

ANNEXURE H – Project Brief



PROJECT BRIEF/ SCOPE OF WORKS

Proposed New Commercial Office Development at
4 NATIONAL CIRCUIT, CANBERRA



Attorney General's Department - Issue A

Revision 03 Issued: 4 May 2010

Approved:

ISPT (The Owner) _____ Date: _____

Bovis Lend Lease (Project Manager / Contractor) _____ Date: _____

The Tenant _____ Date: _____



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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
1.0	INTRODUCTION			
1.1	<p>Aspirational Brief</p> <p>The overriding brief for this project has been developed following extensive research into the world's leading work place environments. From this exercise, it was concluded that the following items were fundamental to creating a workplace that can be benchmarked against world's best practice.</p> <ul style="list-style-type: none"> • Campus style buildings, with the opportunity for enhanced vertical & horizontal connectivity that promotes knowledge transfer, communication, collaboration and productivity. • Well positioned contiguous atriums to enhance the work place environment and provide visual connectivity across the floor plates. • At the tenant's request, stairs can be provided within the atrium to promote interfloor travel. • Enhanced activation at base of atrium provided amenity and diversity unique to Canberra • A unique and dynamic ground plane, highly activated and enhanced to provide a surround amenity unattainable elsewhere in Canberra • Integrated retail which activates the ground plane and provides alternative break-out and meeting spaces • Expressed workplace and building innovation – achieved in the building architecture including floorplate configuration, atrium detailing and building facade. 			

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	<ul style="list-style-type: none"> • Environmentally sustainable design – passive and visual, delivering world’s best practice for internal environment quality and energy. (Demonstrated by 5 Star Green Star Design rating.) • Floor plates that are large, regular and flexible yielding high levels of efficiency. • Located within and reinforcing the National Circuit precinct. 			
1.2	Benchmark Buildings			
	<p>Due to the conceptual nature of the design, the following buildings have been nominated to provide a benchmark in terms of quality, material selection and appearance:</p> <p>Main Lobby: CBA Campus, 2-4 Dawn Fraser Ave, Olympic Park, Sydney Adelaide Advertiser, Adelaide</p> <p>Typical floor lobbies: 30 Hickson Road, The Bond, Sydney</p> <p>Typical floor finishes: CBA Campus, 2-4 Dawn Fraser Ave, Olympic Park, Sydney</p> <p>Atrium and Lift finishes CBA Campus, 2-4 Dawn Fraser Ave, Olympic Park, Sydney Adelaide Advertiser, Adelaide</p> <p>Facade CBA Campus, 2-4 Dawn Fraser Ave, Olympic Park, Sydney</p> <p>Car park Finishes: CBA Campus, 2-4 Dawn Fraser Ave, Olympic Park, Sydney</p> <p>Back of House finishes: CBA Campus, 2-4 Dawn Fraser Ave, Olympic Park, Sydney Adelaide Advertiser, Adelaide</p>			

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1.3	The Building			
1.3.1	Building Overview Building Type Commercial Office Building – Campus Style			
	Standard: Grade A (generally in accordance with PCA guidelines as noted in PCA summary compliance table) All works shall meet the relevant Australian Standards, and comply with The Building Code of Australia and relevant authority requirements Nabers Rating: 5 Star NABERS Energy Greenstar Rating: 5 Star Greenstar Office V3 – Design Rating The following scope of works comprises those items to be provided within the development of the 4 National Circuit Project.			
1.3.2	Siting			
	Provide a development that responds appropriately to the surrounding context, providing : <ul style="list-style-type: none"> • a primary and identifiable National Circuit Address • an appropriate response to known security and setback requirements of the Patents Office at 2 National Circuit • an appropriate response to known (Attorney General Department) tenant requirements • an appropriate relationship to 2 National Circuit • and promoting public access, passive security , clear identity and visibility • a highly efficient building and tenant floor plates • acoustic privacy 			

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1.3.3	The Building			
	<p>The development will comprise of two buildings with each building being 6 storeys high (Ground + 5 levels above ground) and have a total Nett Lettable Area of approximately 29,800m². The typical floor plates are approximately 2100 m² for the East Building and 3200 m² for the West Building, with ground level comprising of approximately 2800m² of commercial NLA and 500m² of retail NLA</p> <p>A common car park serves the two buildings and provides approximately 708 cars over four basement levels. Of the 708 cars, approximately 120 cars will be allocated to the Patents Office (2 National Circuit) for their exclusive use. Courier parking is provided at ground level.</p> <p>The loading dock is situated on the Ground Level</p> <p>The Ground levels will comprise of retail, commercial space, and main entry lobbies.</p> <p>Each building will include atriums.</p> <p>Each building will comprise of a single lift rise serving the ground and office floors only. A shared passenger/goods lift will be provided in each building and will serve all levels including the basement and roof plant room. Two shuttle passenger lifts will be provided external to the building to serve the basement car park.</p> <p>Building services and finishes commensurate with that of an 'A Grade PCA '</p> <p>Lift performance shall be based on population (1 person / 12 m²) in line with PCA A-grade.</p> <p>Building design capacity is to be 1 person / 10m² for office floors.</p>			
1.3.4	Floor Plate Concept			
	<p>East Building:</p> <p>The floor plates are approximately 25m wide serviced by a side core located at the west perimeter of the building. Between the floor plates and core an atrium of approximately 6m is</p>			

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	<p>provided.</p> <p>West Building:</p> <p>The floor plates are approximately 25m wide connected by a central core. An atrium is provided to the east of the core which engages with the building façade to enhance daylighting and views into the courtyard below.</p> <p>The design results in a flexible working environment that encourages a high level of interaction.</p>			
1.3.5	<p>Building Entry</p>			
	<p>The building will have three entry points. The main formal entry to the development will be from National Circuit providing a formal entry into the central foyer which links the secure lobbies of the two buildings. The two secondary entry points will be from the plaza between 2 and 4 National Circuit, accessed from National Circuit and Macquarie Street and leading to the central foyer and the east building lobby respectively.</p> <p>The foyer finishes will be selected to create a warm and inviting atmosphere with high quality finishes which are durable, and appropriate for the expected level of pedestrian traffic.</p> <p>Ceiling, wall and floor finishes and all integrated elements including specialist lighting, will be fit for purpose; selected to achieve the aesthetic aspirations as well as the maintenance and lifecycle expectations of ISPT.</p> <p>The entry lobbies will be highly visible from the public realm, particularly at night, and will bring vibrancy and animation into the public spaces.</p>			

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1.3.6	Retail			
	<p>Approximately 500 m2 of retail tenancy area will be provided at ground level and positioned predominantly around the perimeter of the central public space framed by the two buildings. The retail area is to be handed over as shell and core for fitout by the individual retail tenants.</p> <p>Tenancy dividing walls will be unpainted blockwork and no ceilings will be provided. A proprietary aluminium framed glazed shopfront system will be provided to the retail spaces with one pair of manual pivot doors. Provision will be made for connection to services as detailed in the following sections of this document.</p>			
1.3.7	Building Management/Security Facilities			
	<p>The Tenant, at its own cost may install a concierge desk within the ground floor lobby of each building for its use. The design must be of high quality and integrated into the architecture of the building. The desk will act as the central security point and be connected directly to the building security system. It shall be located in close proximity to the lift lobby and integrated speed stiles (to be provided by tenant) to assist visitors with access if required.</p> <p>The desk shall make provision for the following:</p> <ul style="list-style-type: none"> • Access control terminal • CCTV terminal • Conduit to the desk (assumed to be freestanding) including power and base building and security infrastructure data connections • Secure shelving for PC storage • Space and power for recharging station for two-way radios • Secure storage for visitor access card storage • Space for 2 No. security staff, to manage visitors, staff without access cards and traffic flow through the lobby 			

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	<ul style="list-style-type: none"> • Space for remote speed style release button • Space for duress alarm panel for any future tenant requirements for duress alarms • A dock master room will be provided within the loading dock. 			
1.3.9	<p>Maintenance</p> <p>A building maintenance and access strategy that addresses all aspects of regular safe access and maintenance of all areas will be provided. The strategy will explore cost effective solutions that minimise the need for ladder access, confined space training, harness/rope access, scissor lift or platform access. Access to back of house areas and services risers via the tenancy areas shall be avoided where possible.</p>			
1.3.10	<p>Signage</p> <p>Provision shall be made within the design to accommodate future building identification signage at street level and illuminated signage at the upper level of the facade. All tenant signage is to be excluded from the base building scope.</p> <p>Architecturally designed identification and statutory signage for services, amenity and escape areas will be provided throughout in compliance with BCA and Australian standards.</p>			
1.4	<p>General Requirements of the Development</p>			
1.4.1	<p>General</p> <p>The building must specifically consider in planning, design, construction, commissioning and operation the following criteria and develop balanced responses:</p> <ul style="list-style-type: none"> • Proven reliability and performance • Ease of maintenance and replacement 			

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	<ul style="list-style-type: none"> • Energy efficiency as defined • Environmental responsibility • Cost effectiveness • Current technology and standards • Minimum life cycle cost • Compliance with The Building Code of Australia, all current statutory requirements 			
1.4.2	Warranty and Defects Liability Period			
	<p>The building will be subject to a 52 week Defects Liability Period from the date of Practical Completion of Base Building Works.</p> <p>The parties have agreed that the Attorney General's Department fitout (approx 8,000m2) will be fully integrated with the base building construction and accordingly the duration of the Defects Liability Period will be from that combined completion date of the West Building.</p>			
1.4.3	Commissioning ,Training and Handover			
	<p>The Contractor will facilitate the training of the Building Manager in all active and passive systems within the building. During the DLP, this will include the measurement and adjustment to system operations to ensure the Nabers Energy targets are met.</p>			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
	PART A			
2.0	ARCHITECTURAL			
2.1	Building Areas			
	<ul style="list-style-type: none"> Ground Level: Retail NLA approx 500m2 Commercial NLA approx 2800m2 Office levels: Commercial NLA approx 26,500m2 Approximately 708car parking spaces over four basement levels, including approximately 71 small car spaces. Bike parking –bike racks and courier bike spaces to Greenstar requirements Motorcycle parking – will be provided <p>The final NLA areas (+/- 2% tolerance) will be confirmed by the registered surveyor on issue of the final construction documentation and on completion of the construction works.</p>			
2.2	Building Entry, Foyer and Lobby			
2.2.1	Entry Doors			
	<p>Automatic sliding shall be provided at the main entries. Recessed entry mats shall be provided to these entries.</p> <p>The design allows for after hours access via a side entry door adjacent to the main entry door/s. Non primary entry point doors are to have proximity readers and intercom for after hour's access. Door to be opened by push button for accessibility.</p>			

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2.2.2	Directory Board			
	A tenancy directory board will be provided in the main foyer of each building with directional signage. The directory board will be integrated into the design of the lobby.			
2.2.3	Concierge Desk			
	The tenant may, at its own cost, install a concierge desk within the main lobby with the capacity to be used as a reception desk to maintain security requirements of the site.			
2.2.4	Floor to Ceiling Height			
	The floor to ceiling height for the Ground Floor lobby will range from 3.0 – 4.0m.			
2.2.5	Artwork & Embellishments			
	No provision has been made for lobby artwork and embellishments.			
2.3	<u>Typical Office Floors</u>			
2.3.1	Floor to Floor heights			
	<p>The floor to floor heights of the office floors are as follows: Typical tower floors in the order of 3800mm to be confirmed with the design development.</p> <p>The typical ceiling height for all office levels is 2700mm, subject to specified building tolerances, measured from structural slab level to the underside of the ceiling. Bulkheads throughout the general office areas shall be avoided.</p> <p>No provision has been made in the design of the typical floor plate for access floors.</p>			
2.3.2	Lift lobby/Core			
	<ul style="list-style-type: none"> • Scale and configuration of the lobby to allow for easy maneuverability of common delivery items • Lobbies to facilitate the addition of security provisions, (security racers, duress alarm, etc.); 			

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	<p>the provision of which, if required, is to be a tenant fitout item</p> <ul style="list-style-type: none"> • Core to house base building services including supply air, return air, exhaust, stair 			
	<ul style="list-style-type: none"> • Pressurization, electrical, communications risers and backbone, fire services, hydraulic services, lifts, fire stairs and toilets. 			
2.3.3	Ceiling			
	<p>Ceilings in the office areas will be equal to 'white, high quality mineral fibre acoustic tiles in an exposed two-way metal grid and based on a 1500mm planning module'.</p> <p>The ceiling grid shall generally align with the façade mullions/ module.</p> <p>Typical lift lobbies will comprise flush set plasterboard with recessed lighting. Alternative size and types of perforations may be considered for variety.</p> <p>Other back of house areas will be completed in a combination of tiled grid and set plasterboard ceilings.</p> <p>An integrated blind pelmet will be provided to the perimeter of the building.</p> <p>A margin may be provided to the core perimeter and will comprise of painted plasterboard or modular ceiling panels to allow free access to ceiling services.</p>			
2.3.4	Ceiling Space			
	<p>The typical distance between the soffit of the ceiling system and the underside of the typical internal beams is approximately 600 mm and to the underside of the slab is approximately 900 mm.</p> <p>A tenant services reticulation zone will be provided to approx 80% of the floor area, and generally in accordance PCA A Grade standards.</p>			

