requirements. Where compliance with the DTS requirements cannot be achieved, alternative verification methods JV1, JV2 and JV3 may be investigated.

Alternative verification methods are frequently considered where the building fabric and glazing does not comply with the DTS requirements due to spatial limitations preventing the installation of insulation or design intent where a greater area of glazing is desired.

The alternative verification methods can be used to demonstrate Section J compliance despite DTS requirements not being met. Alternative verification addresses the building as a whole and analyses the performance of the building to determine if it performs at a level equivalent to or better than a building compliant with the DTS requirements.

The DTS requirements are as described in the following sections.

6.1 Building Fabric

Roofs and Ceilings:

- The roof or ceiling of Level 18 must achieve a minimum total R-Value of $4.2\text{m}^2.\text{K/W}$ in the downwards direction where the roof upper solar absorptance value is greater than 0.6.

Roof Lights:

- No roof lights are proposed for this building.

External Envelope Walls:

- The external envelope walls of the conditioned spaces on the Ground Floor and Level 1 -18 must achieve a minimum Total R-Value of $2.8\text{m}^2.\text{K/W}$.

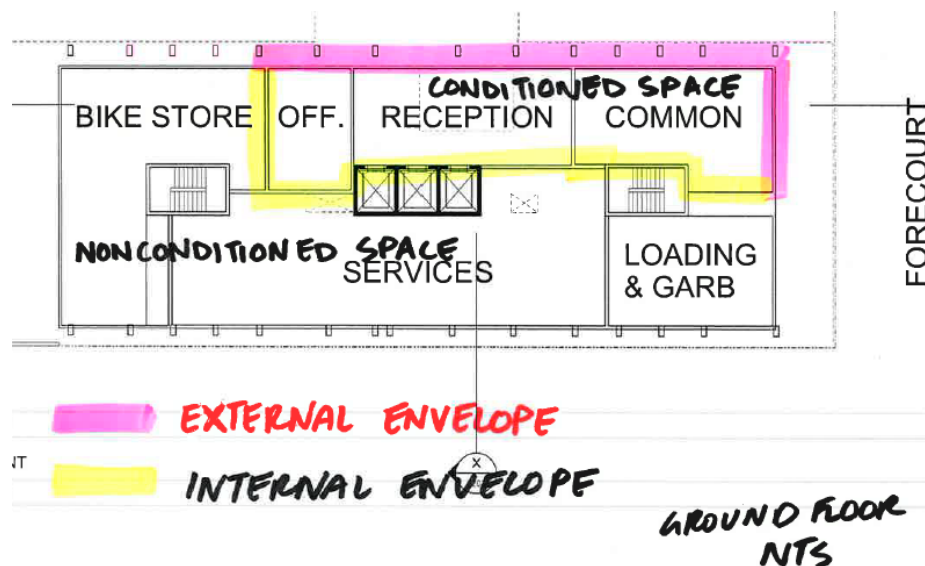


Figure 4. Building Fabric Envelope – Ground Floor

Internal Envelope Walls:

- Where the adjacent non-conditioned space is enclosed with mechanical ventilation of not more than 1.5 air changes per hour of outside air, the internal envelope walls must achieve a minimum Total R-Value of $1.0\text{m}^2.\text{K/W}$.

-
- A detailed floor plan of a building floor. The plan shows various rooms including studios, bedrooms (4-BED, 5-BED, 8-BED), and a 4-BED ALCOVE. A central area is highlighted in pink and labeled "CONDITIONED SPACE". Below the plan, a pink rectangle is labeled "EXTERNAL ENVELOPE". A compass rose indicates North (N) and a scale of 3/8" = 1'-0".

Floors - Slab on Ground:

- ### Floors – Suspended Slab:

- All insulation must comply with AS/NZS 4859.1 and be installed in accordance with Section J1.2 Thermal Construction of the BCA.

The glazing in the external fabric facing each orientation in each storey, including any mezzanine, must be assessed separately in accordance with the DTS Glazing Calculators as issued by the BCA.

Page | 17

- Any evaporative coolers installed in the subject space must be fitted with a self-closing damper or the like when serving a heated space, a habitable room, or public area of a building.

6.4 Air Conditioning and Ventilation

Design certification confirming the subject space has been designed in accordance with Part J5 of Section J BCA 2013 must be provided by the Mechanical System Designer.

6.5 Artificial Lighting and Power

Design certification confirming the subject space has been designed in accordance with Section J BCA 2013 requirements must be provided by the Electrical Lighting and Power System Designer.

6.6 Hot Water Supply

Design certification confirming the subject space has been designed in accordance with Section J BCA 2013 requirements must be provided by the Hydraulic System Designer.

6.7 Access for Maintenance and Facilities for Monitoring

Access must be provided to all plant, equipment and components that require maintenance in accordance with the BCA Part I2.

A facility to record the energy consumption of air-conditioning plant, artificial lighting, appliance power, central hot water supply, internal transport devices, or other ancillary plants must be provided.

The Green Star Urbanest Custom Tool incorporates eight environmental categories as follows:

- Innovation is included as an additional category where the project seeks to demonstrate exceptional sustainability leadership.

Credits are positioned within the environmental categories and points are available within each credit as illustrated for the Management category in the figure below. Targeted credits and associated credit points for the Urbanest W2 development are summarised in the Green Star 'Scorecard' included in Appendix A. The Green Star 'Scorecard' demonstrates the project is targeting 45 credit points plus a 10% 'buffer' to achieve the 4 star Green Star 'Australian Best Practice' design rating.

The Green Star 'Scorecard' is a moving document and hence will be modified throughout the design development.

Sustainability initiatives specific to each environmental category and credit are described in detailed in the sub-sections below.



Page | 21

Attributes proposed for display include:

- Highly efficient building fabric to reduce energy required for heating and cooling;
- Operable windows to allow users to control thermal comfort and reduce need for heating and cooling;
- Installation of the highest rated Water Efficiency Labelling Scheme (WELS) fixtures and fittings to reduce potable water consumption; and,
- Rainwater collection and reuse for toilet flushing and laundry use to reduce potable water consumption and stormwater discharge from the site.

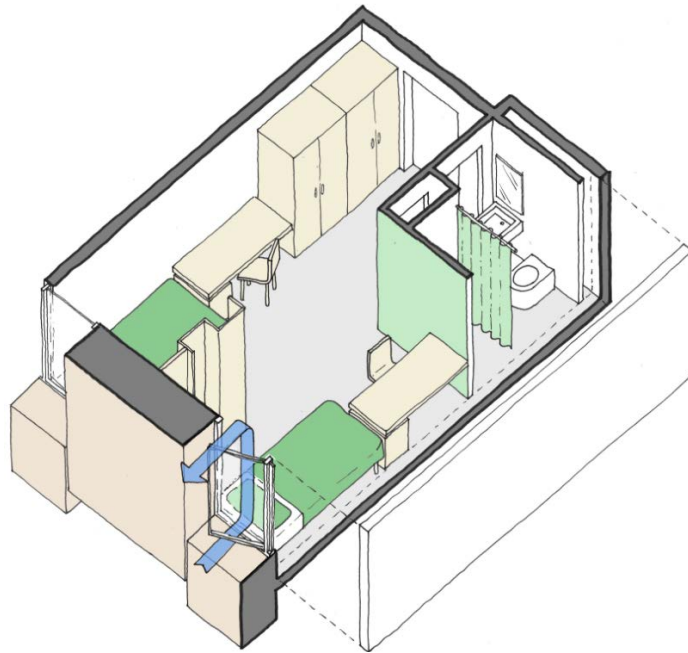


Figure 9. Operable Windows in a Cluster – Bedroom

MAN-17 Operational Waste

Waste stream management: An operational waste management plan, which includes the identification of, reduction of, and handling of common and additional waste and recycling streams, will be developed by an experienced waste auditor for implementation in the project.

Operational waste disposal: All identified common and additional recycling streams will be recycled upon collection.

Common waste streams include general waste and co-mingled waste. Additional streams to be recycled may include: bulky goods; e-waste; and, batteries, collected on the Ground Floor.

Early in the design process, targets for environmental performance of the design will be set by the project design team. A comprehensive services and maintainability review of the project will be performed by the Independent Commissioning Agent (ICA). Comprehensive pre-commissioning activities and commissioning activities will be performed for all nominated systems. A building tuning process will be put in place and responsibilities assigned to have all nominated systems tuned after handover. All activities will be supervised by an Independent Commissioning Agent (ICA) that reports directly to Urbanest.

All bedrooms will be provided with ventilation openings that can be adjusted to provide a constant stream of outside air.

- Locating the outdoor air intakes (including doors and windows used for natural ventilation or the provision of a constant stream of outside air) such that the shortest distance from the intake to any specific potential outdoor contaminant source is in accordance with ASHRAE Standard 62.1-2007, Section 5, Table 5-1; and,
- Designing the outdoor air intakes in accordance with ASHRAE Standard 62.1-2007, Section 5.6 (including all sub-clauses).

- All clusters, including living areas and bedrooms, will be provided with ventilation openings (operable windows or trickle ventilators) that can be adjusted to provide a constant stream of outside air.
- 95% of the common areas (located on the Ground Floor and Level 1) will be provided with ventilation openings that can be adjusted to provide a constant stream of outside air, or will be naturally ventilated in accordance with AS1668.4-2012.

Each cluster, including living areas and bedrooms, will be provided with effective single sided natural ventilation through the provision of operable windows.

The clusters and operable windows and/or trickle ventilators will provide effective sided natural ventilation, in accordance with the following guidelines:

- The maximum depth of the living area or bedroom is 2.5 times the room height;
- All living areas and bedrooms will be fitted with low-level and a high-level ventilation openings. The area of ventilation openings will be at least 5% of the internal floor area served by the opening;
- The total free area of ventilation openings will be at least 10% of the internal floor area of the living area or bedroom in the cluster;
- The bottom of the high-level ventilation opening will be located 1.8m above the Finished Floor Level (FFL). There will be a difference of 1.5m between the bottom edge of the high-level and the top edge of the low-level ventilation openings. There is no minimum height requirement for the low opening;
- The maximum distance from a wall perpendicular to a ventilation opening will be less than 2m; and
- The maximum distance between multiple openings along one facade within a space will be less than 2m.

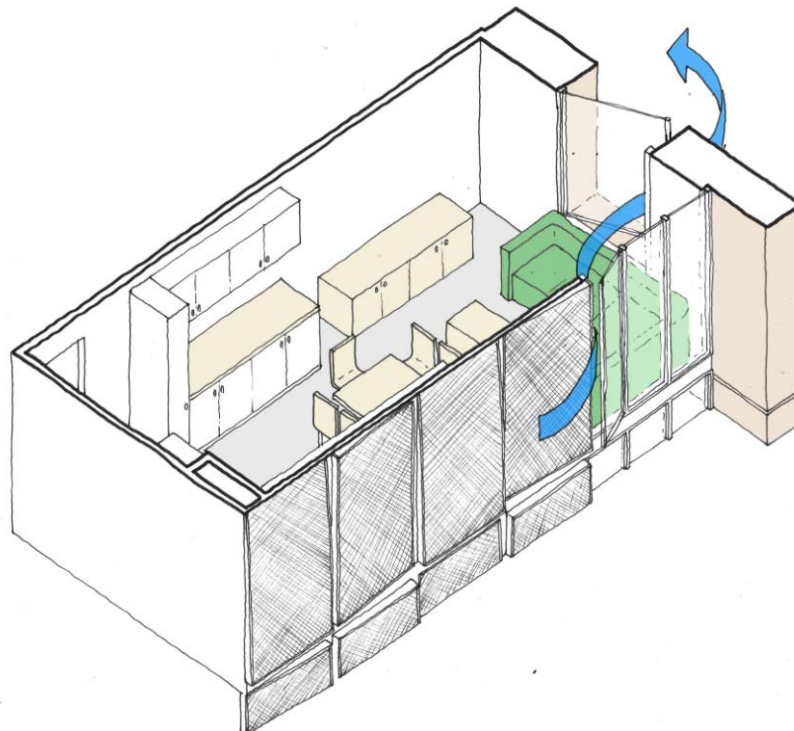


Figure 10. Example of Cross Ventilation in a Cluster – Living Area

A high level of thermal comfort will be achieved for 95% of the bedrooms in the development and 98% of the year through the provision of individual comfort control systems to the building's occupants.

