Appendix B

Updated Mitigation Measures

Issue	Mitigation measures

Built form and visual amenity	• final design consistent with the principles of the Aerotropolis SEPP and associated guidelines
	• landscaping to use endemic species representative of woodland on the Cumberland Plain
	• consultation with landowners of occupied residences to the west of the site to establish visual mitigation measures during construction
	• construction lighting to be directed away from occupied residences to the west of the site
	• the structure is designed for disassembly through a modular component-based kit so the building can be moved to another site or adapted into a different use
	• the building's design incorporates structural elements to improve visual amenity and create visual interest. Features include:
	  ○ 360c glass panels around the facility
	  ○ large roof top structure which presents as an urban canopy
	  ○ wood panelling and slats to promote visual interest

Design considerations	• passive and active surveillance systems are incorporated into the design to facilitate equitable, safe, and legible access to the public realm
	• Crime Prevention Through Environmental Design (CPTED) principles to be implemented during detailed design
	• the design incorporates a range of sustainable building materials and construction methods to provide natural building cooling and reduce embodied carbon
	• the following design elements will be resolved during the detailed design:
	  ○ materials and finishes
	  ○ signage illumination details
	  ○ benchmark targets for design and place making
	• the building has been modelled to be capable of being naturally ventilated more than 55% of occupied hours and effectively night purged for approximately 200 days a year

Sustainability	• outperform a 5-star NABERS energy rated office building in terms of energy consumption • the green roof is designed to comply with the Green Star Urban Heat Island requirements and provides both green roof and solar panels to promote cool roof outcomes, provide an urban canopy, create habitat and generate renewable energy • ESD principles are to be implemented to achieve a net zero carbon emission and intent of the facility is to engage with the living building challenge • mechanical system utilises displacement ventilation to purge residual solar heat gains from the space when actively conditioned • be resilient to climate impacts and mitigate the urban heat island effect • generate sustainable social outcomes through placemaking and community building • the building is targeting net-zero operational energy and all electric building strategies will be integrated, no gas will be used in the building for any purposes • implement circular economy principles during design, construction and end of life for the building

Issue	Mitigation measures
	• photovoltaic cells will generate 100% of the office energy demand • the roof will be able to capture and store enough energy to power the building entirely (not including the manufacturing equipment) • the building will be carbon positive through the embodied carbon in the building materials (predominantly timber) • blinds and shading will be further considered during the detailed design of the building • passive design strategies including significant facade shading, internalised thermal mass and green roof elements to reduce energy consumption of the buildings
Traffic and transport	• construction traffic management measures to be described in the CEMP • detailed Green Travel Plan to be implemented by the building tenant • 50 car parking spaces are proposed in the interim design, until further development of the site occurs, with 18 car parking spaces proposed for the long term • 10% (2) of the permanent parking spaces will support electric vehicle charging - one ultra fast, one level 4 • 13 bicycle parking spaces satisfies the minimum requirement of 8 staff bicycle spaces and 3 visitor bicycle spaces • end of trip and cycling facilities will include the ability to have E-bike charging • the First Building carpark is proposed to enable safe areas for pick up and drop off • loading spaces are separate from pedestrian access points • the proposed porte-cochere is adjacent to the north-south vehicle access link and allows service vehicles or waste trucks to access the loading zone without reversing or parking • the designated loading zone is separated from the general travel lane by a median, which allows other vehicles to traverse through the Site while a heavy vehicle is parked • separate access points are provided for pedestrian's and vehicles • a two-lane two-way temporary carriageway will be constructed adjacent to Fifteenth Avenue to enable vehicle access • details on grade separate of 15th Avenue and the future rail are to be addressed during detailed design • 6m wide one-way vehicular access is provided through the Site for vehicles to enter from Innovation North and to exit onto Fifteenth Avenue • pedestrian linkages and connection to the active transport network will be further considered in conjunction with the Masterplan at detailed design • connectivity to active and passive transport options will be further developed at the masterplan stage • plans to be prepared for access roads and parking in accordance with Australian Standards A.S. 2890 • the Applicant will continue working with Sydney Metro to coordinate the construction site requirements and interfaces with the First Building development • the Applicant will implement the recommendations of the *Security Risk Assessment – Impacts on Metro Corridor* prepared by AECOM, dated 21 July 2022
Noise and vibration	• preparation of a Construction Noise and Vibration Management Plan • minimising coinciding use of noisy plant items • shutting down intermittently used equipment when not in use