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2.3.5	Window Sills & Spandrels			
	Window spandrels and sills are to be constructed to a height of approximately 500mm to the perimeter of the work areas of each floor plate.			
2.3.6	Core Design			
	<p>Core design will be developed in accordance with PCA A Grade provisions for services, amenities, pedestrian and goods lifting and egress. Other considerations that have influenced the core design have been:</p> <ul style="list-style-type: none"> • Minimal permanent structure to allow fit-out flexibility and penetration of natural light. • Discrete and secure access to toilets, incorporating airlocks, where possible • Efficient traffic flows around the floor and connectivity of different works areas. • Ease of subdivision for multiple tenants. • Access to risers and plant areas via the tenant workplace areas shall be avoided. Routinely maintained HVAC equipment is located within dedicated plantrooms for each building. Electrical and communications risers are to be accessible from non lettable area, where possible. 			
2.3.7	Typical Floors - Fire Stairs			
	Fire stairs will be treated to encourage inter-floor traffic by being appropriately finished (refer Finishes Section) and readily accessible from the floor plate. Conduits shall be provided for the tenant to connect proximity card access to each fire stair door (by tenant). Door frames are to be provided with “blanking” plates that can be removed to install the provision without damaging the door frame.			
2.3.8	Office Floor Tearooms			

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	Tea rooms will not be provided within the base building. Provision for a tenancy stack to support fitout wet area services has been allowed to approx 80% of the floorplate.			
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2.3.9	Tenant Power & Data Reticulation									
	Tenant power and data is to be reticulated via the ceiling void space.									
2.4	Sunshading									
	The floor plates are generally glazed on all sides emphasising the openness of the floor plate, and maximising the natural light, transparency and outlook from the working environment. To ensure that good thermal comfort and energy efficiency is achieved, an external sunshading strategy will be adopted that responds to the orientation of the building.									
2.5	Internal Noise Levels									
	<p>The building will be designed to both statutory requirements, good practice for commercial office buildings and Greenstar Internal Environments IEQ12 requirements</p> <p>The internal noise level to be achieved for each area in the building shall be verified with acoustic site measurements and surveys for fully operational building with all plant running at design capacity. The maximum permissible internal noise levels are:</p> <table border="0" data-bbox="347 877 784 981"> <tr> <td>Main lobby</td> <td>NR 48</td> </tr> <tr> <td>Office and lobby areas</td> <td>NR 40</td> </tr> <tr> <td>Toilets and Amenities</td> <td>NR 40-45</td> </tr> </table> <p>The main lobby and atrium design will consider the acoustic environment to avoid excessive noise permeating throughout the office environment during normal use. Consideration of the adjoining space usages shall be taken into account to ensure that noise breakout from the main lobby and atrium spaces does not override or interfere.</p> <p>Noise levels emitted by mechanical plant to outdoor recreation areas on the development site shall not exceed 5dB(A) above the existing measured background noise level (L_{A90}) in the absence of noise generated by the development.</p>	Main lobby	NR 48	Office and lobby areas	NR 40	Toilets and Amenities	NR 40-45			
Main lobby	NR 48									
Office and lobby areas	NR 40									
Toilets and Amenities	NR 40-45									

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2.6	Internal Blinds			
	Manually operated perimeter blinds to commercial floor area will be provided in accordance with Australian Standards.			
2.7	Atrium			
	<ul style="list-style-type: none"> • Fire engineering of the atrium space is to be addressed within the design. • The atrium spaces shall be provided with a glass/metal framed balustrade throughout, to approx. 1200mm height. • The atrium shall be designed with consideration of the fire engineered solution for the building with smoke baffles around the void and balustrades as required. • Atrium roof, atrium balustrading and external wall glazing shall comprise of prefabricated unitised panels where possible. • Atrium glass roof will allow light penetration deep into the floorplates and illuminate the atrium base and thereby minimize dependence on artificial lighting. • Excessive glare shall be minimized without diminishing the benefits of providing natural light to the building, or negatively impacting the ambient lighting levels on the ground plane. 			
2.8	Toilets/showers			
	<ul style="list-style-type: none"> • Each level is to be provided with A grade toilet facilities, designed in accordance with: <ul style="list-style-type: none"> • Australian Standards and BCA, at 1:10/sqm per person to the typical floors. • Air locks to be provided to toilet entry • Each typical floor is provided with male and female toilet provisions including pans, basins and urinals - the quantities in accordance with the BCA requirements. • Position facilities to prevent clear line of site • Dimensions to provide considerable visual modesty • A disabled toilet is to be provided to each level with alternate handing floor to floor and 			

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	<p>included in the overall calculations for the toilet provisions in accordance with the codes with finishes to equal that of the typical toilets</p> <ul style="list-style-type: none"> • An oversized cubicle is to be provided to each male and female toilet facility to each floor with toilet facilities. • Changeroom facilities, common showers, WC and lockers will be provided on Basement Level 1 in accordance with the relevant Greenstar ESD credit requirement. 			
2.9	Accessibility			
	<ul style="list-style-type: none"> • A disability consultant shall be commissioned to ensure compliance with disability codes and BCA for disabled access AS1428.1: 200X for circulation dimensions • Provide street level pedestrian entry 			
2.10	Fire Control Centre			
	<ul style="list-style-type: none"> • A fire control panel/centre shall be provided at street level in accordance with Code requirements. 			
2.11	Ancillary service rooms			
	<ul style="list-style-type: none"> • A dock supervisor's office shall be provided adjacent to the loading dock on Ground Level. • A cleaner's store shall be provided within the Basement. 			
2.12	Carpark Basement			
	<p>The building is served by a four level basement carpark accessed off National Circuit.</p> <p>The height for the parking will comply with the relevant standards. Entries and aisles are to have a minimum clearance of 2300mm.</p> <ul style="list-style-type: none"> • All plenum and plant room walls shall be face blockwork unless they form part of the structural core where they will be off form concrete. • No walls will be provided to the perimeter of the car park except where required for plenums. Exposed rock and/or shotcrete will be visible along the full length of the car park in these areas. • Access will be controlled with boom gates and roller shutters located at the top of the main 			

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	<p>entry ramp. Access will be 24/7 electronic control.</p> <ul style="list-style-type: none"> • Boom gates and roller shutters are to be activated without leaving the car. • Painted free hanging height bars will be provided on the entry ramp of the car park, and at entry point for loading dock deliveries. • Recycled plastic wheel stops will be provided to all car spaces. 			
2.13	Loading dock			
	<p>A shared loading dock is to be provided with a goods receiving area with clear sight lines of the loading area. Store, waste and garbage rooms shall be provided.</p> <p>The loading dock shall be secured with roller shutter access and card reader controls to the core lifts.</p> <p>The clear height of the loading facility shall be a minimum of 3.8m, to ensure all waste, delivery and dock vehicles are provided access. It will be sized to suit service vehicles up to 8.8m in length.</p>			
2.14	Waste Area			
	<ul style="list-style-type: none"> • A designated, enclosed garbage area is proposed at ground level adjacent to the loading dock to the building. • Bin storage shall be provided - final number of bins is to be determined • Recycling bin space provisions shall be included in the bin storage area • A bin wash area shall be provided sealed with a waterproof membrane and include bunding, hot and cold water, drainage, and waste grate • The bin wash area shall be located with vehicular access from the loading dock • No compactor unit is provided within the waste provisions – power shall be provided for future installation. 			

2.15	Retail areas			
	<ul style="list-style-type: none"> • Retail facilities are located to the ground level – final size of each space to be confirmed in the design development stage of the project • ISPT to provide the Retail strategy for the building in accordance with project program requirements. • Access to the retail spaces for fitout is proposed 8 weeks prior to PC • Water meters are to be provided in a location that is easy to access and read. • Retail spaces are provided with shell and core facilities only: <ul style="list-style-type: none"> - Concrete floor - Exposed slab ceiling over - Exposed block walls - Services – to include the following, described in further detail within the services sections of this report : <ul style="list-style-type: none"> ○ Mechanical – condenser water take offs in each tenancy and a total of two dedicated retail kitchen exhaust systems rated at 3,000l/s each. ○ Electrical – 3 phase power for tenant DB board connection of maximum 100Amps ○ Lighting – emergency lighting, remainder by tenant (emergency lighting not required unless tenancy exceeds 100m2) ○ Communications –termination box for tenant connection ○ Fire –sprinkler provisions for essential services. No droppers provided. ○ Hydraulic – cold water connection with drainage - with services recess in slab for drainage turn-ups ○ Gas and grease arrestor – supplied to two off tenancies only for food outlets • Aluminium framed shop fronts maximum 3000mm high inclusive of one pair of manual pivot doors to each tenancy shall be provided. • Signage zones for each retail outlet shall be developed by the architect with the owner in the design development, with the signage to be provided by the tenant. 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
3.0	FINISHES			
3.1	Main Foyer and Lift Lobby			
	<p>The foyer finishes will be selected to create a warm and inviting atmosphere. High quality finishes will be used throughout with floors being of stone or polished concrete with a slip resistance in accordance with the Australian Standards. Walls finishes will comprise of a mixture of colourback glass, metal cladding, timber veneer panelling and painted plasterboard. Columns will be of high quality off-form concrete. Ceilings will predominantly comprise of highly finished painted plasterboard.</p> <p>Specialist architectural lighting will be used to enhance the ambience of the space.</p> <p>Full height architectural glass walls will enclose the ground plane area.</p>			
3.2	Lobby Furniture			
	Provision of lobby furniture is excluded from the Base Building scope.			Excluded from Base Building Scope. To be provided by the tenant.
3.3	Typical Floor Lift Lobby Areas			
	<p>Finishes shall include the following</p> <p>Floors Greenstar compliant dual bonded on underlay carpet tile is to be provided to the base building. Total VOC limit of selected carpet is to be 0.5mg/m2/hour.</p> <p> Carpet to be extra heavy duty 28oz 100% Solution Dyed nylon carpet.</p> <p> Carpet to be equal to: Godfrey Hirst Straton SDN - Michigan or Seattle</p>			

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	<p>Interface Antron Lumina - Singles Ontera SDN 6.6 – Ultra or approved equivalent</p> <p>Core walls Lift lobby walls will be finished in painted plasterboard, and set approx 50mm off the base wall structure to allow for the tenant power and data reticulation.</p> <p>Core Doors Flat plate aluminum skirting in selected colour/anodized finish All core doors shall be 2400 mm high hinged solid core doors fitted with door closers and fire rated where required by code. Door finishes shall be - Painted solid core doors to service risers and toilets. Painted fire rated doors and frames as required by code to fire stairs and egress corridors.</p> <p>Lift Doors Linished stainless steel finish to lift frames and doors with doors min 2100mm height with 1200mm opening</p> <p>Ceilings A partial set plasterboard ceiling with access panels as required to be developed in the design development stage of the proposed works. Ceiling height typically at 2700mm above structure.</p>			
<p>3.4</p>	<p>Typical Office Areas</p>			
	<p>Finishes shall include the following –</p> <p>Floors Greenstar compliant dual bonded on underlay carpet tile is to be provided to the base building. Total VOC limit of selected carpet is to be 0.5mg/m2/hour. Carpet to be extra heavy duty 28oz 100% Solution Dyed nylon carpet. Carpet to be equal to: Godfrey Hirst Straton SDN - Michigan or Seattle Interface Antron Lumina - Singles Ontera SDN 6.6 – Ultra or approved equivalent</p>			

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Ceilings	Equal to mineral fibre acoustic tiles in an exposed two-way metal grid. 1500mm planning module to comprise of four 1500x375mm tiles or 3x1500x500mm tiles.		
Columns	Circular exposed off form concrete, class 2/3 finish (benchmark of The Bond)		
Skirting	150mm aluminium skirting		
Blinds	Blinds are not required to maintain design conditions within the building. An integrated blind pelmet and manually operated perimeter blinds to office areas shall be provided.		
Sills Spandrel	Sill cap finish to be determined in design development. The spandrel will be finished in laminated board (not MDF), aluminium extrusion or similar. An anodised aluminium skirting will form the base of all perimeter spandrels.		
Core walls	Core walls will be finished in painted plasterboard, and set approx 50mm off the base wall structure to allow for the tenant power and data reticulation. Flat plate aluminum skirting in selected colour/anodized finish		

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3.5	Toilet Areas/Showers			
	<p>Finishes shall include the following –</p> <p>Floors Vitrified unpolished non-slip ceramic tiles, laid in a square grid format. Matching ceramic skirting tile, laid in a square grid format.</p> <p>Walls Airlock areas - paint finished plasterboard lining on hat sections fixed to the structure. Toilet walls toilet generally painted plasterboard finish with areas of full height ceramic tiles to future size and detail.</p> <p>Ceilings Suspended set plasterboard ceiling with access panels as required for services management. Ceiling height typically 2400mm.</p> <p>Doors Airlock - Paint finish solid core in a selected colour.</p> <p>Vanity / Basins The quantity of vanity units provided to the building are to BCA requirements. A high level stone vanity shelf approximately 350mm wide will be provided above the basins. The basins will be wall mounted vitreous china hand basins. A full length mirror will be provided above the shelf together with one double GPO outlet to each bank of basins.</p> <p>Toilet Pans The quantity of toilet fittings provided to the building are to BCA requirements. Toilet pans are to be wall-flush floor-mounted vitreous china complete with integrated toilet seats with concealed dual flush cisterns, or approved alternative The pan flush will be designed to operate on a low water usage rate, providing a saving in water consumption.</p> <p>Urinals The quantity of urinals provided to the building are to BCA requirements. Urinals are to be waterless wall mounted vitreous china units. .</p> <p>Taps /Mixers A high quality mixer / aerator will be provided to each hand basin. The mixer</p>			