IEQ-8 Volatile Organic Compounds

All paints will meet the Green Star Total Volatile Organic Compound (TVOC) Content Limits in accordance with the GBCA requirements.

All floor coverings will meet the Green Star Total Volatile Organic Compound (TVOC) Content Limits in accordance with the GBCA requirements.

All wall and ceiling coverings will meet the Green Star Total Volatile Organic Compound (TVOC) Content Limits in accordance with the GBCA requirements.

Glare from sunlight in all bedrooms is reduced through the provision of internal blinds.

- The blinds must eliminate 95% of all direct sunlight penetration;
- They must be controlled by all affected occupants within each space within each individual space; and,
- Blinds must have a visual light transmittance (VLT) of $\leq 10\%$.

All lamps in the space will be flicker free, with a Colour Rendering Index (CRI) > 80 (Table 7.2 AS1680.1:2006), a maximum correlated colour temperature of 5300K ("intermediate" colour appearance, Table 7.1 AS 1680.1:2006).

- All lighting in the clusters will comply with AS1680.1:2006 Section 8.3.4, or with Section 8.3.3 for specialised lighting; and,
- There will be no direct view of any bare lamp; or,
- All bare lamps will be fitted with baffles, louvers, translucent diffusers, or other means that directly obscure the lamp from common view.

- Lighting levels provided in the nominated area will be appropriate to the tasks performed in each space. The nominated area includes all clusters, common areas and tertiary spaces. A space can be excluded if the use of the space (for example, a cinema or other common facilities) justifies different appropriate lighting levels.
- The appropriate lighting levels for each task within each space type is defined as lighting with a maintained illuminance that meets the levels recommended in AS1680.2.1-2008 and does not exceed these levels by more than 25%.
- The appropriate lighting levels for the different space types and activity types are listed in Table D1 of AS1680.2.1-2008.

ENE-1 Energy Improvement

Proposed energy efficiency initiatives include: tri-generation; highly efficient building fabric; highly efficient central plant; natural ventilation; and, high efficient low maintenance lighting.

Bedrooms: Each bedroom will include occupancy controls to minimise air-conditioning and lighting energy. At a minimum this will include a dwelling shutdown switch near the main entry door to turn off all lighting and air-conditioning and heating.

Common Areas: Common areas will include automated controls such as motion sensors and timers to minimise air-conditioning and lighting energy use when unoccupied.

Dishwashers will have the highest available rating under the Australian Government's 'Energy Rating' labelling system. A communal laundry will be provided as a common facility.

8.4 Transport

TRA-1 Provision of Car Parking

The site is located within close proximity to public transport nodes, providing the students with full access to their surrounding city, without the need to own their own private vehicle. No car parking will be provided.

TRA-3 Cyclist Facilities

Secure bicycle storage will be provided for at least 5% of rooms, a minimum of 28 spaces.

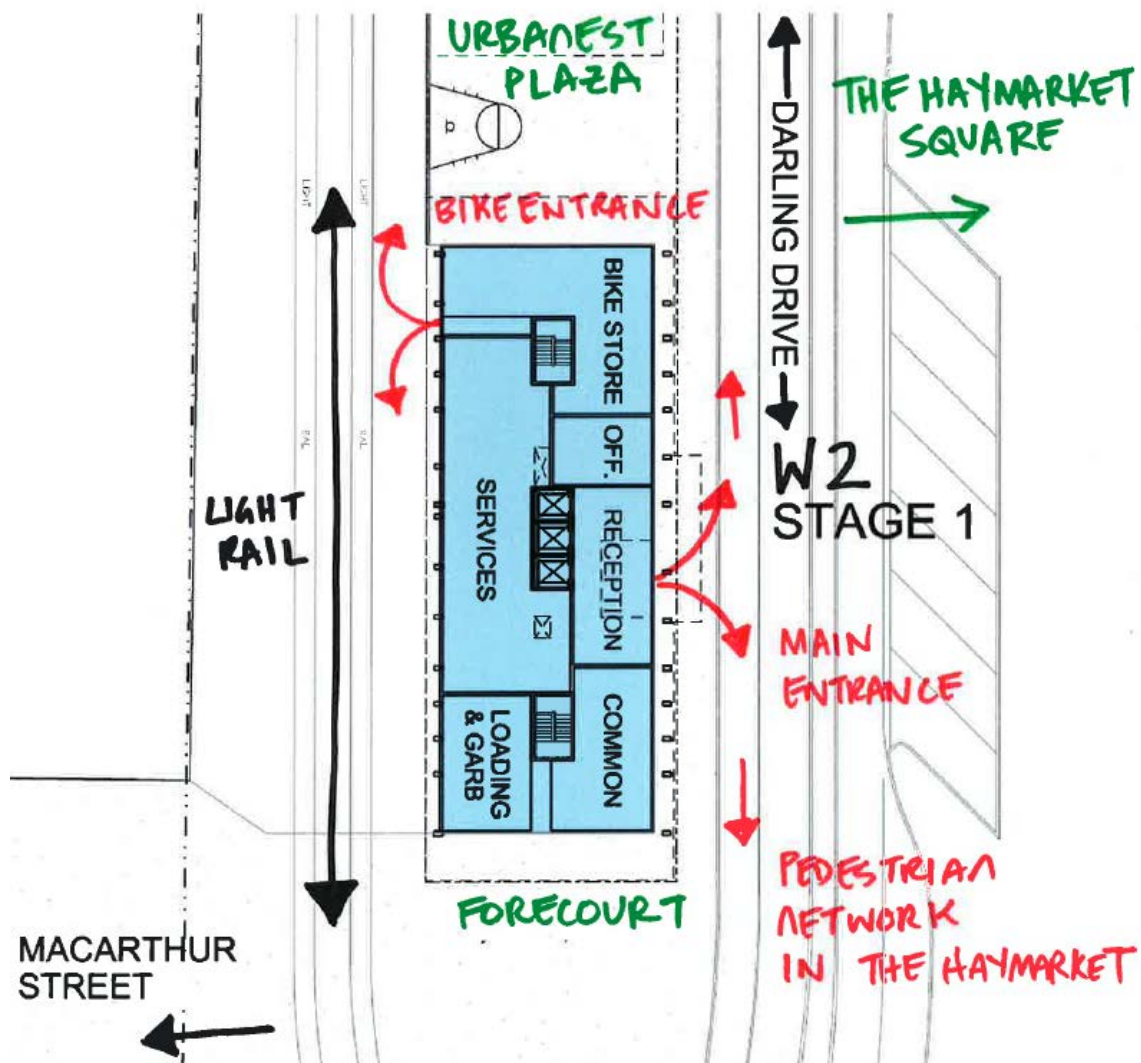
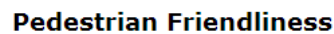


Figure 12. Active Transport Connections

Many commuting mass transport options are available to building users, with the light rail line adjacent to the W2 development and Town Hall Station in close proximity.



Walk Score is a number between 0 and 100 that measures the walkability of any address. It is indicative of the number and type of amenities located nearby to the W2 project site. The project achieves a walk score of 99, a 'Walker's Paradise', in accordance with the website www.walkscore.com using their street smart method of calculation. For the purposes of this calculation at this stage, the address of the site has been taken as 500 Harris Street (across the street within 10m of the proposed project site).



Average Block Length: 95 meters
Good

 Number of Intersections: 293 per sq mi
Good

Service	Percentage
Groceries	100%
Restaurants	99%
Shopping	100%
Coffee	100%
Schools	100%
Parks	100%
Book Stores	98%
Entertainment	100%
Banking	97%

Page | 31

Page | 32

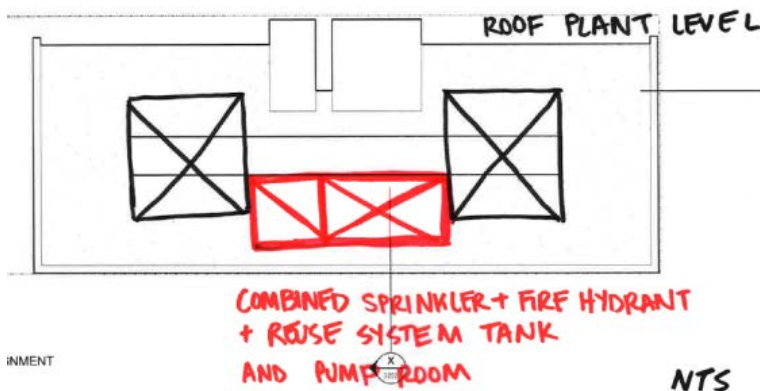


Figure 16. Roof Plant Fire Water Tank and Reuse System

WAT-7 Water Efficient Appliances

All dishwashers will have the highest available rating under the Australian Government's Water Efficiency Labelling Scheme (WELS) rating system as per the WELS Standard AS/NZS6400:2005 Water-Efficient Products – Rating and Labelling. All dishwashers not covered by WELS will show an improvement of 10% over the performance in energy consumption of typical equipment of the same kind. A communal laundry will be provided as a common facility on the Ground Floor or Level 1.

8.6 Materials

MAT-4 Concrete

A reduction of Portland cement by 30% will be achieved, measured by mass across all concrete used in the project compared to the Green Star MAT-4 Concrete Reference Case.

The mix water for all concrete used in the project will contain at least 50% captured or reclaimed water (measured across all concrete mixes in the project), and one of the following criteria will be met:

- At least 40% of coarse aggregate in the concrete is crushed slag aggregate or another alternative materials (measured by mass across all concrete mixes in the project), provided that use of such materials does not increase the use of Portland cement by over five kilograms per cubic meter of concrete; or,
- At least 25% of fine aggregate (sand) inputs in the concrete are manufactured sand or other alternative materials (measured by mass across all concrete mixes in the project), provided that use of such materials does not increase the use of Portland cement by over five kilograms per cubic meter of concrete.

MAT-5 Steel

At least 95% (by mass) of all structural and reinforcing steel used in the building's structure will be sourced from a responsible steel maker.

At least 95% (by mass) of all reinforcing bar and mesh will meet or exceed 500MPa strength grade, and at least 60% (by mass) of all reinforcing bar and mesh will be produced using energy-reducing processes in its manufacture (measured by average mass by steel maker annually).

MAT-6 PVC

All common uses of PVC (100% by cost) will meet the Best Practice Guidelines for PVC in the Built Environment.

Common uses of PVC products include pipes, conduit and associated fittings; wire and cable insulation; and flooring and resilient wall covering products that contain PVC. Flooring refers to vinyl flooring or a carpet containing PVC backing.

ECO-4 Change of Ecological Value

The site has no threatened or vulnerable species; there will be no net reduction of native vegetation cover; and the ecological value of the site will not be diminished.

8.8 Emissions

EMI-7 Light Pollution

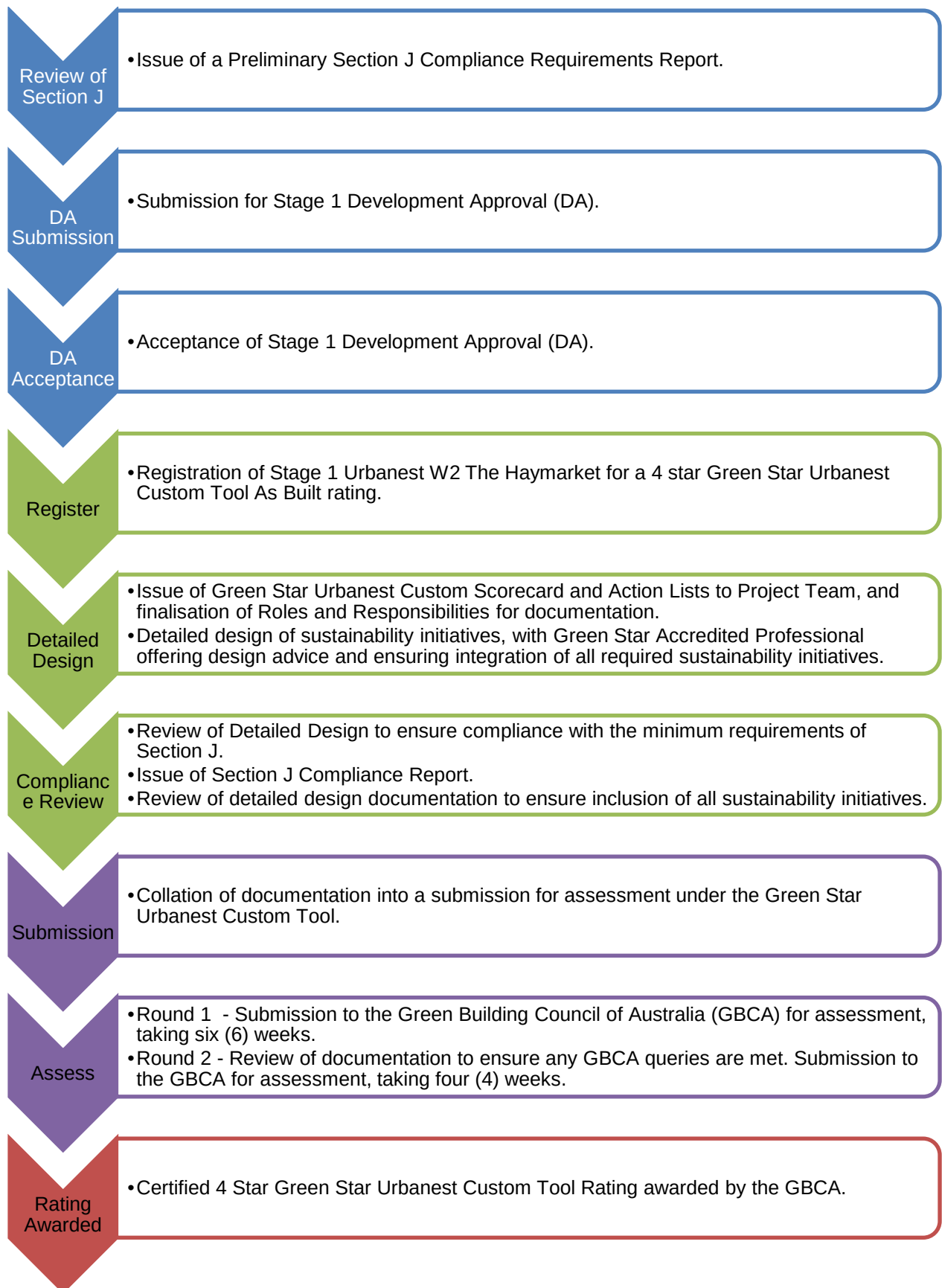
The lighting design will comply with AS 4282 'Control of the Obtrusive Effects of Outdoor Lighting'. No external luminaire will have an Upward Light Output Ratio that exceeds 5% relative to its particular mounting orientation. Direct illuminance from external luminaries will produce a maximum initial point illuminance value no greater than 0.5 Lux to the site boundary and no greater than 0.1 Lux to 4.5 metres beyond the site into the night sky, when modelled using a calculation plane set at the highest point of the building.

EMI-12 Impacts from Refrigeration

Refrigeration equipment will not use any water based heat rejection systems.

The following project milestones and timeline has been identified for achieving the Sustainability Objectives.

SICEEP The Haymarket Sustainability Report for SSDA3
April 2013



APPENDIX A: GREEN STAR SCORECARD

Urbanest, W2 Haymarket - Green Star Custom Tool Scorecard					
Version: 001 Date: 19/04/2013 Green Star Custom Tool 2013 Draft #5 Prepared by: SR					
Credit	Credit Name	Available Points	Targeted Points	Credit Approach	Comment
Management					
MAN-1	Green Star Accredited Professional	2	2	A Green Star Accredited Professional (GSAP) has been contractually engaged to advise on all features and stages of the Green Star Certification process; and, provide environmental design advice based on Green Star from the design phase through to construction completion.	GSAP to be engaged.
MAN-5	User and Maintenance Guides	2	2	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. A Building Maintenance Guide, which provides detailed guidance on accessing and maintaining both the building’s services and external building fabric, is developed by the design team and made available to the building owner.	GSAP to coordinate input from project team for Building User’s Guide. Contractor to prepare Building Maintenance Guide.
MAN-6	Environmental Management	2	2	The contractor implements a comprehensive, project-specific Environmental Management Plan (EMP) for the works in accordance with Section 3 of the NSW Environmental Management System Guidelines 2009. The EMP includes provisions for construction Indoor Air Quality (IAQ) for the works that meets or exceeds the recommended control measures of Chapters 3 and 4 of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2008. The contractor has a valid ISO 14001 Environmental Management System (EMS) accreditation prior to and throughout construction.	Contractor to meet SMACNA IAQ Guidelines.
MAN-7	Waste Management	2	2	The contractor implements a Waste Management Plan (WMP), retains waste records and submits quarterly reports to the building owner; and 80% (by mass) of all demolition and construction waste is reused or recycled.	This requirement applies from the date of site purchase by Urbanest.
MAN-10	Learning Resources	1	1	Three of the building’s environmental attributes are displayed in a manner that can be readily understood by building users, and reflect an environmental initiative rewarded within a Green Star Credit; One attribute must relate to energy use; One attribute must relate to water use; and, Each attribute must be clearly displayed and the measurable environmental and economic benefits communicated to the casual observer. The environmental data of the energy and water initiatives is clearly and permanently presented and displayed in real-time (e.g. through screens or other mechanisms).	Requires a certain level of metering in order to provide real time data on energy and water consumption.
MAN-16	Metering	3	0	Metering Strategy: Accessible metering to be provided to monitor the energy and water consumption of the tenant from all energy and water sources. The metering must be provided separately for the distinct uses in the project. Monitoring strategy: A comprehensive monitoring strategy, which includes frequency of monitoring, and estimated end consumption for each use, has been developed for the installed meters. The monitoring strategy (as delineated above) is addressed through a system capable of capturing and processing the data produced by the installed energy or water meters (or both), and presenting that data in an accurate and easy to read report on consumption trends.	This has previously been identified as a high cost item.
MAN-17	Operational Waste	1	1	An operational waste management plan, which includes the identification of, reduction of, and handling of common and additional waste and recycling streams, has been developed by an experienced waste auditor for implementation in the project. All identified common and additional recycling streams are recycled upon collection.	Can be achieved in accordance with the Draft Waste Management Summary prepared by Waste Audit.
MAN-18	Commissioning and Tuning	4	4	Early in the design process, targets for environmental performance of the design be set. A comprehensive services and maintainability review of the project is performed. Comprehensive pre-commissioning activities and commissioning activities are performed for all nominated systems. A building tuning process is in place and responsibilities assigned to have all nominated systems tuned after handover. All activities were supervised by an Independent Commissioning Agent (ICA) that reports directly to the client.	ICA to be engaged.
Sub-total		17	14		
Weighted Sub-total			11.5		
Indoor Environment Quality					
IEQ-1	Provision of Outside Air	3	3	The entry of outdoor pollutants is minimised, and outside air is provided as follows: - All clusters are provided with ventilation openings that can be adjusted to provide a constant stream of outside air. - 95% of the common areas are provided with ventilation openings that can be adjusted to provide a constant stream of outside air OR Naturally ventilated in accordance with AS1668.4-2012.	Bedrooms and living areas in clusters to be provided with operable windows or trickle ventilators. Common areas e.g. those located on the Ground and First Floors can also be provided with at least 50% outside air rates greater than the requirements of AS1668.2-2012.
IEQ-2	Quality of Ventilation	2	2	Each cluster is provided with effective natural ventilation. - Each bedroom is provided with effective natural ventilation. - Each living area is provided with effective natural ventilation. Single sided ventilation or cross ventilation is acceptable.	Bedrooms and living areas in clusters to be provided with operable windows or trickle ventilators to achieve single sided ventilation.
IEQ-4	Daylight	3	3	90% of all clusters, 50% of the area of each bedroom and 50% of each of the living areas meets the daylight criteria. 30% of the common area complies with the daylight criteria. The daylight criteria is met through the simple calculation method.	Further guidance on the simple calculation method is being provided by the GBCA in the next issue of the Custom Tool.
IEQ-5	Thermal Comfort	1	1	A high level of thermal comfort is achieved for 95% of the bedrooms in the development and 98% of the year, demonstrated by: - The provision of individual comfort control systems to the building’s occupants. Naturally ventilated spaces or spaces provided with a continuous supply of outside air can be provided with individual comfort control by allowing occupants to have control over individual ventilation openings which comply with the requirements of IEQ-1.	Bedrooms and living areas in clusters to be provided with operable windows or trickle ventilators. Common areas are provided with ventilation openings that can be adjusted to provide a constant stream of outside air or naturally ventilated.
IEQ-6	Hazardous Materials	na	na	A comprehensive hazardous materials survey has been carried out on the project site, as defined by the relevant Environmental and Occupational Health and Safety (OH&S) legislation. Whenever asbestos, lead or Polychlorinated Biphenyls (PCBs) were found, they have been removed in accordance with the standards and legislations listed below: - Asbestos – relevant Occupational Health and Safety (OH&S) legislation and environmental legislation; - Lead – AS4361 ‘Guide to Lead Paint Management’; and, - Polychlorinated Biphenyls (PCBs) – ANZECC Polychlorinated Biphenyls Management Plan. For new development with no existing buildings on site, this credit not applicable.	There are no existing buildings on site.
IEQ-7	Internal Noise Levels	2	0	The internal noise level (combined building services noise and external noise intrusion), irrespective of building location does not exceed: 35 dBLAeq(+/-5dB)(1 hour) in any bedroom in the building during the night time period 10pm to 7am; and 40 dBLAeq (1 hour) in any living area at any time. Where operable windows are the primary method of ventilation, the criteria applies with these windows open. The bounding apartment construction to habitable areas results in an airborne noise isolation standard of Rw + Ctr ≥ 53; and The floor construction above habitable rooms of adjacent dwellings (i.e. floor cover) results in an impact isolation standard of Ln,w-Cl ≤ 55. An appropriately qualified acoustic professional has been appointed to assist the project team in the assessment and mitigation of external noise sources, through consultation at critical stages of the proposed development including at a minimum: - Design of the building; - Construction of the building; and - Post construction sign-off stage of the building.	Additional cost and materials to achieve these points. Renzo Torin will confirm during detailed design whether the first point can be targeted.
IEQ-8	Volatile Organic Compounds	4	4	95% of internally applied paint products, all adhesives and sealants, all flooring coverings used internally, and 95% of all mattresses meet Green Star TVOC Content Limits in accordance with the correct testing methods.	Contractor to manage and control products used on site.
IEQ-9	Formaldehyde Minimisation	1	0	All engineered wood products (including exposed and concealed applications) either have low formaldehyde emissions or contain no formaldehyde in accordance with Green Star Formaldehyde emissions limits.	This includes all furniture items, and prefabricated kitchens and bathrooms and has been identified as a high cost item.
IEQ-11	Daylight Glare Control	1	1	Glare from sunlight in all bedrooms is reduced through a combination of blinds, screens, fixed devices, or other means.	Blinds to be provided to all bedrooms, as selected by Urbanest.
IEQ-13	Lighting Comfort	3	2	All lamps in the space are flicker free, with a Colour Rendering Index (CRI) > 80 (Table 7.2 AS1680.1:2006), a maximum correlated colour temperature of 5300K (“intermediate” colour appearance, Table 7.1 AS 1680.1:2006) and the following occurs: Glare: - All lighting in the clusters complies with AS1680.1:2006 Section 8.3.4, or with Section 8.3.3 for specialised lighting; and, - There is no direct view of any bare lamp; or, - All bare lamps have been fitted with baffles, louvers, translucent diffusers, or other means that directly obscure the lamp from common view. General Illumination: Lighting levels provided in the nominated area are appropriate to the tasks performed in each space. The nominated area includes all clusters, common areas and tertiary spaces. A space can be excluded if the use of the space (for example, a cinema) justifies different appropriate lighting levels. The appropriate lighting levels for each task within each space type is defined as lighting with a maintained illuminance that meets the levels recommended in AS1680.2.1-2008 and does not exceed these levels by more than 25%. The appropriate lighting levels for the different space types and activity types are listed in Table D1 of AS1680.2.1-2008.	A digital dimming lighting control system will not be installed.