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	<p>will be polished chrome with pressure compensating aerators in spray pattern. Tapware shall be WELS 5 star rated.</p> <p>Cleaners tap to be provided on each level within toilet areas</p>		
Towel Dispensers	<p>Each typical office toilet area will have two stainless steel built-in paper towel dispensers with combined waste paper basket. The depth of the waste paper basket will be sized to avoid paper clogging</p>		
Soap Dispensers	<p>Surface mounted stainless steel commercial quality soap dispensers shall be provided to each toilet block and mounted above the basins.</p>		
Sanitary Napkin Disposal	<p>Space for chemical sanitary napkin disposal units will be provided in all female and unisex disable toilets. Units will be provided by the building operator/manager.</p>		
Partitions	<p>Partitions are to be 32mm proprietary toilet partition nominally 1800mm high with a 650mm wide door panel and hung from the ceiling and secured at the floor. All exposed surfaces are to be finished in selected plastic laminate on high-grade water-resistant board.</p> <p>Each male and female toilet will include a single larger sized ambulant cubicle.</p>		
Hardware	<p>Cubicle doors to have a locking indicator bolt, closed hinges, door bumper, strike and combined coat hook door stop.</p> <p>Outer toilet doors have a set of stainless steel push plates/pull handles accompanied by appropriate symbolised signage indicating male / female / disabled.</p> <p>The ambulatory cubicle doors have a locking indicator bolt and self closing hinges.</p> <p>No provision has been made for electric hand driers. – electrical provisions for future tenant installation</p>		

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	<p>BLL will not be providing sanitary napkin disposal units or automatic air fresheners, to be provided by the building management on occupation.</p> <p>Full length mirror, nominally 600mm wide, to be provided to each of male and female toilet areas in location to be determined.</p>			
3.6	Fire Stairs and landings			
	<p>Finishes shall include the following –</p> <p>Floors Steel troweled non-slip concrete over 'stairmaster' or similar steel stair system. Provide undercut to risers and slip resistant bars to treads and landings. Structural steel of stair to comply to BCA requirements</p> <p>Walls/ Ceiling/ Soffits A textured paint finish is to be provided to walls.</p> <p>A painted finish is to be provided to stair soffits and stringers.</p> <p>Doors Fire rated, steel frame, paint finish</p> <p>Balustrade Balustrades shall comprise of galvanised steel pipe with vertical railings at maximum 125mm centres to ensure code compliance for balustrades is met. The balustrades shall be painted throughout.</p>			

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3.7	Paint			
	<ul style="list-style-type: none"> ▪ All paints and undercoats for the project will be Dulux Australia or Wattyl, selected to suit their interior or exterior location and to achieve the targeted Greenstar credits relating to paint selection. ▪ As a minimum all painted surfaces shall be provided with a sealer coat and two top coats of acrylic paint. ▪ All paints to be low VOC, <0.5% VOC level 			
3.8	Loading Dock/ Carpark/ Storerooms			
	<p>Floors</p> <p>A floor sealer, such as Rokite or similar, will be applied over the finished concrete slab to avoid the infiltration of oil, grease and the like. Sufficient floor drainage shall be available to prevent water pooling or becoming slippery and dangerous. Finish shall not cause cars tyres to squeal. Finishes shall be:</p> <ul style="list-style-type: none"> • Broom finish to concrete floors and vehicular ramps with non-squeal oil and slip resistant additive. • Grooved finish to concrete vehicular ramps. • Galvanised steel column/wall guards. • Galvanised steel bollards as required. <p>Walls / Columns</p> <p>Carpark and loading dock walls and columns will be painted between the carpark soffit down to approx 1600mm above FFL in two-tone acrylic paint finish.</p> <p>Painted heavy-duty solid core doors in metal frames provide through out.</p> <p>Painted fire rated doors and frames as required by code to fire stairs and</p>			

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	<p>egress corridors.</p> <p>Slab soffit Class 3 Off-form concrete unpainted with surface mounted fittings</p> <p>Insulation Provide rigid foam insulation to underside of all ground level habitable areas (ie to building footprint only as required)</p> <p>Line Marking Lane separation lines, directional arrows, tenants reserve space sign and kerb line are to be clearly defined using durable, non slip, line marking material. Directional arrows are to be oversized for greater visibility.</p> <p>Identification Numbers Car spaces will be individually numbered and identified on the slab at the front of the car space</p>			
3.9	Doors			
	<ul style="list-style-type: none"> • General base building core doors including toilet entry and/or vestibule areas – nominally 820mm leaf with 800mm clear opening – painted solid core doors. • Plant room, substation, switchrooms and fire stair doors - nominally 820mm leaf with 800mm clear opening, with 2 hour fire rated, steel frame, solid core in a selected paint finish as required • Door hardware to be of a selected commercial quality proprietary range. To be selected in the design development stage of the works. • Doors to electrical and communications risers, rooms switch room and substation are to be outward opening and smoke sealed. • Provide smoke seals to electrical/comms room doors and acoustic seals to hydraulic riser doors 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
4.0	STRUCTURE			
4.1	<p>Generally</p> <p>Office floors will minimise the extent of columns and interface with the agreed 1500mm planning module/grid. The structural elements of the building will be designed to provide adequate performance for a minimum design life of 50 years.</p> <p>The structural design shall take into consideration the possible changing building uses and the local environmental conditions during the design life. Material selections and specifications and detailing of the structural elements shall be such as to provide optimum structure durability.</p> <p>Provision will be made in the structural design for penetrations of the office slab in designated areas. Penetrations to include but not limited to inter-connecting stairs, kitchen exhaust, trade waste, soil, water riser space.</p>			
4.2	Foundations			
	<p>Design parameters shall be determined and evaluated by a Registered Professional Geotechnical Engineer by sufficient insitu testing. All geotechnical site investigations, testing procedures and design details shall confirm to AS1726 – Site Investigations Code.</p> <p>Foundation designs prepared by the structural engineer shall incorporate all geotechnical design values as recommended by the Geotechnical Engineer.</p> <p>Due consideration shall be given to:</p> <ul style="list-style-type: none"> • Allowable bearing pressures • Soil and rock stiffness values • Earth pressures on temporary and permanent retaining systems 			

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	<ul style="list-style-type: none"> • Ground water • Rock relief pressures and movements • Effects on adjacent and surrounding building sites and environs due to change within the ground conditions resulting from the proposed development • Effects on existing in-ground services adjacent to the site • Transmission of seismic forces to building 			
4.3	Structural Design Parameters			
4.3.1	Building Loads			
	<p>All building gravity loads, superimposed dead loads and live loads shall be carried by the structure with adequate factors of safety in accordance with AS1170 Part 1: Dead and live loads and load combinations.</p> <p>The following superimposed loads need to be included:</p> <ul style="list-style-type: none"> • Partitions • Floor finishes and toppings • Services • Ceiling • Compactus • Plant and Equipment <p>Note that the main influences on the structural design of the typical floors will be spans, floor to floor height, space, floor area and the configuration of services.</p>			

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4.3.2	<p>Live Loads</p>			
	<p>The following minimum loads shall be adopted without reduction:</p> <ul style="list-style-type: none"> • Car parking 2.5k Pa • Truck loading docks 10.0kPa • Office floors 3.0 k Pa (excluding partitions, services and ceilings) • Partitions 1.0kPa • Services and ceilings 0.3kPa • Compactus areas up to 7.5 kPa subject to certifying structural engineer approval. Recommended compactus areas are nominated on the structural floor plans to a maximum of 5% of the floor area. Please refer to Appendix D for loading diagram. • External terrace areas 4.0kPa plus 2.5kPa for paving finishes. • Courtyard suspended slab <p>The structure above the loading dock access hatch will be designed to handle the necessary SWL to remove the largest component of plant from the plantroom below.</p> <p>Design load shall be designated on all structural floor plans.</p>			<p>Load TBC</p>
4.3.3	<p>Wind Loads</p>			
	<p>Design wind loads shall be based on AS1170 Part 2.</p> <p>The design wind velocity shall be based on a 50-year return period. Results of suitable wind tunnel testing may be incorporated where opportunities existing in providing efficiencies of structural form.</p> <p>The design of facade elements and their connections to the structure shall make provision for all local peak wind pressures effect.</p> <p>Wind vibrations need to be designed such that the harmonic wind movements of the building are not resonant with its own natural frequency.</p> <p>The building frame must be designed to resist wind pressure with sufficient stiffness to keep the</p>			

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	<p>vibration caused by the wind within limits that inspire the occupants with confidence in the strength of the structure.</p> <p>Projecting canopies and awnings, particularly at street level shall be designed to resist the wind forces caused by deflected pressure flows from the surrounding tall buildings.</p>			
4.3.4	Seismic Loads			
	<p>Seismic design requirements shall be in accordance with AS1170 Part 4.</p> <p>The earthquake loads on the structure shall be determined by applying the requirements of this Standard or by using reliable data and references in a manner compatible with the requirements of this standard together with information on local conditions.</p> <p>The building is to be rated as not being essential for post Earthquake recovery.</p>			
4.3.5	Lateral Loads			
	<p>Interior walls and permanent partitions and their fixings and supports, shall be designed to resist all loads to which they are subjected, but not less than a lateral force of 0.25 k Pa applied perpendicular to the walls.</p>			
4.4	Vibration Effects			
	<p>Vibration due to plant should not be structurally critical or unacceptable to occupants.</p> <p>Floors shall be designed to ensure that there are only slight perceptible vibrations under footfall effects, or from other internal or external sources.</p>			

4.5	Deflections			
	<p>The structural components shall be designed and constructed to contain any deflections under service loads within acceptable limits for:</p> <ul style="list-style-type: none"> • Structural integrity • Visual appearance • Avoidance of excessive floors slopes • Prevention of cracking in floors, walls and ceilings • Proper installation and operation of machinery • Traffic • Building occupants • Avoidance of roof ponding 			
4.6	Deflection Limits and Serviceability			
	<p>The following deflection limits shall apply unless more stringent deflection limits are required for special loading conditions:</p> <ul style="list-style-type: none"> • Beams and Slabs – irrespective of the materials or type of construction used, deflections shall not exceed the limits set down in Section 2.4 of AS3600. • In addition to the deflection requirements set out in the latest or equivalent version of AS 3600, all concrete components are to be designed such that: • Their incremental deflection does not exceed the lesser of span on 250 or 20mm; and • Their total deflection does not exceed the lesser of span on 250 or 25mm. 			

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4.7	Lateral Drift			
	<p>Serviceability levels shall be designed and constructed to the limit inter-storey lateral drift of the storey height such that the integrity of all connected building elements is maintained.</p> <p>In particular the effects of lateral drift needs to be included in the performance of the façade system.</p>			
4.8	Beams and Slabs Supporting Compactus			
	<p>The incremental long-term deflection under fully loaded compactus shall not exceed span on 500.</p>			
4.9	Temporary and Construction Loads			
	<p>The building structures shall be designed to resist all loads imposed during construction. In all instances, the building components in their temporary constructed state must remain structurally stable.</p>			
4.10	Handrails			
	<p>All handrails and balustrades shall be designed in accordance with AS1170 Part 1. Where applicable, the design shall include for the effects of crowd loading or impact.</p> <p>Under maximum load conditions these elements shall deform by following a plastic deformation mechanism.</p>			
4.11	Penetrations			
	<p>The design of the concrete structure shall, as far as practicable, avoid the need for post construction penetrations. All penetration that may be subsequently required shall be to the</p>			

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	approval of the Structural Engineer.			
4.12	Construction Tolerances			
	<p>Construction tolerances for structural components are to be as nominated in relevant design codes and as required for the finishes applied over those structural components.</p> <p>Surface levels to the typical floor finished concrete slabs will be required to not vary by more than +/-6mm over the length of a 3 m straight edge in accordance with the Guide to Concrete Construction as issued by Standards Australia.</p>			
4.13	Facade Design Parameters			
	<p>Factors to be considered in the design of the glass and facade system shall be:</p> <ul style="list-style-type: none"> • Façade and structure interaction • Wind effects and pressures • Impact caused by wind borne debris • Earthquake effects • Thermal effects • Human impact • Falling and propelled objects • Hail impact • Fire <p>The structural engineer must also consider the effects of extreme events on structure performance following a possible cladding failure.</p>			

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4.14	Structure Fire Rating			
	Structural components shall have a fire resistance level in accordance with current Statutory Authority Regulation.			
4.15	Construction Materials			
	Materials shall generally not be combustible or exacerbate the spread of fire.			
4.16	Dispensations			
	All relevant authorities shall approve any dispensations regarding fire-rating issues.			
4.17	Fire Engineering Approach			
	Where the principles of fire engineering are proposed that overall structural provisions and performance of the building shall be maintained.			
4.18	Column Core - Differential Displacement			
	<p>Differential displacement between the core and the columns shall be evaluated and limited to tolerances set by AS3600.</p> <p>Calculations shall allow for combinations for the following:</p> <ul style="list-style-type: none"> • Axial shortening • Concrete creep • Concrete shrinkage • Loading Differentials • Thermal differentials and temperature gradients 			

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4.19	Structural Certification			
	A Registered Professional Engineer shall provide structural engineering certification in accordance with relevant Authority requirements with NPER-3 registration.			
4.20	Specialist Consultants			
	<p>Where necessary, the structural engineer shall include the effects or advice provided by specialist consultants particularly relating to the following items:</p> <ul style="list-style-type: none"> • Geotechnical advice • Wind modeling • Dynamic performance • Seismic activity • Acoustic isolation • Facade performance • Concrete technology 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
5.0	FAÇADE			
5.1	Generally			
	<p>The façade at ground level will be designed to provide a high degree of visibility into the lobby and common areas. The typical floor facade system will be double glazed and designed to achieve stringent heat transmission and acoustic performance. The facade will be subject to design development in conjunction with the mechanical services to optimise:</p> <ul style="list-style-type: none"> • Solar performance • Acoustic performance • Day lighting penetration • Access to views including those to the ground plane landscaped areas. • Passive glare control • Natural colour rendition of outside environment • Ease of cleaning, maintenance and operating costs; • Use of performance glazing (IGU) and external sun shading to control solar heat loads and manage glare. • Control glare without compromising other objectives as described above. • Consider and reduce the impact of any privacy issues that may arise from the orientation of the building. • Meet design intent and architectural integrity; • Minimise capital investment. • BCA Part J compliance • Consider heritage of surrounding buildings 			

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A holistic approach is to be taken with the design of the envelope of the building with all of the above being taken into consideration.