Urbanest, W2 Haymarket - Green Star Custom Tool Scorecard					
Version: 001 Date: 19/04/2013 Green Star Custom Tool 2013 Draft #5 Prepared by: SR					
Credit	Credit Name	Available Points	Targeted Points	Credit Approach	Comment
IEQ-16	Reduced Exposure to Pollutants	1	1	90% of the kitchens within the clusters are ventilated with dedicated and separated extract fans.	The exhaust stream from the kitchen can be combined with another exhaust stream e.g. the bathroom exhaust. Any exhaust with pollutants from the kitchen must not be recycled to other enclosures.
IEQ-27	Quality of Amenities	1	0	At least one common area or a number of common areas are provided in accordance with all of the following: - The combined area of all common areas is equivalent to no less than 5% of the GFA of the Clusters, or, where the occupancy is known, 1m2 per person; - Each common area is designed to be accessible to all building users, day lit (excluding common areas that, for functional reasons, require the exclusion of daylight), well ventilated, non-smoking, with a connection to the natural environment, and is located to avoid external noise, odour, air pollution, and if outdoors excessive exposure to the sun.	The adjacent outdoor area may meet this requirement. To be confirmed during detailed design.
Sub-total		22	17		
Weighted Sub-total			15.5		
Energy					
ENE-	Conditional Requirement	Cond	Yes	15% reduction of predicted greenhouse gas emissions in comparison to the 'Benchmark Building' as determined by the Greenhouse Gas Emissions Calculator.	Energy efficiency initiatives may include: tri-generation; highly efficient building fabric; solar panels; highly efficient central plant; natural ventilation; and, high efficient low maintenance lighting.
ENE-1	Greenhouse Gas Emissions	20	3	15% reduction of predicted greenhouse gas emissions in comparison to the 'Benchmark Building' as determined by the Greenhouse Gas Emissions Calculator.	Energy efficiency initiatives may include: tri-generation; highly efficient building fabric; solar panels; highly efficient central plant; natural ventilation; and, high efficient low maintenance lighting.
ENE-3	Peak Electricity Demand Reduction	2	0	The building includes two features recognised as reducing peak electricity demand, such as: - One points is awarded for IEQ-5 'Thermal Comfort'; and, - A heating system with a non-electric primary energy source is installed e.g. solar hot water system.	A gas boosted solar hot water system will not be installed due to space constraints.
ENE-7	Unoccupied Areas	2	2	Each cluster includes occupancy controls to minimise air-conditioning and lighting energy. At a minimum this must include a shutdown switch near the main entry door to each bedroom to turn off all lighting, air-conditioning and heating. All common areas include automated controls to minimise air-conditioning and lighting energy use when unoccupied.	Motion sensors and timers to be used in the common areas. Timers may also be employed in the bedrooms in addition to shutdown switches.
ENE-11	Energy Efficient Appliances	2	1	All dishwashers have the highest available energy rating under the Australian Government's 'Energy Rating' labelling system. A dwelling design that provides no private laundry facility will be deemed to be equivalent to installing a clothes dryer of the highest available energy rating.	Communal laundry to be provided. Urbanest to ensure that dishwashers have highest energy rating..
Sub-total		26	6		
Weighted Sub-total			5.5		
Transport					
TRA-1	Provision of Car Parking	1	1	Car parking is permitted, and no car parking for the project is provided.	
TRA-3	Cyclist Facilities	1	1	Secure bicycle storage is provided for 5% of students.	Based on 550 students, spaces for at least 28 bicycles must be provided.
TRA-4	Commuting Mass Transport	5	5	Five points are awarded based on the number and quality of commuting mass transport options available to building users, as determined by the Green Star Commuting Mass Transport Calculator.	The site is located in close proximity to many public transport options.
TRA-5	Walkable Neighbourhoods	1	1	The project achieves a walk score of at least 90, as determined by the website www.walkscore.com using their street smart method of calculation.	The site is in close proximity to many pedestrian walkways and amenities.
TRA-6	Transport Design and Planning	1	1	At least one dedicated space for providing information about local public transport, cycling, walking. The space must: • encourage the use of public transportation options; • be in a location that is accessible to all building users, ideally in a main reception or lobby area; • as a minimum, provide power and network access points to facilitate an electronic 'real-time' system or internet access point; • be signposted at its location and throughout appropriate areas of the development indicating its existence, purpose and location.	Space will be provided in the Lobby.
Sub-total		9	9		
Weighted Sub-total			8		
Water					
WAT-1	Potable Water	10	4	The building's predicted potable water consumption has been reduced by 20% below that of the 'Benchmark Building'.	This is achieved through the provision of highest WELS rated appliances, fixtures and fittings, rainwater collection and reuse for toilet flushing, and fire system water reuse.
WAT-5	Fire System Water	2	2	There is sufficient temporary storage for a minimum of 80% of the water used for routine testing of the fire protection system for re-use on-site; and each floor is fitted with a sprinkler system that has isolation valves or shut-off points for localised drain-down.	Fire system water reuse system to be located on roof.
WAT-7	Potable Water Use in Appliances	1	1	All dishwashers and clothes washers are at or within one point of the highest available rating under the Australian Government's WELS rating system as per the WELS Standard AS/NZS6400:2005 Water-Efficient Products – Rating and Labelling. For those not covered by WELS, all dishwashers and clothes washers are to show an improvement of 10% over the performance in energy consumption of typical equipment of the same kind. Combined clothes washers and dryers that use water during their drying mode must not be used if points are to be achieved under this credit.	Appliances include dishwashers provided in clusters and clothes washers provided in the Communal Laundry.
Sub-total		13	7		
Weighted Sub-total			5.9		
Materials					
MAT-2	Building Reuse	4	0	At least 50% of the total façade of the existing building by area comprises reused building façade. 60% of the existing major structure, by gross building volume, is reused.	There are no existing buildings on site.
MAT-3	Recycled Content, Reused Products and Materials	1	0	Materials selected for base building construction or integrated fitout works which have a post-consumer recycled content of at least 20% (by mass) or are reused items, and represent at least 0.5% of the project's total contract value.	This has been identified as a high cost item.
MAT-4	Concrete	3	2	Reduction of Portland cement by 30% measured by mass across all concrete used in the project compared to the Green Star reference case. The mix water for all concrete used in the project contains at least 50% captured or reclaimed water (measured across all concrete mixes in the project), and one of the following criteria is met: • At least 40% of coarse aggregate in the concrete is crushed slag aggregate or another alternative materials (measured by mass across all concrete mixes in the project), provided that use of such materials does not increase the use of Portland cement by over five kilograms per cubic meter of concrete; or, • At least 25% of fine aggregate (sand) inputs in the concrete are manufactured sand or other alternative materials (measured by mass across all concrete mixes in the project), provided that use of such materials does not increase the use of Portland cement by over five kilograms per cubic meter of concrete	We have had recent feedback from other projects with concerns about cracking in compliant concrete mixes. This may be an issue where polished concrete floors are planned.
MAT-5	Steel	2	1	All structural and reinforcing steel to be manufactured by a responsible steel maker, and where reinforcing steel comprises 60% or more of the total steel used in the structure of the building: at least 95% or reinforcing bar and mesh must meet or exceed a 500 MPa strength grade; and, at least 60% must be produced using energy reducing processes in its manufacture.	Achieving 15% of reinforcing steel manufactured using optimal off site practices in current market is difficult.
MAT-6	PVC	2	2	At least 90% of the common uses of PVC products in buildings by cost must meet Best Practice Guidelines for PVC in the Built Environment, or do not contain PVC.	Common uses of PVC products includes pipes, conduit and associated fittings; wire and cable insulation; and flooring and resilient wall covering products that contain PVC. Flooring refers to vinyl flooring or a carpet containing PVC backing. Common uses of PVC products that are re-used are excluded from this credit.
MAT-7	Timber	1	0	95% (by cost) of all timber used in the building and construction works is certified under FSC International and/or PEFC accredited certifications schemes or is from a reused source; or is sourced from a combination of both.	This is an expensive credit to target, and is not commonly targeted in the industry. Includes formwork and hoardings, structural and non-structural timber, cladding, finishes, joinery and furniture items.
MAT-9	Dematerialisation	1	0	50% of kitchens are prefabricated modules (pods), and 50% of bathrooms are prefabricated modules (pods).	All bathrooms are prefabricated modules (pods), excluding those provided for accessible units.
MAT-11	Flooring	3	0	Requires all flooring in all clusters to have a reduced environmental impact in accordance with the Green Star Flooring Calculator.	This may be able to be targeted, depending on the flooring products selected by Urbanest.
MAT-12	Assemblies	3	0	All assemblies in all clusters to have a reduced environmental impact in accordance with the Green Star Assemblies Calculator.	This has been identified as a high cost item.
MAT-13	Furniture	3	0	All furniture used in the clusters in the project to have a reduced environmental impact in accordance with the Green Star Furniture Calculator.	This has been identified as a high cost item.
Sub-total		23	5		

Urbanest, W2 Haymarket - Green Star Custom Tool Scorecard					
Version: 001 Date: 19/04/2013 Green Star Custom Tool 2013 Draft #5 Prepared by: SR					
Credit	Credit Name	Available Points	Targeted Points	Credit Approach	Comment
Weighted Sub-total			2.6		
Land Use and Ecology					
ECO-	Conditional Requirement	-	-	Site is not located on prime agricultural land, land containing old growth forest, or within 100m of a wetland ecological value'. Where the site is located 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 Green Star Wetland Protection Measures have been completed.	The existing site is undeveloped, grassed area, surrounded by existing developments.
ECO-1	Topsoil	1	0	From the date of site purchase to the completion of design/construction, no topsoil was removed from site; and, all topsoil affected by the construction works was separated and protected from degradation, erosion or mixing with fill or waste; and 95% of all topsoil on site (by volume) retains its productivity.	Given the site limitations, storage, separation and protection would be difficult due to the space available. The site will not retain the existing topsoil.
ECO-2	Reuse of Land	1	0	75% of the site was Previously Developed Land at the date of site purchase.	The site was not previously developed land at the time of site purchase.
ECO-3	Reclaimed Contaminated Land	2	0	The site contained Significant Contamination; and the developer/owner has undertaken remedial steps to decontaminate the site prior to construction.	No significant contamination onsite has been identified.
ECO-4	Change of Ecological Value	4	1	The ecological value of the land is either maintained or enhanced, as determined by the Green Star - Change of Ecological Value Calculator based on a comparison of the state of the site before and after design/construction.	The site will retain some areas of soft landscaping.
Sub-total		8	1		
Weighted Sub-total			0.8		
Emissions					
EMI-5	Stormwater	3	0	The post-development peak 2 year Average Recurrence Interval (ARI) event discharge from the site does not exceed the pre-development peak 2 year ARI event discharge; and all stormwater discharged from site meets the Pollution Reduction Targets in Column B of Green Star Table Emi-S.1.	The level of treatment of stormwater able to be achieved is restricted due to space. No onsite detention is being undertaken. Discharge will be reduced slightly by rainwater collection and reuse, but as the existing permeable strip is being removed, the event discharge is unlikely to be below the pre-development discharge. Available space for WSUD measures to provide water quality is restricted and not likely to achieve the pollutant reduction required. Proprietary products could be considered at detailed design.
EMI-6	Discharge to Sewer	4	1	The building outflows to the sewerage system due to building occupants' usage have been reduced by more than 30% against an average-practice benchmark (one point).	Dependent on WAT-1. This is achieved through the provision of highest WELS rated appliances, fixtures and fittings, rainwater collection and reuse for toilet flushing, and fire system water reuse.
EMI-7	Light Pollution	2	2	The lighting design complies with AS 4282 'Control of the Obtrusive Effects of Outdoor Lighting', and relative to its particular mounting orientation, no external luminaire has an Upward Light Output Ratio that exceeds 5%.	All external lighting, including signage will comply.
EMI-12	Impacts from Refrigeration	5	1	The refrigeration equipment does not use a water based heat rejection system.	Provision of a refrigerant recovery system and refrigerant with a GWP100 of less than 10 are high cost items.
Sub-total		14	4		
Weighted Sub-total			1.4		
Innovation					
INN-1	Innovation	5	0	Points may be achieved for pioneering initiatives in sustainable design, process or advocacy.	The MAT-9 benchmark has been substantially exceeded, innovation points may be able to be achieved.
Sub-total		5	0		
Total Points (Weighted)		Total Available	Total Targeted	4 star Green Star: Requires 45 points plus a 10% buffer = 50 points.	
		100.0	51.2		