The facade system shall–

- Generally comprise a curtain wall / window wall system. The façade system is to be confirmed within the design development stage of the works with the stakeholder team.
- The façade design shall discourage unauthorized persons climbing onto the building
- The design shall discourage graffiti
- Be constructed from factory assembly prefabricated panels and metal frame system (IGU).
- All vision glazing shall be insulated glass units (IGU's) and typically comprise of 6mm inner glass sheet, a min 12mm air gap and an outer face of 6mm heat strengthened glass, or as required in order to comply with section 7.2.
- Provide thermal comfort transmission (U Value) to minimize heat loss through vision areas and insulation between spandrel panels
- Vision glass panel glazing is anticipated to be a neutral colour grey tint and shall be confirmed in the design development stage for the project.
- As a minimum the following performance criteria is anticipated, to be confirmed with the design development of the project, ensuring compliance with the BCA Part J.

Shading Co-Efficient Approx 0.30

U-Value Approx 2.0

Total weighted U Value: Approx 2.5 to 2.8 maximum

Visible light transmission (VLT) - Vision Panels Approx 43%

Visible light transmission (VLT) - Atrium Glazing 50% to 70% max

- Glazing to be selected to minimize natural colour distortion when viewed from the internal floor plate

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	<ul style="list-style-type: none"> External glazing is to be provided to conform with AS1288. The curtain wall shall comprise of extruded aluminium framing with anodised finish. The façade shall meet BCA Section J requirements. Alternate performance based solutions may be considered. High performance insulating glass will be utilised providing a good balance of daylight access and solar control. Façade and ceiling edge junction is to allow for pelmet fixing of perimeter blinds Cleaning and absailer davit fixing details are to be confirmed with the detailed design Façade windows shall be approximately 2000mm tall above the sill to optimize natural light. All work shall be undertaken in accordance with the Australian Standards Any exterior terrace areas will include balustrading at a height above finished exterior floor level to meet BCA requirements (office use). The final height and detail will be subject to design development and final authority and BCA requirements. 			
<p>5.2</p>	<p>Atrium glazing</p>			
	<p>Atrium glazing to be comprised of panelized fully framed system with architectural steel support frame.</p> <p>Atrium glazing to have a shading coefficient of approx 0.30; U-value approx 2.0 and visible light transmission between 50% and 70%.</p> <p>Facade system to integrate with the structural glazing as required – to be determined by the final atrium height.</p> <p>Operable louvres may be required to provide make up air for the smoke extraction of the atrium.</p> <p>No blinds or fixed sunshading elements shall be provided within the atrium.</p> <p>The atrium glass roof will allow light to penetrate deep into the floor plates of the building and</p>			

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	<p>illuminate the atrium base for the most part of the day thereby reducing the dependence on artificial lighting and providing a thermal buffer space for the office areas.</p> <p>Excessive glare shall be minimised, without diminishing the benefits of providing natural light to the building, or negatively impacting on the ambient lighting levels on the ground plane. Hence some direct light will penetrate into each floor at various times of the day which will change throughout the season.</p> <p>To achieve the best result, a collaborative approach to the design is recommended. Daylight modelling shall be conducted and provided to the tenant for review, during the design development phase of the building façade, atrium and skylight. Factors to be considered and balanced when optimising the design are</p> <ul style="list-style-type: none"> • Excessive glare to floor plates adjacent the atrium • Optimisation of daylight penetration into all floor plates and base of the atrium • Controlling heat and energy impacts at the upper levels of the atrium • Optimise views and outlook • Ongoing operation surety 			
<p>5.3</p>	<p>External Steelwork</p>			
	<p>External steelwork to be painted with protective paint in a selected colour. Paint warranty to be minimum 10 years.</p>			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
6.0	EXTERNAL WORKS			
6.1	Generally			
	<p>External works are limited to the boundary line of the site as follows –</p> <ul style="list-style-type: none"> • Provide well lit external areas with vandal resistant lighting and non slip paving to comply with the relevant codes and standards • Avoid drainage grates, steps etc in the middle of the paths • Any public area provisions within the site and or adjacent areas are to be confirmed to ISPT for review 			
6.2	Civil Works			
	<p>The civil works for the project generally comprise the following elements:</p> <ul style="list-style-type: none"> • Environmental controls during construction – erosion, sedimentation & contamination controls for site & surrounding areas • Site clearing and bulk earthworks • Detail excavation – batters, footings, beams, in-ground service reticulation • Compaction as required • Sub base and asphalt to asphalt paving • Installation of retaining walls, kerbs & gutters • Backfilling to retaining walls & kerbs • All in ground stormwater & subsoil drainage including pits, lids, grates, orifice plates 			

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	<ul style="list-style-type: none"> • Identification/relocation & protection of existing services to the satisfaction of relevant authorities 			
6.3	Vehicular Accessible Areas			
	<ul style="list-style-type: none"> • Bitumen pavement to be provided to all parking and carpark entry/ exit areas in accordance with Australian Standard. • Bollards to be provided in all required carpark areas as per code • Painted cement rendered retaining walls under the building to selected colour. • Waterproofing and subsoil drainage included. • All subsurface drainage including pits, trenches, grates and associated hydraulic connections provided 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
7.0	LANDSCAPE ARCHITECTURAL			
7.1	Landscape Areas Generally			
	<p>Landscaping for the 4 National Circuit project will be designed to achieve the following aspirational and qualitative objectives:</p> <ul style="list-style-type: none"> • A strong landscape identity and campus quality tying into the ISPT suite of buildings with the National Circuit address. • Clear relationships and connections between the ground floor retail, lobbies, meeting rooms and landscape spaces. • A unique landscape outlook for tenants. • Reinforce privacy of 2 National Circuit while creating secure, clearly defined landscape spaces. • A sequence of spaces and a layered landscape. • A clearly defined drop off area for 2 National Circuit and 4 National Circuit with short term parking. • Comfortable, inviting spaces for users and visitors to the buildings. • Seasonal interest within the landscape for all four seasons. • Protection from winds and enhanced microclimate, specifically within the central space. • Sustainable solutions in terms of material choices, water use, plant selection and sun protection. 			

7.2	Function			
	<p>Landscaping for the 4 National Circuit project will be designed to achieve the following functional and quantitative objectives:</p> <p>The landscape areas, inclusive of Building Forecourt, Perimeter Landscape, Gardens, Courtyards and Central Space is as follows:</p> <p>Building Forecourt:</p> <ul style="list-style-type: none"> • Drop off and short-term parking to the main entrance of 4 National Circuit, also servicing the main entrance of 2 National Circuit. • Pedestrian access to 4 National and 2 National main entrances. • Pedestrian access from the street to the central space via the gardens. • Bicycle parking to contribute to a total of 40 undercover parks, within the landscape areas. • Underground carpark entrance and exit. <p>Perimeter Landscape:</p> <ul style="list-style-type: none"> • Pedestrian Easement between National Circuit and Macquarie Street. • Loading entrance to 4 National Circuit, from Macquarie Street. • Pedestrian access to 4 National Circuit Central Space from Macquarie Street. • Secure delivery drive to 2 National Circuit, from Macquarie Street. <p>Gardens:</p> <ul style="list-style-type: none"> • Pedestrian access from National Circuit and Macquarie Street to 2 National Entrance and 4 National Central Space. • Courtyards: Narrow outdoor spaces adjacent both buildings of 4 National Circuit, with access via sliding doors. Separated from the rest of the landscape areas by walls, with varying degrees of visual access. 			

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	<p>Central Space:</p> <ul style="list-style-type: none"> • Focal public open space of 4 National Circuit, servicing the greater ISPT campus. • Access from the Gardens, the building lobbies and the Perimeter Landscape pedestrian easement. • Access via lifts and stairs from the carpark. • Provision for cafe spill-out. • Important visual amenity from both 4 National Circuit building atriums. 			
7.3	Character			
	<p>Each of the landscape areas shall have a distinct character, within a unified whole, as follows –</p> <ul style="list-style-type: none"> • Building Forecourt: Formal, ordered appearance with clear understanding of circulation. Contemporary design aesthetic with human scale and robust, appropriate materials. • Perimeter Landscape: Continuation of the broader ISPT campus identity while sympathetic to the established street and pedestrian easement character. • Gardens: Distinctly different to the Building Forecourt and the Perimeter Landscape, providing a sense of intrigue, drawing the visitor to the Central Space. Beautiful and welcoming with the greatest diversity in plant material. • Building Courtyards: Contemplative spaces to be looked out into. Seasonal variation to provide interest. • Central Space: Clean, ordered and sculptural, with elegant, simple detailing, facilitating social interaction within the space. 			
7.4	Planting			
	<p>The planting of the landscape areas shall be –</p> <ul style="list-style-type: none"> • Groundcovers: Species well suited to Canberra that grow with a low habit. Minimum planting pot size of: 150mm • Shrubs: Species well suited to Canberra with a variety of forms and textures, 			

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	<p>height range from 500mm to 3000mm. Taller species can be used as hedges and screens. Minimum planting pot size of: 5ltr</p> <ul style="list-style-type: none"> • Trees: Species well suited to Canberra with a defined trunk and with various habits. Height range from 2000mm and greater. Minimum planting pot size of: 100ltr • Soil: To Australian Standard AS 4419 Soils for Landscaping and Garden Use. • Mulch: Minimum depth of 75mm. • Planting on podium: NCA standards apply. Minimum depth of tree planters 1200mm. 			
7.5	Paving			
	<p>The paving of the landscape areas shall be –</p> <ul style="list-style-type: none"> • Designed to Australian Standard AS 1428 Design for Access and Mobility and to AS 2890 Parking Facilities • Of minimum thickness 40mm where pedestrian traffic only shall occur and 60mm for vehicular traffic. • High quality concrete paver. Stone may be considered to selected areas. 			
7.6	Walls			
	<p>The walls within the landscape areas shall be –</p> <ul style="list-style-type: none"> • Constructed of material sympathetic to the materials used in the building. • Designed to enhance microclimate, vista, sense of enclosure and privacy. 			
7.7	Furniture			
	<p>The furniture of the landscape areas shall be –</p> <ul style="list-style-type: none"> • Designed to fit within the general landscape design of the 4 National Circuit landscape, in form, style and material. • Bicycle parking hoops to a minimum spacing of 800mm. 			

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7.8	Lighting			
	<p>The lighting of the landscape areas shall –</p> <ul style="list-style-type: none"> • Enhance the qualities of the landscape for night-time enjoyment. • Assist in way-finding throughout the landscape at night. • Enhance security measures around the buildings and in the landscape areas. • Meet Australian Standard AS 4282 Control of the Obtrusive Effects of Outdoor Lighting. • Not exceed Australian Standard AS 1158 Road & Public Space Lighting. • Be designed so that no light is directed at the sky. 			
7.9	Existing Trees			
	<p>Existing trees identified to be retained within the landscape areas shall be –</p> <ul style="list-style-type: none"> • Protected to Australian Standard AS 4970 Protection of Trees on Development Sites. 			
7.10	Artwork			
	No provision has been made for artwork within the landscape areas.			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
	PART B _ BUILDING SERVICES			
8.0	MECHANICAL SERVICES			
8.1	General			
	<p>The building air conditioning and mechanical ventilation system will include air conditioning, ventilation, smoke control and BMCS and incorporate:</p> <ul style="list-style-type: none"> a) Compliance with the Building Code of Australia, AS 1668, AS3666 and all relevant Australian Standards. b) Minimise maintenance costs; c) Proven design; d) Reliability; and durability; e) Ecologically Sustainable Development (ESD) principles. f) Access for maintenance of all central plant and floor air handlers via lessee areas will be avoided where possible; g) Energy Management system using the BMS and/or a standalone Energy Management System with High Level Interface to BMS. h) Variable speed drives on fan and pump motors for saving energy; i) 100% outside air cycles with complete damper shut off to save energy and reduce time for room temperature stabilisation during morning start-up; j) Primary heating provided by hot water coils within the air handling units and duct mounted hot water heating coils and/or electric heaters on floors. 			