SICEEP The Haymarket Sustainability Report for SSDA3
April 2013

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
ECO-00.01	ECO- Conditional Requirement	Short report, referring to the documentation supplied in the General Section of the submission, and describing: - the site and its location; - whether the site it contained any buildings at the date of site purchase or five years prior to the project's Green Star registration date; - whether the site was on prime agricultural land at the date of site purchase or five years prior to the project's Green Star registration date; - whether or not the site contained and old-growth forest at the date of site purchase or five years prior to the project's Green Star registration date; and - the distance between the site and any surrounding wetland(s) at the date of site purchase or five years prior to the project's Green Star registration date.	Design	Architect		Note must be in accordance with the General Section.
ECO-00.03	ECO- Conditional Requirement	Extract(s) from the current planning regulations of the relevant authority showing how the site was zoned prior to the project's Development Approval.	Design	GSAP		
ECO-00.04	ECO- Conditional Requirement	Zoning map showing how the site and surrounding area were zoned prior to the project's Development Approval.	Design	GSAP		
ECO-04.01	ECO-4 Change of Ecological Value	Completed Change in Ecology Calculator.	Pending Engagement of Landscape Architect	GSAP		
ECO-04.02	ECO-4 Change of Ecological Value	Short report prepared by a suitably qualified member of the design team: - Describing land types, with corresponding areas (m2), in the 'before' and 'after' condition of the site; - Identifying the conditions and time periods necessary for installed land types to assume and perform their ecological function; - Providing additional evidence as required of ecosystem viability to demonstrate that the installed landscape will function as intended by the design; - Detailing any installation and maintenance plans required to be developed and implemented by the building management; - Referencing the documentation submitted in the General section of the submission, ensuring that the information in the Short Report is consistent with the information submitted in the General section and is referenced clearly; and - Where the site has been owned by the current owner for more than five years (from the project's Green Star registration date): outlining the history of the project site from five years prior to the project's Green Star registration date, detailing any landscaping changes, and any changes to the footprint of any buildings on the site during that period.	Design	Landscape Architect		
ECO-04.04	ECO-4 Change of Ecological Value	Confirmation from the Landscape Architect refuting the presence of endangered, threatened or vulnerable species onsite.	Design	Landscape Architect		
ECO-04.05	ECO-4 Change of Ecological Value	As Built site plan of the design clearly identifying all land types present on the site in accordance with the Calculator and indicating the area they occupy.	Practical Completion - As Built Drawings	Landscape Architect		
ECO-04.06	ECO-4 Change of Ecological Value	Landscaping Schedule where planting and any requirements necessary to ensure that the landscaping functions as intended by the design are nominated.	Design	Landscape Architect		
EMI-06.01	EMI-6 Discharge to Sewer	A copy of the Green Star - Sewage Calculator completed, and showing % reduction in sewage outflows to the sewerage system.	Design	GSAP		
EMI-07.01	EMI-7 Light Pollution	Short report from the lighting engineer describing how the Credit Criteria have been met by: - Detailing the external lighting on the site; - Referencing photometric data and illumination diagrams (including horizontal and vertical light distribution) for all external luminaires; and - Demonstrating that the external lighting has been designed in accordance with AS 4282.	Design	Electrical Contractor		
EMI-07.02	EMI-7 Light Pollution	Evidence of installation of the luminaires for all external lighting, nominating the type, lighting distribution and quantity of each luminaire and including the relevant photometric data showing that the luminaires do not have an upward light output ratio that exceeds 5%.	Practical Completion - As Built Drawings	Electrical Contractor		
EMI-07.03	EMI-7 Light Pollution	As Built Drawing(s) including: site plan indicating the location and type of all external luminaries and showing the aiming point and mounting orientation of all external luminaires.	Practical Completion - As Built Drawings	Electrical Contractor		
EMI-12.01	EMI-12 Impacts from Refrigeration	Cover letter confirming that no water based heat rejection systems are present in the porject.	Design	GSAP		
ENE-0.01	ENE-Conditional Requirement	Greenhouse Gas Emissions Modelling Report including at a minimum the information included in the 'Greenhouse Gas Emissions Modelling Report Requirements' chapter of the Green Star – Custom Greenhouse Gas Emissions Calculator Guide, downloadable from the GBCA website.	Design	GSAP		
ENE-0.02	ENE-Conditional Requirement	Copy of the Green Star – Custom GHG Emissions Calculator	Design	GSAP		
ENE-0.03	ENE-Conditional Requirement	Extracts from the as built drawings, and schedules demonstrating that all inputs to the energy simulation and used in any other energy calculations are reflected in the design	Practical Completion - As Built Drawings	Energy Consultant		
ENE-01.01	ENE- Greenhouse Gas Emissions	Greenhouse Gas Emissions Modelling Report must include at a minimum the information included in the 'Greenhouse Gas Emissions Modelling Report Requirements' chapter of the Green Star – Custom Greenhouse Gas Emissions Calculator Guide, downloadable from the GBCA website.	Design	Energy Consultant		
ENE-01.02	ENE- Greenhouse Gas Emissions	Copy of the Green Star-Multi Unit Residential v1 Greenhouse Gas Emissions Calculator	Design	Energy Consultant		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
ENE-01.03	ENE- Greenhouse Gas Emissions	Extracts from the Commissioning Reports demonstrating (through supporting evidence) that the building has been commissioned and operates as intended by the design (i.e. as described in the Greenhouse Gas Emissions Modelling Report) appending relevant test data (for example for HVAC energy efficiency), and referencing the Operations and Maintenance (O&M) Manual.	Practical Completion - Commissioning Report	ICA		
ENE-01.04	ENE- Greenhouse Gas Emissions	As Built drawings and schedules demonstrating that all the inputs in the energy simulation or GHG Emissions Calculator are reflected in the current design.	Practical Completion - As Built Drawings	Energy Consultant		
ENE-07.01	ENE-7 Unoccupied Areas	Short report prepared by a suitably qualified professional detailing how the Credit Criteria is met by describing how energy is saved in unoccupied areas.	Design	Electrical Contractor		
ENE-07.02	ENE-7 Unoccupied Areas	As-built documentation clearly showing - For clusters, the location of the shutdown switch and all relevant connections. - For common areas, the location of switches, sensors, timers, or means of control and all relevant connections.	Practical Completion - As Built Drawings	Electrical Contractor		
ENE-07.03	ENE-7 Unoccupied Areas	CESA to provide input to the ICA such that, for relevant systems, the commissioning report fulfils the following: The commissioning report is created in accordance with the relevant commissioning code or guideline (CIBSE/ASHRAE/AIRAH), which includes commissioning dates; records of all functional/commissioning testing undertaken; future seasonal testing; a list of outstanding commissioning issues; and, the outcomes and changes made to the project as a result of the commissioning process, accounting for all of the recommendations.	Practical Completion - Commissioning Report	ICA		
ENE-07.04	ENE-7 Unoccupied Areas	Extracts from the commissioning report relevant to the systems provided to fulfil ENE-7, demonstrating that the commissioning has been undertaken in accordance with the relevant commissioning code or guideline (CIBSE/ASHRAE/AIRAH), which includes commissioning dates; records of all functional/commissioning testing undertaken; future seasonal testing; a list of outstanding commissioning issues; and, the outcomes and changes made to the project as a result of the commissioning process, accounting for all of the recommendations.	Practical Completion - Commissioning Report	ICA		
ENE-11.01	ENE-11 Energy Efficient Appliances	Short Report prepared by a suitably qualified professional demonstrating that all dishwashers have the highest available rating under the Australian Government's Energy rating labelling system.	Design	Head Contractor		
ENE-11.02	ENE-11 Energy Efficient Appliances	Confirmation(s) from the supplier(s) of the type and quantity of each product supplied to the project.	Practical Completion - As Built Drawings	Head Contractor		
ENE-11.03	ENE-11 Energy Efficient Appliances	Extract from the Energy Rating database clearly indicating for each appliance: - The rating achieved under the Energy Rating labelling scheme; and, - The highest available rating for appliances of that category.	Design	Head Contractor		
ENE-11.04	ENE-11 Energy Efficient Appliances	As-built drawings - Clearly depicting the location of all communal laundry facilities (if applicable); - Clearly indicating the number and location of all appliances provided in communal laundry facilities.	Design	Architect		
GEN-01.01	GEN- 01 General Section	Scaled site plans OR aerial photographs generated at least five years prior to the project's Green Star registration date, marked up as necessary to clearly show: - Whether the site was a green field or brown field site, and whether it contained any buildings, and confirming that there was no topsoil onsite; - The footprint area of any buildings that existed on the site; - The land types that were present on site in accordance with Eco-4 Change of Ecological Value Calculator; and - The areas that existed in a radius no less than 100 metres around the site.	Design	Urbanest		
IEQ-01.01	IEQ-1 Provision of Outside Air	Short report that describes how the Credit Criteria have been met by: - Briefly describing the ventilation systems in the building; - Confirming the Provision of a Constant Stream of Outside Air: For a Cluster: - The living area and each bedroom must have: - an adjustable trickle ventilator; and/or - an operable window that can be locked to allow for constant ventilation. The size of the trickle ventilator or the effective opening for the window when locked must be at least 4000mm ² . - Providing a schedule of all spaces within the building, indicating their ventilation mode(s) and areas as referenced in the tender drawings;	Design	Architect		
IEQ-01.02	IEQ-1 Provision of Outside Air	As Built drawings For each space provided with a constant stream of outside air, with ventilation openings, inlets and outlets clearly indicated and dimensioned.	Practical Completion - As Built Drawings	Architect		
IEQ-02.01	IEQ-2 Quality of Ventilation	Short report or narrative that describes how the Credit Criteria have been met by: - Describing examples of ventilation solutions used in the project; - Demonstrating the percentage of bedrooms or clusters that are provided with effective single sided natural ventilation.	Design	Architect		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
IEQ-02.02	IEQ-2 Quality of Ventilation	As Built drawings of each typical space showing the bedrooms and clusters that have effective single sided natural ventilation.	Practical Completion - As Built Drawings	Architect		
IEQ-04.01	IEQ-4 Daylight	Short report or narrative that describes how the Credit Criteria have been met by: - Describing examples of daylight solutions used in the project; - Demonstrating the percentage of bedrooms or clusters that are provided with effective natural ventilation.	Design	Architect		
IEQ-04.02	IEQ-4 Daylight	As Built drawings identifying: - The materials in the facade and roof; - Those areas considered to meet the Credit Criteria, with the nominated area clearly shown; and - The heights and location of surrounding buildings and average reflectance for those buildings.	Practical Completion - As Built Drawings	Architect		
IEQ-04.03	IEQ-4 Daylight	As Built Glazing Schedule where all glazing properties and minimum visual transmittance levels are nominated.	Practical Completion - As Built Drawings	Architect		
IEQ-05.01	IEQ-5 Thermal Comfort	Documentation as required by IEQ-1.	Design	GSAP		
IEQ-05.02	IEQ-5 Thermal Comfort	Documentation as required by IEQ-1.	Practical Completion - As Built Drawings	GSAP		
IEQ-06.01	IEQ-6 Hazardous Materials	A short report prepared by a suitable professional that describes how the Credit Criteria have been met. This credit is not applicable.	Design	Head Contractor		
IEQ-08.01	IEQ-8 Volatile Organic Compounds	A short report prepared by a suitable professional that describes how the Credit Criteria are met by: - Summarising how the products used meet the Credit Criteria; - Listing and referencing all products within the relevant category used in the project; and, - Nominating the ones that meet the Credit Criteria.	Design	Head Contractor		
IEQ-08.02	IEQ-8 Volatile Organic Compounds	Confirmation(s) from the supplier(s) of the type and quantity of each product supplied to the project - Relevant products may include: paints, adhesives, and sealants,.	Immediate	Mechanical Contractor		
IEQ-08.03	IEQ-8 Volatile Organic Compounds	Confirmation(s) from the supplier(s) of the type and quantity of each product supplied to the project - Relevant products may include: paints, adhesives, and sealants,.	Immediate	Electrical Contractor		Recommend that confirmation from supplier is received prior to sub-contractor starting on site.
IEQ-08.04	IEQ-8 Volatile Organic Compounds	Confirmation(s) from the supplier(s) of the type and quantity of each product supplied to the project - Relevant products may include: paints, adhesives, and sealants,.	Immediate	Hydraulics Contractor		04/12/12: Recommend that confirmation from supplier is received prior to sub-contractor starting on site.
IEQ-08.06	IEQ-8 Volatile Organic Compounds	For each paint, adhesive and sealant, or floor covering used, VOC datasheet(s) for every compliant product nominated issued by laboratory stating the product name, TVOC content and the testing method used.	Design	Electrical Contractor		
IEQ-08.06	IEQ-8 Volatile Organic Compounds	For each paint, adhesive and sealant, or floor covering used, VOC datasheet(s) for every compliant product nominated issued by laboratory stating the product name, TVOC content and the testing method used.	Design	Architect		
IEQ-08.07	IEQ-8 Volatile Organic Compounds	For each paint, adhesive and sealant, or floor covering used, VOC datasheet(s) for every compliant product nominated issued by laboratory stating the product name, TVOC content and the testing method used.	Design	Hydraulics Contractor		
IEQ-08.08	IEQ-8 Volatile Organic Compounds	For each paint, adhesive and sealant, or floor covering used, VOC datasheet(s) for every compliant product nominated issued by laboratory stating the product name, TVOC content and the testing method used.	Immediate	Mechanical Contractor		Recommend that confirmation from supplier is received prior to sub-contractor starting on site.
IEQ-11.01	IEQ-11 Daylight Glare Control	Short report prepared by a suitable professional that describes how the Credit Criteria have been met by: - Identifying all spaces where glare is minimised and nominating their areas; - Nominating the solution(s) used to minimise glare in each space; - Where blinds/screens are used, describing characteristics of the blinds, the VLT, and how they prevent direct sunlight penetration.	Design	Architect		
IEQ-11.02	IEQ-11 Daylight Glare Control	As Built drawings of the building marked up to show: - Each viewing façade and its orientation; - The glare control solution(s) (blinds) used for each viewing facade; and, - Wherever necessary, construction detail drawings of the glare control devices (blinds).	Practical Completion - As Built Drawings	Architect		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
IEQ-13.01	IEQ-13 Lighting Comfort	Short report prepared and signed off by a suitable lighting professional that describes how the Credit Criteria have been met by: - Referencing supporting documentation; - Providing a summary table that identifies the space serviced by the lighting layout, the location of the area, the maximum maintained illuminance levels as required by the Credit Criteria, the area of the space, the area that is compliant in both square meters and percentage compliance, and identifies the lighting layout and description and whether such layout is typical. The summary table must also demonstrate that the total compliant area is more than what is required by the Credit Criteria; and, - Describing the modelling or measurement methodology and all inputs used. - If the glare point is claimed, describing the method of glare control, and any modelling if required. In addition, the short report must describe the modelling or measurement methodology used and all inputs used. All relevant modelling results must be included in the report and referenced to the appropriate Credit Criteria.	Design	Electrical Contractor		
IEQ-13.02	IEQ-13 Lighting Comfort	As Built Documentation such as reflected ceiling plan (RCP) drawings or manufacturer's datasheets showing for each lighting layout: - The size of the area served by each lighting layout and the relevant lighting identifier; - The location of all luminaires; - The lamp type for each luminaire; - The ballast type for each luminaire; - Where the point under Surface Illuminance is claimed, the minimum surface reflectance values of the finishes for ceilings, walls and surfaces at the working plane.	Practical Completion - As Built Drawings	Electrical Contractor		
INN-01.01	Innovation - Exceeding Green Star Benchmarks for MAT-9	Submission Template filled in by a suitable professional.	Design	Architect		
INN-01.02	Innovation - Exceeding Green Star Benchmarks for MAT-10	Evidence of innovation viability - Including any evidence necessary to demonstrate that the initiative justifies an innovation point. - Evidence may be in the form of as-built drawings, extract(s) from the Commissioning Report that demonstrate that the initiative operates as intended by the design, extracts from a peer-reviewed publication or other research acknowledgement. Evidence must demonstrate that the outcome achieved has a demonstrable environmental benefit beyond the Green Star benchmark.	Design	Architect		
INN-01.03	Innovation - Exceeding Green Star Benchmarks for MAT-11	Short report prepared by a suitable professional that describes how the Credit Criteria for MAT-9 have been met by: Referencing supporting documentation and describing, with calculations and summary tables wherever appropriate, how the Credit Criteria have been achieved;	Design	Architect		
INN-01.04	Innovation - Exceeding Green Star Benchmarks for MAT-12	As Built drawings showing installation of prefabricated modules.	Practical Completion - As Built Drawings	Architect		
INN-01.05	Innovation - Exceeding Green Star Benchmarks for MAT-13	Extract(s) from the As Built Fixtures and Fitting Schedule: - Where kitchens are prefabricated, specifying the percentage of prefabricated kitchens; - Where bathrooms are prefabricated, specifying the percentage of prefabricated bathrooms.	Practical Completion - As Built Drawings	Urbanest		
INN-01.06	Innovation - Exceeding Green Star Benchmarks for MAT-14	Confirmation from the contractor indicating the amount and type of product/material installed in accordance with the specifications. - Where kitchens are prefabricated, specifying the percentage of prefabricated kitchens; - Where bathrooms are prefabricated, specifying the percentage of prefabricated bathrooms.	Practical Completion	Architect		
MAN-01.01	MAN-1 Green Star Accredited Professional	A copy of the nominated Green Star Accredited Professionals accreditation certificate. The nominated GSAP CPD enrolment must be valid from the time of schematic design to construction completion.	Design	GSAP		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
MAN-01.02	MAN-1 Green Star Accredited Professional	Letter of appointment from the client, confirming the appointment of the GSAP in the project. The letter must include a scope of works as below. The contract or letter should confirm that the GSAP is appointed from the time of schematic design until construction completion. The GSAP has been contractually engaged to: - Advise on all features and stages of the Green Star Certification process; and - Provide environmental design advice based on Green Star from the schematic design phase through to construction completion. The GSAP must adopt a leadership role to ensure all involved parties in the design and construction phases of the building understands the Green Star principles, structure, timing and process including: - Environmental Categories; - Eligibility; - Point allocation and scores; - Certification process; - Documentation and compliance requirements; - Technical Clarifications and Credit Interpretation Requests; and - Green Star branding and marketing rules. Demonstrate active involvement in all stages of the project providing guidance and support as follows: - Participate in meetings, ESD workshops and design workshops; - Promote and execute the incorporation of Green Star provisions from design through to practical completion of the project; - Review all documentation for compliance with Green Star; and - Be responsible for the preparation and execution of the Green Star certification submission(s).	Design	Urbanest / Head Contractor		
MAN-05.03	MAN-5 User and Maintenance Guides	General Table of Contents showing that information has been provided for all systems.	Design	GSAP		
MAN-05.04	MAN-5 User and Maintenance Guides	Extract(s) from the Building Maintenance Guide for a particular system showing: • The information that must be presented; and • How the information must be presented.	Design	GSAP		
MAN-05.04	MAN-5 User and Maintenance Guides	Building Maintenance Guide must include: - A summary sheet of relevant contacts; - Details on energy, water, indoor environment quality and waste targets and benchmarks for the project, and on the metering and sub-metering strategy, including any instructions, and operational strategies as required by 'Metering and Monitoring'. IEQ targets include targets for low VOC procurement, photocopiers and cleaning products; - Description of basic function, operation, and efficiency features of the relevant systems in the project; - Description of the operational waste policy; - Description and location of the sustainable procurement guide (if available); - Providing any additional information on the consideration that should be taken during re-fit, refurbishment, and maintenance and care of all furniture, fixtures, fittings, finishes, and equipment, including information of all suppliers, warranties, product stewardship agreements, or recycling instructions at the end of life; and Description of responsible cleaning procedures.	As Built	Head Contractor		Head Contractor to extract and compile relevant information from O&M Manuals. GSAP to provide template.