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	<p>k) Carpark ventilation systems to incorporate carbon monoxide monitoring to control variable speed fans to minimise fan energy during periods of low use.</p> <p>l) Measures as required to achieve required NABERS and Greenstar outcomes in accordance with the ESD performance requirements nominated within this Document.</p> <p>m) Retail and basements shall be ventilated to minimise unpleasant odours</p>												
8.2	Design Conditions												
	Provide the following local design conditions, proposed as per the AIRAH design guidelines for comfort conditions of Canberra.												
	<table border="1"> <thead> <tr> <th><u>All Conditioned Areas</u></th> <th><u>Indoor Conditions</u></th> <th><u>Ambient Design Conditions</u></th> </tr> </thead> <tbody> <tr> <td>Summer</td> <td>22.5°C ± 1.5°C</td> <td>34.6°C DB 19.7°C WB</td> </tr> <tr> <td>Winter</td> <td>22.5°C ± 1.5°C</td> <td>- 2.2°C DB ; 80%RH</td> </tr> </tbody> </table>	<u>All Conditioned Areas</u>	<u>Indoor Conditions</u>	<u>Ambient Design Conditions</u>	Summer	22.5°C ± 1.5°C	34.6°C DB 19.7°C WB	Winter	22.5°C ± 1.5°C	- 2.2°C DB ; 80%RH			
<u>All Conditioned Areas</u>	<u>Indoor Conditions</u>	<u>Ambient Design Conditions</u>											
Summer	22.5°C ± 1.5°C	34.6°C DB 19.7°C WB											
Winter	22.5°C ± 1.5°C	- 2.2°C DB ; 80%RH											
	<ul style="list-style-type: none"> Relative humidity generally in the range 40-60% but noting that no humidity controls are included as part of the base building. Upper limit on humidity of 60% is controlled by virtue of cooling coil performance only, no humidification is being provided for periods of low relative humidity. Deadband conditions of +/- 1.5oC drybulb at the point of control. Lobby and floor of atrium 23 oC +/- 2oC Humidity control not provided 												
8.3	Comfort Criteria												
	Thermal comfort conditions shall comply with the ASHRAE standard 55-2004 (supersedes 1992). The air distribution system design shall maintain a minimum Air Diffusion Performance Index (ASHRAE ADPI) of 80% at full and part load operation.												
8.4	Acoustic Criteria												
	General office areas not to exceed NR 40												

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8.5	Filtration			
	<ul style="list-style-type: none"> • The major air handling plant supplying conditioned air shall be provided with pre-filters & high efficiency deep bag final filters and adhere to AS1668 and AS1324. • Other ventilation systems shall be provided with panel filters except car park supply. • Air filter gauge monitored by BMS shall be provided on each filter bank for all filters that handle over 1,000 l/s. 			
8.6	Population density			
	<p>Population allowances are:</p> <ul style="list-style-type: none"> • Normal Office Areas – One person per 10 sqm/NLA • In accordance with AS1668.2 where not specified 			
8.7	Lighting Load			
	<p><u>Office lighting loads</u></p> <ul style="list-style-type: none"> • Maximum of 8 W/sqm (optimized with the final lighting solution) with additional 3w/sqm tenancy load. <p><u>Commercial Entry Lobby</u></p> <ul style="list-style-type: none"> • 20 W/sqm 			
8.8	Equipment Load			
	<ul style="list-style-type: none"> • 15 W/sqm for tenancy power <p><u>Commercial Entry Lobby</u></p> <ul style="list-style-type: none"> • 5 W/sqm 			
8.9	Outside Air			
	<ul style="list-style-type: none"> • Blanked-off make-up air provisions will be provided in the ground floor façade at high level for future connection by retail tenant. No other provision is made as part of this submission for 			

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	<p>outside air to the retail tenancies on the Ground Floor,</p> <p>The minimum outside air provisions to offices shall not be less than 10 l/s/person based on high efficiency air filtration and population density or as required to achieve the nominated NABERs / Green Star Rating.</p>			
8.10	Infiltration			
	The base building design makes allowance to offset the effects of infiltration through positive building pressurisation.			
8.11	Hours of operation			
	<p>Normal office hours (8.00am to 6.00pm – to be agreed with the building owner) with</p> <p>tenants call facility for after hours air conditioning via on floor button and or phone line interface to the Building Monitoring and Control System.</p> <p>b) 24 hours availability of all plant.</p> <p>c) After hours air-conditioning on a per floor basis with a minimum of 2 zones per floor.</p>			
8.12	Air Conditioning systems			
	<p><u>Cooling plant</u></p> <ul style="list-style-type: none"> • Central Variable Air Volume (VAV) handling plant located in the roof plantroom, with economy cycle. • Each VAV will be linked to and controlled by the BMCS • Control tolerance shall be +_1.5degC • Separate face zoned Air Handling Unit (AHU) to serve the perimeter zones and dedicated separate AHU's to serve the centre zones. • Lobby levels to be generally served from central AHU plant. • Air to be supplied to the spaces via insulated ductwork and ceiling mounted air diffusion equipment. • For typical floors, return air is via the slotted light fittings, return air grilles and/or ceiling 			

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<p>openings as required and via ceiling plenums</p> <ul style="list-style-type: none"> • The cooling towers and chillers will be sized to cater for 100% of the building load separate from the tenant load with a redundancy in the order of 60% • Tenant condenser water redundancy shall be 100% • Chiller efficiencies to be based on NPLV to ARI standards. • Cooling towers selected for 21degC design WB temperature. • The chiller plant shall be water cooled with heat rejection to an appropriately matched condenser water system comprising of condenser water pumps, cooling towers and reticulation pipework. • VSD controls provided with factory fitted cooling devices • EU4 rated deep bag filters shall be provided <p><u>Heating plant</u></p> <ul style="list-style-type: none"> • Space Heating shall be via heating water from the buildings boiler plant delivered to the hot water coils in the air handling units. • Heating hot water shall be provided by 2 gas fired boilers rated at 50% of the expected peak heating load. • Waste heat from the Cogeneration installation will be utilised to replace and/or supplement the heating provided by the gas fired boilers. Plate heat exchangers will be used to connect the two systems together. • Trim reheating to the perimeter zones shall be provided where required by electric resistance heaters and/or heating water coils provided with each VAV box. • The lobby and atrium floor design shall allow for drifting in design conditions as a transition space. <p><u>On Floor Air distribution system</u></p> <ul style="list-style-type: none"> • Perimeter zones of the floor shall be 85sqm at a depth of 4.0m as per PCA A Grade • Turn down at perimeter zone to be 40% 			
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	<ul style="list-style-type: none">• Perimeter supply air quantity - 2.5l/s min and 12l/s max• Internal zones shall be 120sqm per zone• Internal supply air quantity - 1.2l/s min and 3-4l/s max• Minimum of 2 zones per floor, tenant <p>Duct sizes to be reviewed with ISPT representatives prior to finalization</p>			
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8.13	Supplementary Outside Air			
	<ul style="list-style-type: none"> • Tempered supplementary outside air shall be provided in the order of 0.3l/s per sqm with branch ducts on each floor sized at 0.75L/s per sqm. • A branch duct will be installed at each floor terminating in clear ceiling space for future connection. • Ducts will be terminated with motorized OBD with BMS interface and cap. • VSD will be provided to the fan. The fan will be capable of delivering the specified air quantity with extra 100 Pa pressure drop beyond cap. 			
8.14	Supplementary Condenser Water System - Closed Loop			
	<ul style="list-style-type: none"> • A supplementary tenant condenser water system is provided and sized at an average capacity of 21W/m² NLA Total Heat Rejection (15W/m² Refrigeration Capacity) for every Office level. • Isolation valve take-offs will be provided at each level sized to a maximum flow capacity of 53W/m² Total Heat Rejection from any one level. 			
8.15	General Exhaust System for Tenant Use			
	<ul style="list-style-type: none"> • Supplementary exhaust shall be provided in the order of 0.2l/s/sqm with branch ducts on each floor sized at 0.5L/s per sqm. • Ducts will be terminated with motorized OBD with BMS interface and cap for future use and marked "General Exhaust". • VSD will be provided to the fan. The fan will be capable of delivering the specified air quantity with an extra 100 Pa pressure drop beyond cap. 			
8.16	Mechanical Control systems / BMCS			
	<ul style="list-style-type: none"> • The controls shall monitor energy consumption and maximize the operation efficiency of the system. • After hours air conditioning to be on a per floor basis with dial up start facility and hours run logging via the B.M.C.S. An interim after hour's push button, or other agreed interface, is to be provided on each floor, for each zone – total 2. • The BMCS is to be expandable and have dial in and dial out capability for future off-site 			

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	<p>monitoring if required.</p> <ul style="list-style-type: none"> • The BMCS provides time control function including house and tenant lighting controls • The BMCS will be capable of monitoring alarms for the security, lift control system, hydraulic services, electrical services and fire alarm panels. • The system shall provide Bacnet protocols or equal • Temperature adjustments shall be via the BMCS • Mechanical services control shall be fully integrated into the BMCS. • The BMCS shall provide all time control functions including house lighting control. • The system shall also monitor general alarms for Fire, Hydraulic, Electrical, Lifts and other services. • A low level interface for critical fire and security alarms shall be provided (up to 25 points provided). • Trend logging and facility for after hours A/C control by on floor key switches shall be provided. 			
<p>8.17</p>	<p>Mechanical Ventilation systems</p>			
	<ul style="list-style-type: none"> • Toilet ventilation is to be provided by a common toilet exhaust system with roof mounted fans with an exhaust rate of 10l/s per sqm for amenity areas • Toilet exhaust is provided to a maximum average of 200l/s per floor for tenancy fitout needs of the toilet exhaust system – allowing for approximately 4-6 supplementary fittings per floor • The Switchroom, Substation, MDF & Pump rooms are each to be provided with a ventilation system. • All natural and mechanical ventilation systems required by relevant authorities will be provided. • The systems to be provided may include those listed below, however the list of systems is not necessarily limited to these areas: <ul style="list-style-type: none"> Toilet amenities Car park and loading dock Fire stairs 			

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	<p>Smoke exhaust</p> <p>Garbage collection / disposal area</p> <p>Plant rooms</p> <p>Fire control centre</p>			
8.18	Smoke Exhaust			
	<ul style="list-style-type: none"> Generally the building shall be provided with a smoke exhaust pressurization system that meets BCA and 1668.1 requirements or alternate solutions in accordance with a fire engineered approach. 			
8.19	Kitchen Exhaust			
	<p>Retail</p> <ul style="list-style-type: none"> The supply and installation of kitchen exhaust fan, including control and power supply, riser ductwork, and ductwork to the tenancy boundary will be provided as a central system as part of base building. Kitchen exhaust hoods and interconnecting ductwork to the kitchen exhaust connection at the tenancy boundary is to be by the tenant as part of the tenancy fitout works. <p>General</p> <p>Two kitchen exhaust system has been provided to serve the office building (one for each building), rated to a maximum of 3500l/s for one floor of each building rise.</p>			
8.20	Retail			
	<ul style="list-style-type: none"> The proposed retail tenancy will be supplied with supplementary tenant condenser water system take offs to a heat rejection capacity of 280W/sqm (200 W/sqm refrigeration load). The tenant is to allow for the design, supply and installation of the associated package unit as required. All retail outlets shall be provided with condenser water take off points for tenant connection Mechanical services provisions to the retail space shall be within a shell and core design, with no in ceiling services, ductwork and or diffusers provided. All air-conditioning to the retail space shall be by the retail tenant/s Kitchen exhaust is provided by base building risers to roof mounted central Kitchen Exhaust fans Ductwork shall be run to the adjacent retail: 2 food tenancies (including ground floor cafe) 			

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	<p>@3000 L/s each tenancy for the West building and 1 food tenancy (including any ground floor cafe) @3000L/s for the East building). The system shall be complete with fan to the roof plantroom wired to the base building meter boards.</p> <ul style="list-style-type: none"> • Tenants shall provide hoods and ductwork to the riser as part of the fitout works. 			
8.21	Testing & Commissioning			
	<ul style="list-style-type: none"> • Testing & commissioning will be carried out in accordance with CIBSE and ASHRAE requirements • Before commencing commissioning and testing, the following will be carried out – • Pressure and leak test all riser ductwork and pipework – remediate leaks • Provide manufacturer’s test certificates for all proprietary equipment • Check all power and control wiring for correct operation of equipment • Run all air handling systems with temporary filters. Clean out all units, plenums and the like • Prepare a commissioning management plan and submit it to the Superintendent for approval. Balance air systems to -0% + 10 % of specified quantities. 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
9.0	ELECTRICAL SERVICES			
9.1	<p>General</p> <p>The building electrical services and systems are to be designed and installed in accordance with all relevant Australian Standards, codes and authorities requirements.</p> <p>The electrical services will include:</p> <ul style="list-style-type: none"> • Supply Authority substation. • Consumers Mains • Main Switchboards. • Submains. • Main Distribution Centres. • Distribution Boards. • General light and power subcircuit cabling. • Lighting Fittings. • Emergency and Exit Lighting Fittings. • Power connections to all electrically operated equipment. • Power for all data / comms • Energy metering (Supply Authority, NABERS and Greenstar). • Cogeneration plant • Standby Power Generation Plant 			

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	<ul style="list-style-type: none"> Lightning Protection System. Earthing. External floodlighting and power supply to external signs. <p>UPS support facilities to be provided by the tenant</p>			
9.2	Substation			
	<ul style="list-style-type: none"> Dedicated substation to supply the building provided and installed through a high voltage ring main feed, subject to confirmation by the Supply Authority . Substation capacity to be in the order of 110VA/m² NLA Substation chamber, provided as part of the works 			
9.3	Switchboards/Metering			
	<ul style="list-style-type: none"> A main switchboard shall be of form 4B minimum construction with busbars sized for ultimate transformer size, circuit breaker protection and with 30% spare space by way of spare circuit protection spaces with combined ampacity capacity of 30% of the switchboards nominated busbar rating The main switchboard is to provide distribution to house services, tenant services, essential services and air conditioning. Surge protection shall be provided at the main switchboard House services will be metered at the main switchboard. Individual tenants will also be metered in the main switchroom House services installation will achieve power factor of 0.9 minimum. The design will make provision for up to 3 authority tariff meters to be installed on tenant boards on each floor, ie floor to be subdivisible for up to 3 tenants per floor. All house metering including toilets, active lift lobby space, power and lighting and mechanical is designed to be metered by authority meters in the main switchboard. Non-essential safety services will be XLPE/PVC or PVC/PVC type Fire rated submains cables will be provided to all essential safety services 			

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	<ul style="list-style-type: none"> • Base building energy metering system shall be installed to allow NABERS energy monitoring and reporting. All connected loads over 100kVA are to be separately metered to meet Green Star initiatives. • Space provided to connect power factor correction in the future if required by the tenant. • Shop drawings of switchboard configuration shall be reviewed by ISPT • Plant room space for a future tenant generator system shall be provided, including riser space for fuel lines, cabling, exhaust and transfer switches. 			
9.4	General Power Provisions			
	<ul style="list-style-type: none"> • Tenancy submains are to be provided at the rate of 55 VA/m² NLA power capacity. • Lightning protection shall be provided as required in accordance with AS 1768 • Toilet areas shall be provided with a DGPO adjacent to vanity • All applications for power to be by the tenant for retail and tenancy spaces • RCD protection shall be provided to meet the requirements of AS/NZS 3000 for all GPO circuits, appliances and internal and external lighting circuits.. • EMI and RFI levels shall meet the requirements in the relevant Australian standards. • Power Quality Harmonics will be as stipulated by the supply authority and relevant Australian standards • Provisions being one board for every level and pole space at the rate of one pole per 15sqm of NLA. • General purpose DGPO's shall be provided to all base building equipment 			
9.5	Lighting			
	<ul style="list-style-type: none"> • General office lighting is to be high efficiency low brightness electronic fluorescent fittings giving an open area minimum average lighting level of 320 lux over 95% of the floor plate at 700mm affl. • Lift lobbies and core areas to be provided with an average of 120 lux. • Lighting switch zones to be grouped at no greater than 100sqm to meet Green Star requirements 			

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	<ul style="list-style-type: none"> • Lighting uniformity shall be in accordance with AS1680 • Entry area lift lobby and corridor lighting to be provided with feature energy efficient low maintenance lighting to compliment the architectural elements of the design • Toilet area lighting is to be energy efficient fluorescent fittings to AS1680 • Tenant carpark store room lighting and power shall be connected to the tenant switchboard. • Programmable lighting control system, controlled by the BMCS, may be provided to allow switch zoning and control to meet BCA and Green Star, including after hours control points in two locations on the core near to the lift lobby of each floor. • External lighting for vehicular areas is to comprise of low glare pole mounted light fittings in accordance with AS 1158, and for undercover areas, fluorescent fittings to AS1680. All external lighting shall be automatically controlled by photoelectric cell / time switch from lighting control system c/w override facilities at the local distribution board. • Carpark lighting lux levels to be an average of 40lux, with reduced levels over carpark bays and increased levels to carpark aisles. 			
<p>9.6</p>	<p>Emergency and Exit Lighting</p>			
	<ul style="list-style-type: none"> • The building emergency and exit luminaire system comprises single point units, installed in the core area and all non-tenancy areas, monitored via a central processor system. The building system central monitor has the capacity to monitor tenant fitout units. • Emergency exit luminaires are designed and installed to AS 2293 throughout the typical floor tenancy areas. 			
<p>9.7</p>	<p>Communications</p>			
	<ul style="list-style-type: none"> • Dedicated tenant data telecommunications riser for tenant voice and data cabling is to be provided. Provision will be made for a base building floor distributor on each level • One riser with direct access from the building distributor room to the roof is available • A separate dedicated riser for tenant voice and data cabling, with space for a distributor to each floor is provided. • Vertical communication cabling shall be voice grade cabling, with 1 pair per 10m² NLA of commercial tenancy 			

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	<ul style="list-style-type: none"> Fibre optic cabling not provided. Cable path provided for tenants to install fibre, if required. Space shall be accommodated on the roof and or other external areas of the building, for satellite dishes, microwave dishes, aerials, antennae and other telecommunication equipment as required by the tenant at the tenant's expense. All authorities and owners approvals are to be sought by the tenant for these works. Two Building Distributor Rooms will be provided in diverse locations within the building. Provision made for three (3) Communications Carrier entries at each building distributor room. Building Distributor rooms shall be 120/120 fire rated, provided with conditioned air, security monitored Equipment to enable full mobile phone building coverage is excluded but space is included. 			
9.8	MATV			
	<ul style="list-style-type: none"> The system will be suitable for analogue and digital television and shall have capacity for expansion with additional modulators for remodulating FM/AM radio. The system shall also be suitable for use at satellite IF frequencies. The system is designed to comply with all relevant standards including Grade 4 of CCIE Recommendation 500-1, Kyoto, 1978, Vol. XI A four way tee off is provided on each floor allowing for provision of future TV outlets during tenant fitout. No foxtel/ pay TV backbone provisions are provided to the building 			
9.9	Building Generator/ Standby Power			
	<ul style="list-style-type: none"> A base building generator shall be provided to support the following equipment as a minimum; <ul style="list-style-type: none"> 1 lift per rise 100% essential fire safety services 100% ventilation (including life safety services) 50% House lights and power throughout the entire building 100% condensor water supplementary loop When mains power has been interrupted the generator will take load progressively. Under 			

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	<p>normal circumstances the essential services will be fully transferred within approximately 120 seconds of power failure.</p> <p>Diesel fuel storage for a maximum of 24 hours of continuous operation will be provided if a standby diesel generator is required.</p> <p>Co Generation Gas fired co-generation plant to be provided to minimize greenhouse gas emissions and for heat recovery, if required, as part of buildings Green Star aspirations.</p> <p>Generators and Cogen units may be centrally located to optimize efficiencies.</p>			
<p>9.10</p>	<p>Retail</p>			
	<ul style="list-style-type: none"> • The retail area will be provided with the following base provisions to allow retail tenants to connect and extend these services. The retail tenant fitout works is excluded from the base building scope. • Power will be provided via a 80A 1 phase supply to non-food related retail tenancies and 100A 3 phase supply to food related retail tenancies (up to 150m²) for connection to a distribution board supplied and installed by the tenant. Supply to larger tenancies will be made by special arrangement. Electricity meters will be arranged by the tenant and installed in a central location. • Two off four pair Cat 6A communications cable shall be provided to each retail outlet where the termination frame will be provided by the future tenant. • Emergency/exit lighting shall be provided to the retail space within a shell and core design where tenancy exceeds 100m², with no in ceiling services provided. • Retail lighting shall be by the tenant 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
10.0	SECURITY SERVICES			
10.1	Access Control			
	<ul style="list-style-type: none"> • A proximity card security system is to be provided. The system monitors intruder alarms at the building perimeter, fire stairs, plant rooms, roof top, car park vehicle entry and exit • Access control is to be provided on the boom gate entry to the carpark, the main building entry door and in each lift. • Roller doors/boom gates will be controlled through the access control system with an induction loop unit for motion detection on the ramp for outgoing vehicles. • The security cards system is to be such that tenants who wish to install their own security systems can do so without compromising the need for one card for all access to the building. The base building system shall typically be a non proprietary system • The tenant shall be able to overlay its security within the premises in accordance with their security policies and protocols with the selected system being compatible with the base building system • The base building security system is to be such that allows integration and settings to be changed by web server through password protected access • 200 base building (50 number programmed) and 2000 tenant cards shall be provided for tenant use. Additional cards can be provided as part of tenancy fitout scope/cost. The system will have the ability to produce photo identification cards including the necessary software, hardware and printer for this function to be provided.. • Electrical control strikes or magnetic locks shall be provided to the main core fire stairs for future reader installation by tenants in accordance with the PCA A grade criteria. • All fire stair doors shall be fitted with electric strike for code compliance, for release in fire mode 			

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	<p>for compliance with the re-entry requirements of the BCA.</p> <ul style="list-style-type: none"> • Every fourth floor fire stair doors to be fitted with an intercom point for compliance with the re-entry requirements of the BCA • A local UPS will be sized to support the base building security system. • The building security system head end unit shall be positioned in the Security Office on the ground floor with the BMCS head end unit. 			
10.2	CCTV			
	<ul style="list-style-type: none"> • Integration with CCTV and expansion of the base building security system is to be available to accommodate the fitout design requirements. • Digital CCTV cameras shall be fixed colour type, with four split screen capacity and a digital hard disc-recording device and will be located to monitor the ground floor entry points and 100% of the building perimeter in the order of eight cameras. • Coverage to include for building and carpark entrances, exterior gates, fire stair egress and loading dock. There is no CCTV coverage to lift cars. • Cameras shall be robust for exterior use as necessary • Cameras recording to be activated by motion detectors • The security system shall be capable of remote monitoring by an independent security monitoring company • Intercom system shall be provided for entry and exit to the carpark and after hours access to the main building entry with capacity to expand to the tenancy levels within the fitout scope of works at a later date. • A local UPS will support the main system and field panels will incorporate internal batteries. 			
10.3	Retail			
	<ul style="list-style-type: none"> • No security provisions are made to the retail areas of the building • Security shall be by the tenant 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
11.0	LIFT SERVICES			
11.1	Lift Type, Capacity and Plant Requirements <ul style="list-style-type: none"> The west building is to be serviced by four, 17 passenger, electric gearless traction passenger lifts which includes a shared goods lift. The east building is to be serviced by three, 17 passenger, electric gearless traction passenger lifts which includes a shared goods lift. All lifts will feature machine room less (MRL) installations Lift manufacture to be confirmed following tender to major manufacturers – Kone, Schindler, Thyssen Krupp Provision will be made for disabled people to comply AS1735 Part 12 (BCA Compliance) Two 13 passenger carpark shuttle lifts shall provide service between ground and basement carpark levels The design allows for a compliant PCA A Grade lift service design Lift services shall be designed to deliver 14% handling capacity with an interval of < 30 seconds. All lifts will feature machine room less (MRL) installations All lift finishes and fitout shall remain in line with the overall project brief/scope of works 			
11.2	Lift Design Specification <ul style="list-style-type: none"> The design allows for a compliant PCA A Grade lift service design Average lift interval of car departure from ground floor during up-peak < 30 seconds. Five minute handling capacity > 14% of the building’s population, based upon 12sqm per person over the buildings NLA. 			

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	<ul style="list-style-type: none"> All lift finishes and fitout shall remain in line with the overall project brief/scope of works Lift speed is to be approximately 1.6 mps, to be confirmed with final traffic study Each passenger lift is to have a rated load of 1275kg and a rated capacity of 17 passengers, to be confirmed with the design development and final performance study Leveling accuracy of +_5mm to be provided Recommended lateral vibration less than 20mGal to be confirmed with the successful manufacturer 			
11.3	Passenger and Passenger Goods Lift Car Size			
	<ul style="list-style-type: none"> Passenger lift car size is to be approximately 1450mm wide x 1950mm deep x 2400mm height. Lift car doors are to be fire rated and centre opening with minimum clear entrance dimensions of 1100mm wide x 2100mm high. Passenger lift openings will be located at ground level and each occupied level of the buildings. One lift in each building will be designated a shared passenger/goods lift. This lift will also serve all basement levels and the roof Plant level. All cars to be disabled compliant in accordance with AS1735.12 			
11.4	Carpark Shuttle Lift Car Size			
	<ul style="list-style-type: none"> Shuttle lift car is to be approximately 1600mm wide x 1400mm deep x 2300mm height, Lift car doors are to be fire rated and centre opening with clear entrance dimensions of 1100mm wide x 2100mm high Shuttle lifts are to have the capacity to carry 13 passengers. 			
11.5	Lift Car Control and Finishes			
	<ul style="list-style-type: none"> Each lift car is to have two car button control panels with the following provisions - <ul style="list-style-type: none"> Fire service Independent service key switch The goods lift to have capacity for ambulance stretcher 			

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	<p>Single access reader to be provided to each lift car</p> <ul style="list-style-type: none"> • Each passenger lift car is to have internal finishes from the manufacturers standard range generally and including: <ul style="list-style-type: none"> - Carpet to the floor - Linished stainless steel doors & frames - Side walls to have feature panels all to future design development stage of the project. - Rear wall to have a full width mirror above handrail - Suspended ceiling panel incorporating recessed low energy fluorescent or LED down lighting • Landing doors, door frames, landing button stations & hall lantern faceplates shall be flush finished in a linished stainless steel to the full depth of the jamb. • Two risers of lift landing call buttons located at each landing in the East and West Building with a single riser between the Car Park Shuttle Lifts. 			
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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
12.0	HYDRAULIC SERVICES			
12.1	General <ul style="list-style-type: none"> The building Hydraulic services and systems are to be designed and installed in accordance with all relevant Australian Standards, codes and authorities requirements. Tenant sub-meters are to be provided as part of the base building works. All fittings shall be WELS (water efficient labeling scheme) and brass fittings to be manufactured (D.R. brass). Shower, WC and locker facilities are provided to the carpark levels (Total numbers TBC) Rainwater recycling provisions to be provided as required to achieve 5 Green star rating. Water recycling provisions to be provided as required to achieve 5 Green star rating. Blackwater treatment and reuse is not included. A stormwater collection and reuse tank shall be provided, suitably sized for water flushing reuse within the building 			
12.2	Sanitary Plumbing and Drainage <ul style="list-style-type: none"> Provide toilet amenities, with hot and cold water provisions, in accordance with BCA requirements. Provide all hydraulics services to the amenities to service a standard office facility. Provide sanitary plumbing and water supply on each floor allowing for provisions for future tenancy needs. Sanitary plumbing facilities shall allow for wet stack coverage to 70% of the floor Vents and junction points are provided in the stack work in the core area which enables additional fixtures to be installed. The whole sanitary plumbing system allows for additional 			

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	<p>discharges to cater for the specific needs of each tenancy. Sanitary and grease stacks have capacity for additional fittings to be installed. Provision is allowed for coverage of the majority of office floor between the service core to the facade of the building, subject to coordination with the structure, mechanical ducts and other services.</p> <ul style="list-style-type: none"> • Water conserving sanitary fixtures including flow controlled tapware and minimum flush fixtures will be installed. • Grease waste drainage provisions will be provided to food tenancies, and a provisional grease waste stack shall be provided in each building. 			
12.3	Stormwater Drainage and Rainwater Plumbing			
	<ul style="list-style-type: none"> • Stormwater drainage to be provided in accordance with Authority requirements and BCA. • Water quality control devices shall be provided on the stormwater outfall in accordance with Council requirements and Civil engineering specification • Provide internal gutter and downpipe system in accordance with requirements for 1:100 storm intensity of 5 minute duration. 			
12.4	Cold Water System			
	<ul style="list-style-type: none"> • Provide cold water supply and service to the building in accordance with Authority requirements and BCA. • Domestic water supply shall be provided to all fixtures and usage points at minimum pressures in accordance with AS3500. • Control valves are provided on main runs, branch lines and individual groups so as to facilitate shut down of any section for maintenance with a minimum of interruption. 			
12.5	Hot water system			
	<ul style="list-style-type: none"> • The hot water service shall be accordance with AS 3500 National Plumbing Code • The hot water service shall be zoned to match the cold water system. • Hot water heaters are provided as required for the anticipated load and the service reticulates to the various fixtures within the development. • Control valves are provided on main runs, branch lines and individual groups so as to facilitate shut down of any section for maintenance with a minimum of interruption. • Pipework is to be copper tube with aluminium foiled sheathed mineral wool sectional lagging, 			