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
MAN-05.04	MAN-5 User and Maintenance Guides	O&M Manuals: The information covered must include the building information for the following as a minimum: - External building fabric; - Heating, ventilation, air conditioning, and exhaust services; - Electrical (power, lighting, and automation) services;• - Metering systems; - Lifts, escalators, and travelators; - Security; - Hydraulic services; - Landscaping; - Glare control systems; - Hot Water systems; and - Energy generation systems. The information must be presented as follows: - Introduction to the project - General equipment and systems description, with references to the detailed sections; and - For each building service / system listed above, where applicable, detailed guidance on access and maintenance as follows - Introduction and Scope - Equipment or asset information/schedules - Maintenance requirements - Operations - Warranties, Certificates and Commissioning - Suppliers or Help Contact - Drawings and Reference Information.	As Built	Head Contractor		
MAN-06.01	MAN-6 Environmental Management	Short report or narrative describing how the EMP was implemented, briefly describing the reporting that will be created through the use of the EMP, and including a draft compliance matrix showing how the requirements of Section 3 of the NSW Environmental Management System Guidelines (2009) will be fulfilled.The EMP includes provisions for construction Indoor Air Quality (IAQ) for the works that meets or exceeds the recommended control measures of Chapters 3 and 4 of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2008. The contractor has a valid ISO 14001 Environmental Management System (EMS) accreditation prior to and throughout construction.	Design	Head Contractor		
MAN-06.02	MAN-6 Environmental Management	Environmental Management Plan • A comprehensive, project-specific EMP, clearly demonstrating compliance with the requirements of Section 3 of the NSW Environmental Management System Guidelines (2009), and Chapters 3 and 4 of the SMACNA Guidelines for Occupied Buildings under Construction, 2008 at the time of construction works. The EMP must be signed by the head contractor.	Design	Head Contractor		
MAN-06.03	MAN-6 Environmental Management	Compliance Matrix • A compliance matrix must be produced by the project team that includes the NSW Environmental Management System Guidelines (2009) requirements and a statement of how these have been fulfilled in the EMP.	Practical Completion	Head Contractor		
MAN-06.04	MAN-6 Environmental Management	Contractor ISO 14001 certificate • A copy of the current and valid ISO 14001 certificate showing the date of issue prior to the commencement of construction works.	Immediate	Head Contractor		
MAN-07.01	MAN-7 Waste Management	Short report or narrative confirming compliance with the Credit Criteria by summarising the total amount of demolition and construction waste generated, how it was re-used/recycled, and indicating the total percentage of the waste diverted from landfill.	Construction	Head Contractor		This report should be set up at beginning of construction and monitored to ensure that requirements are being met through out construction.
MAN-07.02	MAN-7 Waste Management	Quarterly waste reports for the entire duration of construction works issued to the building owner, referencing appended receipts and any other appropriate records (e.g. evidence of re-use), stating the total amount (by mass) of waste generated and the percentage re-used or recycled. The reports must reference the date, total waste collected, total waste sent to landfill, total waste sent to recycling, and the percentage sent to recycling.	Construction	Head Contractor		
MAN-10.01	MAN-10 Learning Resources	Shoprt report that describes how the credit criteria have been met by: summarising each initiative, stating which Green Star credit it relates to, and describing how this initiative is communicated or displayed to educate all building occupants; Describing how real-time data for water and energy initiatives is continuously displayed to all building users; and, Referencing relevant specifications and drawings.	Design	Architect		
MAN-10.02	MAN-10 Learning Resources	As Built drawings showing the location of each initiative and display mechanism (e.g. monitors, visual displays etc).	Practical Completion - As Built Drawings	Architect		
MAN-17.01	MAN-17 Operational Waste	Short report that summarises how the credit criteria have been met by: describing the common and additional waste streams present in the project that will be recycled; the implementation strategy; and, the disposal strategies for the common and additional waste streams.	Design	Urbanest		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
MAN-17.02	MAN-17 Operational Waste	Operational waste management plan: describing the common and additional waste streams present in the project that will be recycled; describing in detail the implementation strategy, including the location of recycling storage areas; detailing any signage, diagrams or information provided to ensure that it occurs; specifying how the waste will be collected from any collection areas; and stating what measures and commitments exist, and with whom, to ensure the waste can be collected and recycled.	Design	Urbanest		
MAN-17.02	MAN-17 Operational Waste	Waste Auditors Qualification demonstrating that the Auditor is suitably qualified.	Design	Urbanest		
MAN-18.01	MAN-18 Commissioning and Tuning	A Commissioning Report must be prepared following practical completion to certify that appropriate commissioning has taken place in accordance with the requirements laid out in the Commissioning Plan. The commissioning report must be signed by the head contractor or the owner representative, or the ICA if present. The Commissioning Report is to include commissioning dates; records of all functional/commissioning testing undertaken; future seasonal testing; a list of outstanding commissioning issues; and, the outcomes and changes made to the project as a result of the commissioning process, accounting for all of the recommendations.	Practical Completion - Commissioning Report	ICA		
MAN-18.02	MAN-18 Commissioning and Tuning	Short report or narrative prepared that describes the submission for this credit. The short report should detail that the points being claimed (Services and Maintainability Review, Commissioning, Tuning, and an Independent Commissioning Agent); and provides a short summary of how each of the credit criteria is being claimed, with a correlation to the documentation submitted including: Evidence of compliance with the minimum requirement; Extract(s) from the specification(s); Service and maintainability report; and, CV of the Independent Commissioning Agent.	Design	Head Contractor		
MAN-18.03	MAN-18 Commissioning and Tuning	Evidence of Targets for the environmental performance: The project team must have set and documented targets for the environmental performance of the project during its design and development. The most common method for demonstrating that this has occurred is through the development of a document such as a design intent report, project operating requirements document, basis of design document, or through the design brief. This document must be prepared by the project team and outline, as a minimum, the following items: • Description of the basic functions, operations, and maintenance of the nominated systems. • The targets for energy and water consumption for the project. • Monitoring: A description of how energy and water use, and indoor environment quality are monitored.	Design	Head Contractor		
MAN-18.04	MAN-18 Commissioning and Tuning	Building Tuning Commitment demonstrating that there is a requirement for a building tuning process. Following practical completion and prior to occupation, the client must commit to a tuning process of all nominated systems. At a minimum, the commitment must include quarterly measurement for the first 12 months after occupation. The scope of the tuning works will determine the relevant tuning period. The building tuning process will require the measurement of data from the monitoring of the systems and occupant feedback of building conditions. During the tuning period, the client must commit to take steps to adjust the nominated systems to account for all deficiencies. A commitment from the building owner is required to confirm that there is a requirement for a building tuning process and responsibilities are assigned to have all nominated systems tuned after practical completion. This commitment can be included in the Commissioning Plan or provided as a letter from the building owner. The commitment is to include the following: • An Operating and Maintenance Manual has been developed in accordance with the approved standards (refer to Additional Guidance) • A building tuning manual, or a building tuning plan, has been developed in accordance with a nominated standard; • A building tuning team has been created including the facilities manager, the owner's representative and the ICA if present. The head contractor and the services design professionals, will be available to address to specific tuning issues where required. • The owner has engaged a person responsible for the tuning of all nominated services. This engagement includes requirements for: - verifying that nominated systems are performing to their design potential in full and part load conditions; - reviewing environmental performance against environmental targets; - collecting user feedback to match the occupants needs and the system performance; - adjustment of all the systems to account for all deficiencies; and - managing, communicating, and assigning responsibility for the tuning process within the team.	Immediate	Urbanest / Head Contractor / ICA		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
MAN-18.05	MAN-18 Commissioning and Tuning	Service and maintainability report prepared by the ICA. A comprehensive services and maintainability review is led by the head contractor or the owner's representative, or the ICA (if present) at the design stage and prior to construction. The services and maintainability review is to facilitate input from the design team, the facilities manager (if known) and any relevant subcontractors (if engaged). The review must address the following: • Commissionability • Controllability • Maintainability • Operability The services and maintainability review is to be summarised in a Service and Maintainability Report, and signed by the involved parties. Action items resulting from this review are to be incorporated in the design document outlined in the 'Minimum Requirement' stage. Information on the requirements of this review are outlined in the approved standards (refer to Additional Guidance) The Services and Maintainability Review should be undertaken prior to the issue of each tender package or prior to construction. If a project team performs a maintainability review during construction, the project team must show that any changes recommended by the review have been implemented throughout the project.	Immediate	ICA		
MAN-18.06	MAN-18 Commissioning and Tuning	CV of the Independent Commissioning Agent detailing the qualifications and experience relevant to the project.	Design	ICA		
MAN-18.07	MAN-5 User and Maintenance Guides	Short report or narrative prepared that describes the submission for this credit. The short report should detail the provision of 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 and a Building Maintenance Guide, which provides detailed guidance on accessing and maintaining both the building's services and external building fabric, is developed by the design team and made available to the building owner(s) or manager.	Design	GSAP		
MAN-18.08	MAN-5 User and Maintenance Guides	Extract(s) from the information to the user, showing that the information required has been provided. The information provided can be either, or a combination of, an extract from the draft building user's guide; an extract of a section showing that the requirements for a particular system are being met; screenshots of an online website; and/or photographs of relevant signage. The information provided must be relevant to the extent of its design.	Design	GSAP		
MAT-04.01	MAT-4 Concrete	A short report prepared by a suitable professional summarising the credit criteria claimed.	Design	GSAP		
MAT-04.02	MAT-4 Concrete	Structural engineers report including a summary calculation of the Portland cement content in the project based on the Green Star reference case and the actual case as well as the percentage reduction of Portland cement. Table 2 shall be used when documenting Portland cement use and relevant percentages.	Construction	Structural Consultant		This report should be set up at beginning of construction and monitored to ensure that requirements are being met through out construction.
MAT-05.01	MAT-5 Steel	A short report prepared by a suitable professional providing uses and quantities of structural and reinforcing steel and a summary of the Credit Criteria options being claimed. • An as-installed steel schedule prepared by a quantity surveyor, cost manager, cost planner, cost estimator, or architect summarising the uses and quantities (by mass) of structural and reinforcing steel by documenting (see examples in Additional Guidance). The schedule must include: – Product and supplier names; – The Credit Criteria that are being claimed; – Indication of compliance with the nominated Credit Criteria; – Quantities (by mass) of installed products; and – Describing how the Credit Criteria have been achieved and referencing supporting documentation.	Construction	Structural Consultant		This report should be set up at beginning of construction and monitored to ensure that requirements are being met through out construction.
MAT-05.02	MAT-5 Steel	Steel manufacturer ISO 14001 certificate from the Steel Making facilities where the structural or reinforcing steel was produced	Immediate	Head Contractor		Note, confirm all steel suppliers meet requirements prior to ordering steel.
MAT-05.03	MAT-5 Steel	Evidence of membership to WSA's Climate Action Programme from the Steel Making facilities where the structural or reinforcing steel was produced (See Compliance Requirements).	Immediate	Head Contractor		Note, confirm all steel suppliers meet requirements prior to ordering steel.
MAT-05.04	MAT-5 Steel	Confirmation from the Supplier stating, where relevant based on the credit criteria claimed: • That they are a responsible steel maker, and listing their compliance documentation. • The total quantities (by mass) of structural and/or reinforcing steel supplied to the building.	Immediate	Head Contractor		Recommend that confirmation from supplier is received prior to sub-contractor starting on site.
MAT-05.05	MAT-5 Steel	Energy-Reducing Processes report from every reinforcing steel maker, explaining the energy-reducing processes used in their steel making process and confirming that it is used in the production of at least 60% of the reinforcement products they produce on an annual basis. (See Polymer Injection Technology and Equivalency Protocol explanations in Additional Guidance). The report must contain a summary of the life cycle assessment result for this technology in accordance with the Equivalency Protocol.	Immediate	Head Contractor		Confirm all steel suppliers meet requirements prior to ordering steel.