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	<p>except for pipes located in walls or cupboard spaces with prelagged insulated copper tube.</p> <ul style="list-style-type: none"> Hot water temperature in public spaces will be limited to 42 degrees C, at basin taps and showers to prevent scalding. 			
12.6	Gas Services			
	<ul style="list-style-type: none"> The gas service shall confirm with ActewAGL requirements and the Gas Code (AS 5601). Gas service shall be provided to the mechanical hot water, domestic hot water system, and food tenancies, and a provisional riser shall be provided in each tower with a total provisional spare capacity of 1000 mega joules Extension and utilisation of this capacity is a Lessee fit-out item. 			
12.7	Trade waste			
	<ul style="list-style-type: none"> Bin wash down within in waste room of loading dock shall drain to a grease arrestor. 			
12.8	Retail			
	<ul style="list-style-type: none"> The food tenancy areas shops will drain to a dedicated grease arrestor, with 3000L capacity. A capped provision below slab will only be provided at the retail outlets Cold water provisions shall be made to all retail tenancies at high level Gas supplies shall be provided to two of retail tenancies as for food outlets with metering to be provided by the retail tenant when connections are required All additional water provisions (including hot water) shall be made by the tenant 			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
13.0	FIRE PROTECTION			
13.1	General			
	<p>Fire services will be designed to comply with the latest requirements of the following authorities, standards and codes:</p> <ul style="list-style-type: none"> • Canberra Fire Brigade. • Canberra Water Authority • AS 1670 Fire Detection and Alarm Systems • AS 1668 - Part 1 Smoke Management • AS 1851 Maintenance of Fire Protection Equipment • AS 2118 Automatic Fire Sprinklers • AS 2419 Fire Hydrant Installations • AS 2441 Fire Hose Reel Installation • AS 3000 Wiring Rules • AS 4118 Fire Sprinklers • Building Code of Australia • All other Codes & Standards required by the above • Performance Based Fire Engineered Solutions, which modify current Statutory Authority requirements. <p>The latest revision of each of the above will be used.</p>			

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	<p>The building fire protection system is to be designed and installed in accordance with all relevant Australian Standards, codes and authorities requirements.</p> <ul style="list-style-type: none"> • Water supply shall be grade 2 –pending acceptance by the Canberra Fire Brigade • A fire indicating panel to indicate the zone of the detector that has alarmed is provided • Smoke hazard management in accordance with AS1668 and fire engineered solution. • Smoke detectors shall be of the photo electric type & shall be currently approved by SSL and all authorities having jurisdiction over the works. • Fire hydrants and hose reels shall form part of the combined sprinkler and hydrant and hose reel system 			
<p>13.2</p>	<p>Fire Systems</p>			
	<ul style="list-style-type: none"> • Fire sprinklers shall be provided to the building, inclusive of carpark areas and exclusive of the substation, in accordance with the BCA. • Smoke detectors are provided in accordance with AS1670/1668, pending finalization of the fire engineered solution. • The entire building is protected by an automatic sprinkler installation complying in all aspects to the authorities and fire codes • Sprinklers shall be wet type being – <ul style="list-style-type: none"> Light hazard to office area OH2 to parking areas OH3 to retail areas • The sprinkler pipework is designed on a computer based hydraulic pipe sizing system similar to “HYENA”. • On tenanted floors the pipework is on a ring main principle, with adequate capacity in the range pipes to accommodate the additional head requirements of the tenant without expensive amplification of pipework. • The density of sprinkler heads shall be designed to suit the hazard classification as required by AS 2118 – 1999. 			

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	<ul style="list-style-type: none"> All heads in ceiling voids, plant rooms and in other low priority areas are brass finish type with no escutcheon. All heads fixed to the underside of suspended ceilings in office areas & toilets are semi-recessed escutcheon type - with white finish. All heads throughout the main Lobby Level, Lift Lobbies and Foyers to be fully recessed with sprinkler deflector level with the ceiling and the hole concealed by a metal disc which shall finish flush with the underside of the ceiling. Sprinkler heads are positioned in the centre of ceiling tiles where possible and shall conform to an acceptable pattern and appearance. System to be capable of accepting and interfacing with alternative suppression systems, i.e. gas suppression and or pre-action for tenant communications rooms in localized areas. 			
13.3	Controls			
	<p>In the event of fire, the fire sprinkler system shall automatically carry out the following functions with alarms through the BMCS:</p> <ul style="list-style-type: none"> Provide water discharge (at the required density); Sound the local alarm (water driven gong); Transmit an alarm to the Fire Station; Cause the air-conditioning & mechanical systems to go into fire mode; Interface with the Control & Indicating Equipment (CIE) Panel; Interface with the Sound system for emergency purposes (SSEP) via the master fire indicator panel; and Interface with the BMCS system via Control and Indicating Equipment Panel and security system <p>PA facility will be at MECP to allow announcements either floor by floor, or whole of building</p>			
13.4	Fire Hydrant Hose Reel System			
	<ul style="list-style-type: none"> Provide Fire Hose Reel and internal building fire hydrant system supply and service to the building in accordance with Authority requirements and BCA. 			

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	<ul style="list-style-type: none"> The combined sprinkler/hydrant/hose reel system is a pressurised system, fed from the booster pumps located on basement level 1. Pressure reducing valve sets are included where necessary to contain the maximum pressure allowed by the Fire Brigade. Hydrants in the fire stair and hose reels on the floor level are provided throughout the complex using 65mm hydrant valves with plastic cap and chains along with 36 metre hose reels or as required by the fire engineering Fire Hydrants will be located in the required Fire Stair landings to gain full coverage. Fire Hose Reels will be generally within 4 metres of required Fire Exits for the fire hose reels in the building. The fire hydrant and hose reel system shall be designed and installed such that the building and fitout can achieve full compliance if each floor were to be fitted out at 1 workstation per sqm in a grid pattern with no high walls or partitions, without the need for additional hydrants or hose reels. 			
13.5	Fire Services Test Water Reclamation			
	The water used in regular fire services testing shall be recovered and reused for non-potable uses within the building.			
13.6	Fire Engineering			
	<ul style="list-style-type: none"> The project is to be designed and built in accordance with the requirements of the Building Code of Australia. There will be instances through the design development process whereby an alternative solution will be developed in order to gain this compliance. Some instances where this will be developed include but are not limited to: <ul style="list-style-type: none"> Travel distances to egress points within the floor plate. Access to plant and back of house areas from a fire egress stair/path. Reduction to two hour FRL for retail spaces Atrium compliance 			

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	<ul style="list-style-type: none"> Evacuation shall be on the basis of a “one out all out” strategy which means all floors will be required to evacuate together 			
13.7	Retail			
	<p>The retail area will be provided with the following base provisions to allow retail tenants to connect and extend these services. The retail tenant fitout works is excluded from the base building scope.</p> <p>Exposed skeletal sprinkler protection shall be provided in each tenancy to open plan, with additional outlet paps provided to allow connection by future fitout by others.</p> <p>Hydrants and Hose Reels will not be provided within the tenancies, however, connection points for hose reels within larger tenancies will be available pending Fire Engineering and Fire Brigade requirements.</p> <p>The Smoke Detection and Evacuation Systems will provide interface points within each tenancy to allow future connection of detection and alarm devices as may be required by the specific design of each tenancy.</p>			

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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
14.0	ENVIRONMENTALLY SUSTAINABLE DESIGN			
14.1	Energy Modeling			
	<p>The building shall be designed, constructed and commissioned in accordance with the requirements of the National Australian Built Environment Rating System (NABERS) to a base building rating of 5 stars.</p> <p>No allowance for Nabers design assessments has been made for the tenancy. Certification of the buildings energy performance is to be undertaken by an independent assessor.</p> <p>The base building shall be designed, constructed and commissioned to achieve a 5 star Greenstar Design Rating in accordance with the requirements of the Greenstar Office Design V3 Rating, Green Building Council of Australia.</p> <p>The above ratings, however, shall be subject to, and dependent on the fit-out design and construction achieving similar ratings and dependent on tenant use of building.</p> <p>New technology or new applications of existing technology should be used where possible in order to deliver a benchmark ESD project.</p> <p>Extensive energy modelling will be carried out throughout the design development phase and will continue until the building is fully commissioned to ensure the building is delivered to its full environmental potential. Energy modelling is to be used to guide design development and to assist in the optimisation of strategies or options that will lead to enhanced occupant utility, lower running costs, and reduced (whole building) environmental impact.</p> <p>Refer to Preliminary Greenstar Assessment in Appendix B which provides an indication of how the Greenstar Rating will be achieved.</p> <p>Refer to Appendix C for the Schedule of Tenant Requirements which outlines the obligation the</p>			

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	tenant must make to ensure the Base Building NABERS and Greenstar Rating can be achieved.			
14.2	Natural Light			
	<p>The atrium glass roof will allow light to penetrate deep into the floor plates of the building and illuminate the atrium base for the most part of the day thereby reducing the dependence on artificial lighting and providing a thermal buffer space for the office areas.</p> <p>Excessive glare shall be minimised, without diminishing the benefits of providing natural light to the building, or negatively impacting on the ambient lighting levels on the ground plane. Hence some direct light will penetrate into each floor at various times of the day which will change throughout the season.</p> <p>To achieve the best result, a collaborative approach to the design is recommended. Daylight modelling shall be conducted and provided to the tenant for review, during the design development phase of the building façade, atrium and skylight. Factors to be considered and balanced when optimising the design are</p> <ul style="list-style-type: none"> • Excessive glare to floor plates adjacent the atrium • Optimisation of daylight penetration into all floor plates and base of the atrium • Controlling Heat and energy impacts at the upper levels of the atrium • Optimise views and outlook • Ongoing operation surety. 			
14.3	The building fabric - material selection			
	<p>The selection of materials shall be carefully considered to ensure:</p> <ul style="list-style-type: none"> • Materials such as concrete and steel will contain a proportion of post consumer recycled materials. • Timber from forests with identified sustainable management practices shall be used throughout. • Low VOC products will be used where practical – in particular carpet and paint to provide a healthy working environment. 			

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	<ul style="list-style-type: none"> • Zero ozone depleting substances will be used for building fabric insulation and all refrigerants. • Non-recyclable waste generated during construction will be minimised to below 20%. 			
14.4	Water Conservation			
	<p>It is anticipated that, compared to similar buildings, water consumption will be reduced significantly. The following water saving initiatives will be incorporated:</p> <ul style="list-style-type: none"> • Water minimisation and re-use – the buildings have been designed to minimise the consumption of water using fittings that are 4 and 5 Star rated, dual flush toilets with 3/4.5 L flush and utilising recycled water. • Waterless urinals • Efficient landscape irrigation utilising recycled water will be installed. • Water efficient cooling tower strategies, in part utilising recycled water will be incorporated where practicable. • Rainwater harvesting system will be utilised for toilet flushing, irrigation and operational wash-down activities where practicable. • Recover and reuse, for non-portable purposes, the water consumed in regular fire services tests. 			
14.5	Energy Performance			
	<p>An integrated approach to the building services and envelope design shall produce an extremely efficient building design that is targeted to achieve a rating of 5 Star NABERS. This shall be achieved through the use of:</p> <ul style="list-style-type: none"> • Cogeneration Plant • Highly efficient façade with effective solar protection to minimise cooling and heating loads that are experienced by the building. • Energy efficient vertical transportation systems will be proposed 			

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	<ul style="list-style-type: none"> • T5 lighting in office areas– Arranged effectively, T5 light fittings provide the opportunity to significantly reduce energy consumption whilst maintaining uniformity and internal environment quality. • A time scheduling system shall be provided to ensure lighting is controlled effectively after hours. • A sophisticated metering strategy will be developed to ensure energy performance can be tracked, evaluated and optimised on a frequent basis. • Options to further reduce base building energy consumption and enhance the ABGR rating will be investigated during the design process. 			
14.6	Construction Process			
	<p>The impact of the construction process upon the local environment and the long-term environmental performance of the building is significant. As such, the following measures will be undertaken to ensure that environmental performance is maximised:</p> <ul style="list-style-type: none"> • A specialist ESD consultant will be employed during the design process. The input from this consultant will inform the design and ensure that environmental performance requirements are achieved. It is also proposed to engage a Commissioning Agent to oversee the commissioning process. • The building will be comprehensively commissioned in line with ASHRAE/CIBSE standards to ensure that the energy performance is optimised prior to handover. A building tuning period is also proposed to optimise seasonal efficiencies and ensure the building is operating effectively when fully tenanted. • Comprehensive Environmental and Waste Management Plans will be generated for the project. A target of 80% of waste leaving the site will be recycled/diverted from landfill. 			

14.7	Internal Environmental Quality			
	<p>Providing an excellent environment for employees will enhance the lifespan of the building, reduce sick building syndrome and minimise employee absenteeism. A number of initiatives will be included, such as:</p> <ul style="list-style-type: none"> • Daylight availability and connection to the external environment • High levels of fresh air will be provided to improve indoor environment quality. • Thermal comfort assessment during the design process to optimise design • Effective glare control – controls include the provision of sunblades to specific areas of the façade, and provision of solid elements and fixed louvres to the feature roof • Well designed acoustic environment • Materials with low off gassing potential • Effective control of internal conditions. Dedicated air handling units will be provided to areas outside the typical office environment including the base of the atrium at level 1 and the main entry lobby. Generally, the atrium will be used as a relief air path for a proportion of the return/spill air from each office floor level for each building. Smoke exhaust will be provided at highest point of atrium, with make-up air to be sourced from office floors as well as from outside air via louvres within building façade at the base of the atrium of each building, subject to design development and fire engineering. • The current design makes no provision for dedicated air conditioning of the floor space contained within the atrium roof on Level 6 of each building. Options for converting this space into useable tenant space will be explored during the design development phase. 			