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
MAT-06.01	MAT-6 PVC	Short report describing how the Credit Criteria have been met by providing: • An as-installed PVC schedule prepared by a quantity surveyor, cost manager, cost planner, cost estimator, or project manager showing cost calculations to demonstrate how the credit criteria is met. The PVC schedule must provide: • Type of common uses of PVC products ; • Product and supplier names; • Indication of compliance; • Reference to evidence of independent verification; • Quantities of installed products; • Total costs of compliant and non-compliant products; and • The percentage (by cost) of the total common uses of PVC products that are compliant with the credit criteria.	Construction	Head Contractor		This report should be set up at beginning of construction and monitored to ensure that requirements are being met through out construction.
MAT-06.02	MAT-6 PVC	Evidence of independent verification from the supplier demonstrating how PVC products comply with the Best Practice Guidelines for PVC in the Built Environment.	Immediate	Electrical Contractor		Confirm all PVC suppliers meet requirements prior to sub-contractor starting on site.
MAT-06.03	MAT-6 PVC	Evidence of independent verification from the supplier demonstrating how PVC products such as wire and cable insulation comply with the Best Practice Guidelines for PVC in the Built Environment.	Immediate	Mechanical Contractor		Confirm all PVC suppliers meet requirements prior to sub-contractor starting on site.
MAT-06.04	MAT-6 PVC	Evidence of independent verification from the supplier demonstrating how PVC products comply with the Best Practice Guidelines for PVC in the Built Environment.	Immediate	Hydraulics Contractor		Confirm all PVC suppliers meet requirements prior to sub-contractor starting on site.
MAT-06.05	MAT-6 PVC	Confirmation from the supplier(s) confirming that the PVC products listed in the PVC schedule have been supplied and installed.	Construction	Head Contractor		Recommend that confirmation from supplier is received prior to sub-contractor starting on site.
TRA-01.01	TRA-1 Provision of Car Parking	A short report prepared by a suitable professional that describes how the Credit Criteria have been met by stating how the development satisfies the Credit Criteria, including a comparison between the total number of car parking spaces provided by the project against the total maximum or minimum number of car parking spaces allowed.	Design	GSAP		
TRA-01.02	TRA-1 Provision of Car Parking	Extract(s) from the local planning allowances where: - The car parking allowances for the site or region are nominated; - It is indicated where the allowances are mandatory or otherwise; and, - The date and issuing authority are identified.	Design	Urbanest		
TRA-01.03	TRA-1 Provision of Car Parking	As Built drawings of all car parking provisions for the site showing the number of car parking spaces in the project.	Practical Completion - As Built Drawings	Architect		
TRA-03.01	TRA-3 Cyclist Facilities	A short report prepared by a suitable professional that describes how the Credit Criteria have been met by: - Calculating the number of cyclist facilities required to meet the credit criteria; - Stating how many cyclist facilities are provided; - Describing how the bicycle storage meets the criteria for security, weather protection and lighting; - Justifying the convenience of the location of the secure bicycle storage. - Confirming that all bicycle parking spaces are compliant with AS2890.3 Bicycle Parking Facilities.	Design	Architect		
TRA-03.02	TRA-3 Cyclist Facilities	As Built drawing(s) showing: - The number and location of bicycle parking spaces; - Weather protection for bicycle parking spaces; and - Where applicable, the path(s) connecting the building entrance with the storage facilities.	Practical Completion - As Built Drawings	Architect		
TRA-04.01	TRA-4 Commuting Mass Transport	Completed Green Star Mass Transport Calculator	Design	GSAP		
TRA-04.02	TRA-4 Commuting Mass Transport	A short report prepared by a suitable professional that describes how the Credit Criteria have been met by summarising the services that correspond to each mass transport stop showing the route number of the bus services for each stop. The timetables used for the calculations must be included as an appendix.	Design	GSAP		
TRA-04.03	TRA-4 Commuting Mass Transport	As Built site plan extending to surrounding areas clearly showing: - The 'Distance to Site' inputs into the Calculator. It must be legible and to scale; - The major entrances to the building must be marked; - The mass transport stops must be clearly indicated and labelled with the associated services; and, - The distance from the major entrances of the building to the entrance of the transportation hub.	Practical Completion - As Built Drawings	Architect		
TRA-04.04	TRA-4 Commuting Mass Transport	Extract(s) from the timetables for each route showing service frequency at peak periods. The timetable provided must not be more than six months old from the date of submission.	Design	GSAP		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
TRA-05.01	TRA-5 Walkable Neighbourhoods	Short Report prepared by a suitable professional that describes how the Credit Criteria have been met by stating how the project achieves a walk score of at least 90, as determined by the website www.walkscore.com using their street smart method of calculation.	Design	GSAP		
TRA-05.02	TRA-5 Walkable Neighbourhoods	Printout from the Walk Score website showing the result achieved for the project location and all recognised amenities.	Design	GSAP		
TRA-06.01	TRA-6 Transport Design and Planning	Short report or narrative prepared by a suitably qualified professional detailing how the Credit Criteria have been met by: - Describing the location of the information point; - Explaining the information provided to the user; and - Explaining how the information point is accessible to all building users.	Design	Architect		
TRA-06.02	TRA-6 Transport Design and Planning	As Built Drawings Showing the location of relevant signage.	Practical Completion - As Built Drawings	Architect		
TRA-06.03	TRA-6 Transport Design and Planning	As Built Drawings: Indicating power and network supply to the travel information point.	Practical Completion - As Built Drawings	Electrical Contractor		
TRA-06.04	TRA-6 Transport Design and Planning	Confirmation from the contractor stating that the information points have been installed.	Practical Completion	Electrical Contractor		
WAT-01.01	WAT-1 Potable Water	Short Report briefly describing the building's water efficiency strategy. The short report must include: - A break down of space types justifying the entries to the Calculator and referring to plans provided as part of the General section of the submission; - Justifying all inputs to the Calculator including a description of occupancy profiles justifying the entries in the Calculator; - Referencing tender schematic hydraulic drawings and specifications; and, - Where any alternative calculation methodology to that in the Potable Water Calculator is used, this report should disclose and justify all assumptions, and calculations.	Design	Hydraulics Contractor		
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WAT-01.02	WAT-1 Potable Water	As Built fixtures and fittings schedule clearly showing all hydraulic fixtures and fittings in the project.	Practical Completion - As Built Drawings	Hydraulics Contractor		
WAT-01.02	WAT-1 Potable Water	As Built fixtures and fittings schedule clearly showing all hydraulic fixtures and fittings in the project.	Practical Completion - As Built Drawings	Architect		
WAT-01.03	WAT-1 Potable Water	As Built schematic hydraulic drawings showing the location of all water reuse, collection and storage systems.	Practical Completion - As Built Drawings	Hydraulics Contractor		
WAT-01.04	WAT-1 Potable Water	WELS Certificates for all toilets, urinals, taps and showers clearly showing the flow rates of each item.	Immediate	Head Contractor		Confirm all fittings meet requirements prior to ordering/sub-comntractors starting onsite.
WAT-01.05	WAT-1 Potable Water	Completed Potable Water Calculator. A copy of the completed Potable Water calculator referencing the short report and supporting evidence.	Design	GSAP		
WAT-01.06	WAT-1 Potable Water	Where non standard profiles are used: Letter from the building owner must be provided confirming any non-standard user defined profiles and design occupancy.	Design	Urbanest		

Urbanest W2 The Haymarket Student Accommodation - Action List - 4 Star Green Star As Built Rating

Version: 001 | Pathway: Urbanest Green Star Scorecard v001 | Date: 19/04/2013 | Prepared by: SR

Reference	Credit	Documentation Required	Phase	Responsibility	Responsibility Confirmed (Y / N)	Comments
WAT-01.07	WAT-1 Potable Water	Short report from the Landscape Architect describing the landscape design and the irrigation system, by including information about the coordinates of the site and for each landscaped zone: • Listing the name, location, and size of each zone as it appears in the Calculator. The location of the zone should be described sufficiently for the Green Star Certified Assessors to locate it on the landscape plan; • Listing the dominant plant species in each zone, and the corresponding crop coefficients entered to the Calculator; • Justifying any changes made to the microclimate factors by including attachments of tender drawings showing the features protecting the zone(s); • Justifying any user determined irrigation application efficiencies by including manufacturer's information or specifications clearly showing that the nominated application efficiency can be achieved under the conditions.	Design	Landscape Architect		
WAT-01.08	WAT-1 Potable Water	As Built landscape plan marked up to show the entire landscaped area of the site and to show each zone as entered in the Calculator.	Practical Completion - As Built Drawings	Landscape Architect		
WAT-01.09	WAT-1 Potable Water	Weather data from the Bureau of Meteorology containing the site specific mean monthly evapotranspiration and mean monthly rainfall data, including the grid coordinates of the site.	Design	Landscape Architect		
WAT-05.01	WAT-5 Fire System Water	Short report from a suitably qualified professional that describes how the Credit Criteria has been met by: • Describing the system, and its operation and testing requirements of the proposed fire protection system; and, • Where a sprinkler system is present, describing how the collected water will be re-used on-site.	Design	Hydraulics Contractor		
WAT-05.02	WAT-5 Fire System Water	As-built drawings of the fire protection system for each typical floor, and of the system(s) used for water storage and re-use.	Practical Completion - As Built Drawings	Hydraulics Contractor		
WAT-05.03	WAT-5 Fire System Water	Extract(s) from the Commissioning Report demonstrating that the fire protection system and the systems for reuse of test water has been commissioned and operates as intended by the design.	Practical Completion - Commissioning Report	ICA		
WAT-07.01	WAT-7 Water Efficient Appliances	Short Report demonstrating that dishwasher are installed as part of the base building works; and all dishwashers are within one point of the highest available rating under the Australian Government's WELS rating as per the WELS standard AS/NZS 6400:2005 Water Efficient Products - Rating and Labelling. For those not covered by WELS, dishwasher and clothes washers show an improvement of 10% over the performance in energy consumption of typical equipment of the same kind. Where the benchmarking method was used, the report must show how the benchmarks were arrived to.	Design	Hydraulics Contractor		
WAT-07.02	WAT-7 Water Efficient Appliances	As Built appliance schedule demonstrating that: • The highest available rating for the equipment type, or the benchmark for the equipment that it must exceed; and • All typical equipment will meet the WELS requirements.	Practical Completion - As Built Drawings	Hydraulics Contractor		
WAT-07.02	WAT-7 Water Efficient Appliances	As Built appliance schedule demonstrating that: • The highest available rating for the equipment type, or the benchmark for the equipment that it must exceed; and • All typical equipment will meet the WELS requirements.	Practical Completion - As Built Drawings	Architect		
WAT-07.03	WAT-7 Water Efficient Appliances	Extract from the WELS database clearly indicating, for each equipment mode, the rating achieved under the WELS labelling scheme.	Design	Architect		
WAT-07.04	WAT-7 Water Efficient Appliances	Information from the manufacturer indicating, for each equipment model, the water use.	Design	Hydraulics Contractor		