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14.8	Transport			
	<p>The National Circuit precinct is well served by numerous bus transport lines. As a supplement to these, car parking is provided within the development. Small car parking spaces will be provided to encourage use of fuel-efficient vehicles.</p> <p>Provision of bicycle parking, showers and change rooms is to be provided for for staff, in accordance with Greenstar Criteria sufficient to achieve the associated Greenstar Credit.</p>			
14.9	Waste Recycling			
	Adequate waste recycling storage areas will be provided to facilitate recycling.			
14.10	Metering			
	<p>Base building metering provisions shall be provided through a standalone metering and reporting system, for live recording and storage of metering data.</p> <p>The following metering shall be provided to meet both NABERS and Green Star requirements –</p> <ul style="list-style-type: none"> • Water meter for retail tenancies • Water meters for commercial floors • Water meter to ground floor amenities • Water meter to each of grease room and bin wash rooms • Smart water meters to cooling towers (in and out) • Mechanical hot water meter • Domestic hot water meter • Electrical meters to retail tenancies (to be coordinated with Origin Energy by retailers on lease commencement) 			

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	<ul style="list-style-type: none"> • Electrical meters to typical office floors • Electrical meters to main plant being - cooling towers, chillers, lifts, house lights and power, including equipment with loads in excess of 100kVA • Gas meters to retail areas tenancies (to be coordinated with the local supplier, by retailers on lease commencement). <p>A high level interface shall be provided to the BMCS</p> <p>Metering data shall be stored on site with a web page access available through protected password access</p>			
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ITEM	PERFORMANCE REQUIREMENT	COMPLIANCE		COMMENT
		YES	NO	
15.0	BUILDING INFORMATION MODELLING			
15.1	ISPT_ BIM VISION Statement:			
	<p>“An accurate single integrated 3D model with sufficient object information that supports the entire life of the building from initial design through to occupancy and operation.”</p> <ul style="list-style-type: none"> • Reduced exposure to contract risk • Visualisation – better understanding (development management tool) • Access to object information for use in physical and financial management 			
15.2	ISPT stated BIM objectives			
	<ol style="list-style-type: none"> 1. Clash detection to reduce exposure to contract variation to a certain degree 2. Development of asset registers for both base building and fitout to facilitate building owner and tenant tax depreciation schedules 3. Provision of bills of quantity to assist in agreement of cost break ups for integrated fitouts between tenant and building owner 4. Option analysis to determine most economical and best practice eg by measuring volume of steel and/or concrete for different design options 5. Details of manufacturers maintenance regimes via URLs to avoid reinventing the wheel and redundancy of contract scope of work 6. Development/ Project Management tool to streamline design and approval process through 3D monitoring software applications 			

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15.3	Design Team BIM Implementation			
	<p>The exchange of files between all consultants and the BIM Manager (NDY) will have as its focus the most effective means of transfer of drgs/data to:</p> <ul style="list-style-type: none"> - simplify coordination and document transfer during the design process and ensure it is NDY BIM compatible - minimise impact of the BIM data output on the design process - maximise 'intelligence' of the resultant 3D model to better support the design process - do all of the above concurrent with providing ISPT with their output requirements during the various phases of the project. 			

APPENDIX A

ARCHITECTURAL CONCEPT PLANS, SECTIONS & ELEVATIONS

Fender Kastalidis Architects_Architectural Plans, Sections and Elevations as submitted for Works Approval, February 2010.

APPENDIX B

INDICATIVE GREENSTAR ASSESSMENT

4 National Circuit

Cat.	Title	Credit No.	Points Available	Common Credits to Target	Target / TBC	Recommended	Altern./ Stretch	Not Targ.
Management								
	Green Star Accredited Professional	Man-1	2	2				0
	Commissioning Clauses	Man-2	2	2				0
	Building Tuning	Man-3	2	2				0
	Independent Commissioning Agent	Man-4	1	1				0
	Building Users' Guide	Man-5	1	1				0
	Environmental Management	Man-6	2	2				0
	Waste Management	Man-7	2	1	1			0
	TOTAL		12	11	1	0	0	0
	Weighing		0.75	8.3	0.8	0.0	0.0	0.0
Indoor Environment Quality								
	Ventilation Rates	IEQ - 1	3	1				2
	Air Change Effectiveness	IEQ - 2	2		2			0
								With added ventilation air and swirl diffusers this credit may be achieved though distances from perimeter to RA point may be large and prevent credit from being achieved

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Carbon Dioxide Monitoring and Control	IEQ - 3	1	1		0	
Daylight	IEQ - 4	3			1	2 Size of floorplate will make achieving 1 credit difficult. External shading will further reduce probability of achieving
Daylight Glare Control	IEQ - 5	1		1		0 Would be a nice credit to achieve, but very difficult under v3 to achieve with fixed external shading. Each configuration / orinetation must comply 80% of business hours (1.5m in at 720mm desk height)
High Frequency Ballasts	IEQ - 6	1	1			0
Electric Lighting Levels	IEQ - 7	1		1		0 Again would be nice to achieve but can be made difficult when balancing with ENE-3 and providing enough fittings to allow for some degree of tenant partitioning.
External Views	IEQ - 8	2		1		1 Size of floorplate may restrict ability to achieve 60% within 8m of view or well lit atrium
Thermal Comfort	IEQ - 9	2	2			0
Individual Comfort Control	IEQ - 10	2			2	0 Could be achieved with UFAD or supply air droppers off of overhead duct to workstations equipped with nozzle type outlets.
Hazardous Materials	IEQ - 11	NA	NA			0 Do the existing structures contain any Asbestos, lead, or PCBs? If not then NA
Internal Noise Levels	IEQ - 12	2	1	1		0 Location should allow 2 credits to be achieved
Volatile Organic Compounds - Paints	IEQ - 13	1	1			0
Volatile Organic Compounds - Carpets & Flooring	IEQ - 13	1	1			0 Provided we are installing the majority of the credits
Volatile Organic Compounds - Adhesives & Sealants	IEQ - 13	1		1		0 Sealants & adhesives OK for design, difficult to prove for As-Built which is what ISPT want
Formaldehyde Minimisation	IEQ - 14	1	1			0

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Mould Prevention	IEQ - 15	1					1	
Tenant Exhaust Riser	IEQ - 16	1		1			0	Assume this is a base building provision
TOTAL		26	9	8	0	3	6	
WEIGHING		0.77	6.9	6.2	0.0	2.3	4.6	
Energy								
Conditional Requirement	Ene -			Y				
Greenhouse Gas Emissions	Ene - 1	20	13	1		1	5	5.5 Star simulation = 5 Star + 22% which should be achievable with VAV. This will likely achieve 13 points using the Green Star calculator methodology in lieu of inputting the NABERS calculator emissions output. This method is allowed as of 23/1/10, but may be subject to change which could put 3-4 of these credits at risk.
Energy Sub-metering - Base Building	Ene - 2	1	1				0	
Energy Sub-metering - Tenant	Ene - 2	1	1				0	
Lighting Power Density	Ene - 3	3	2	1			0	To be balanced with IEQ-7 for third credit
Lighting Zoning - 100m2 zones	Ene - 4	1	1				0	
Lighting Zoning - Addressable	Ene - 4	1	1				0	
Peak Energy Demand Reduction	Ene - 5	2				2	0	Only if Cogen or large thermal storage system. Consider CHW storage if large tank space available
TOTAL		29	19	2	0	3	5	
WEIGHING		0.86	16.4	1.7	0.0	2.6	4.3	
Transport								
Provision of Car Parking	Tra - 1	2				1	1	Confirm if we can provide 25% less parking than NCPA requirements. 2/100 GFA. GFA = 34,272m ² = 685 cars 25% less = 514 cars currently

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								providing 612
Fuel-Efficient Transport	Tra - 2	1	1				0	
Cyclist Facilities	Tra - 3	3	1	2			0	Based on 30,244 m2 NLA for two buildings, for one point we would need 101 bicycle spaces with 10 (possibly 11) showers and 101 lockers. Double these requirements for two spaces. Third point for visitor spaces (in addition to 1 or 2 above) would require 40 spaces near public entry, signed, covered and secure.
Commuting Mass Transport	Tra - 4	5	2				3	Uma to confirm based on 3-5 NC assessment - max points available 2
TOTAL		11	4	2	0	1	4	
WEIGHING		0.73	2.9	1.5	0.0	0.7	2.9	
Water								
Occupant Amenity Water	Wat - 1	5	1	1			3	More work required to confirm second credit, unlikely to be achieved with extent of showers proposed under TRA-3. Second credit would be targeted if rainwater reuse to toilets is adopted.
Water Meters	Wat - 2	1	1				0	
Landscape Irrigation	Wat - 3	1	1				0	Confirm if landscaping present, NA if not
Heat Rejection Water	Wat - 4	4				4	0	Fully air-cooled solution would assist but achieve less under ENE-1. Muller 3C or BAC closed circuit evaporative coolers would likely achieve 2 points here while perhaps dropping 1 point under ENE-1. Rainwater reuse would not achieve 50% reduction for two points.
Fire System Water Consumption	Wat - 5	1		1			0	TBC

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TOTAL			12	3	2	0	4	3	
WEIGHING			1.00	3.0	2.0	0.0	4.0	3.0	
Materials									
Recycling Waste Storage	Mat - 1		2	2				0	
Building Reuse - Façade	Mat - 2		NA	NA				0	Is the GFA of the existing buildings less than 20% of that proposed? If not then these credits are not NA
Building Reuse - Structure	Mat - 2		NA	NA				0	
Reused Materials	Mat - 3		1					1	If 2% of the contract value is associated with reused materials (beyond those identified in other MAT credits) then 1 credit can be targeted. 60% of NLA would need to be integrated fitout or shell and core for 1 credit. GC to discuss with team how shell and core is best handled with West building being integrated fitout and half building fitted as base building.
Shell and Core or Integrated Fit-out	Mat - 4		2					2	Cofirm with structural engineer. Note v3 requirements of an average reduction in Portland cement across all mixes of 15% recycled content for stressed concrete (PT), 30% for in-situ, and 20% for precast.
Concrete - cement	Mat - 5		2		1			1	Can't be targeted unless recycled source identified and aggregate is graded / certified.
Concrete - aggregate	Mat - 5		1					1	Normally one can be achieved unless structural steelwork is very high in the job
Steel	Mat - 6		2	1				1	30% cost reduction in PVC under v3, but credit is likely to change given recent GBCA announcement
PVC Minimisation	Mat - 7		2		1			1	Credit likely to be revised to allow AFS given recent announcement.
Sustainable Timber	Mat - 8		2		2			0	Potential to target this credit with façade
Design for Disassembly	Mat - 9		1		1			0	

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Dematerialisation	Mat - 10	1		1			0	Review individual items with PMs
TOTAL		16	3	6	0	0	7	
WEIGHING		0.88	2.6	5.3	0.0	0.0	6.1	
Land Use & Ecology								
Conditional Requirement	Eco -							
Topsoil	Eco - 1	1					1	As part of our works will we be removing topsoil?
Reuse of Land	Eco - 2	1	1				0	Has 75% of the site been previously built on?
Reclaimed Contaminated Land	Eco - 3	2					2	Any contamination requiring full remediation?
Change of Ecological Value	Eco - 4	4	1				3	Review
TOTAL		8	2	0	0	0	6	
WEIGHING		0.75	1.5	0.0	0.0	0.0	4.5	
Emissions								
Refrigerant ODP	Emi - 1	1	1				0	
Refrigerant GWP	Emi - 2	2					2	Could be targeted if absorption chillers were used
Refrigerant Leaks	Emi - 3	2	1			1	0	If chiller plant rooms are semi airtight we can target this. Second credit relates to automatic refrigerant pump down - requires 95% of charge to be pumped down.
Insulant ODP	Emi - 4	1	1				0	
Watercourse Pollution	Emi - 5	3				2	1	Seek civil advice regarding first two credits
Discharge to Sewer - Building Outflows	Emi - 6	4	1			3	0	Additional points could be targeted with blackwater
Discharge to Sewer - Blackwater	Emi - 6	NA	NA			1	0	Additional points could be targeted with blackwater
Light Pollution	Emi - 7	1		1			0	Not automatic given extent of external lighting that is likely.

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Legionella	Emi - 8	1				1	0	Closed circuit evaportative fluid coolers or air-cooled chillers could achieve
TOTAL		15	4	1	0	8	3	
WEIGHING		0.40	1.6	0.4	0.0	3.2	1.2	

Sub-total weighted points:

Incremental		43.2	17.7	0.0	12.8	26.7
Cumulative		43.2	60.9	60.9	73.7	

Innovation								
Innovative Strategies & Technologies	Inn-1	2					2	
Exceeding Green Star Benchmarks	Inn-2	2					2	
Environmental Design Initiatives	Inn-3	1					1	
TOTAL		5	0	0	0	0	5	
WEIGHING		1.00	0.0	0.0	0.0	0.0	5.0	

Total weighted points:

Incremental		43.2	17.7	0.0	12.8	31.7
Cumulative		43.2	60.9	60.9	73.7	

Cumulative Stars	3.0 Stars	5.1 Stars	5.1 Stars	5.9 Stars
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APPENDIX C

TENANT FITOUT AND BUILDING OWNER OBLIGATIONS

ESD CONSULTANT TO CONFIRM

APPENDIX D

INTEGRATED FIT-OUT CONTROL DOCUMENTS

DRAFT FOR DISCUSSION