Issue	Mitigation measures
	• regular compliance checks on the noise emissions of all plant and machinery • non-tonal reversing alarms used on all items of plant and heavy vehicles • noisy equipment oriented away from sensitive receivers where practicable • pre-construction and ongoing consultation with adjoining sensitive receivers • apply minimum working distances to manage vibration impacts, with attended vibration monitoring where works occur within the minimum distances
Soil and water	• a Soil and Water Management Plan will be prepared in accordance with the NSW Department of Housing Publication "Managing Urban Stormwater – Soils and Construction (2004)" • the Applicant is committed to reducing earthworks as much as possible to minimise impacts on Aboriginal cultural values • a detailed erosion and sediment control plan will be prepared as part of the CEMP • the Applicant will commit to ensure the fill transported to the Site is non-putrescible clean fill • landscape-led design minimises the potential for environmental and waterway impacts from development on acid sulfate soils • the 3,500m^2 roof will harvest rainwater and reuse it throughout the site • the harvested water is used to promote urban cooling and reduce the heat island effect • the rainwater tank has been sized to provide nonportable water demand offset of the building through supplying non potable water demands on Site and providing capacity to supply future buildings as Bradfield grows

Waste management	• implementation of a Construction Waste Management Plan to be included in the CEMP
	• implementation of an Operational Waste Management Plan including the following objectives:
	  ○ maximise resource recovery by reuse and recycling
	  ○ minimise the generation of waste to landfill
	  ○ maximise waste material avoidance and reuse on the site
	  ○ establish record keeping, monitoring and reporting procedures
	  ○ comply with the requirements of the relevant statutory authorities
	• a detailed waste management plan is to be prepared consistent with control 11.3 of the DCP Phase 2
	• adopt an ongoing improvement approach to improve on best practice waste management principles
	• waste collection will occur one to two times per week
	• waste generated will be managed effectively to reduce odour impacts
	• as part of its Green Star commitments the proposal will deliver 90% diversion of construction waste from landfill

Air quality	• CEMP to include standard air quality control measures, contingency plans and response procedures and suitable reporting and performance monitoring procedures • CEMP to include standard odour mitigation measures for construction including keeping excavation surfaces moist, covering excavation faces and/or stockpiles, use of soil vapour extraction systems and regular monitoring of discharges as appropriate

Issue	Mitigation measures
Contamination	• a detailed site investigation (DSI) has been prepared for the development which concludes that the site does not require remediation and will be suitable for the proposed use • prior to commencement the proposal will be reviewed by an EPA accredited Site Auditor
Bushfire	• establish and maintain asset protection zones as indicated in the BHA • provide fire hydrants in accordance with the BCA • buildings to be constructed in accordance with *AS 3959 Construction of buildings in bushfire-prone areas* and measures outlined in the BHA • implement the recommendations of the Bushfire Assessment

Stormwater management	• at detailed design stage, stormwater drainage system for the Site will be prepared to address local/site specific stormwater management consistent with the masterplan SMP and the flood impact assessment prepared by Advisian
	• the design of the stormwater system and overland flows during detailed design will be consistent with the DCP Phase 2
	• a temporary drainage basin is proposed until other arrangements can be made through the Masterplan
	• a variety of WSUD strategies are incorporated into the proposal including:
	  ○ rainwater harvesting
	  ○ natural vegetated swales
	  ○ landscaped areas
	  ○ green roof
	  ○ permeable paving

Natural Environment and landscaping	• an arborist's report will be undertaken at detailed design stage and prior to commencing construction to identify trees to be removed/retained depending on tree health and stability
	• a detailed landscape plan and planting schedule will be provided at detailed design, consistent with the requirements of the DCP Phase 2 to address wildlife strikes on Western Sydney Airport
	• nesting boxes will be provided if any hollow bearing trees are removed
	• a detailed landscape plan will be provided which addresses:
	  ○ planting species of Appendix B of the DCP Phase 2
	  ○ tree canopy cover targets of the DCP Phase 2
	  ○ landscaping of carparking and street frontages
	  ○ tree pit deep soil provisions on verges
	  ○ tree protection measures consistent with the arborist report
	  ○ details of tree species, locations and canopy heights
	  ○ root barrier protection for underground services
	  ○ landscape treatments surrounding the padmount substation
	  ○ planting design will be informed by the Cumberland Plain ecological community
	• seasonal swales are present in the landscape design, mirroring the natural processes that water takes
	• landscape irrigation will be provided from rainwater harvested from the roof
	• porous pavement reduces the urban heat island effect as water can absorb into the pavement and reduces solar reflectiveness from the pavement
	• weed management measures will be included as part of the CEMP for the development
	• ongoing management of weeds at the site will form part of operational management

Issue	Mitigation measures

	• pest management techniques will be reviewed and implemented during the construction and post construction phase
	• appropriate light mitigation measure will be provided at detailed design to ensure light spill doesn't unreasonably disturb wildlife
	• the detailed design of the development will incorporate deep soil measures and canopy trees including:
	  ○ minimum tree canopy target 25% site area
	  ○ minimum deep soil comprising 15% of the site area
	  ○ at least two medium trees or one large tree planted in the deep soil area for every 400m^2 of site area
	• Where the landscaping within the First Building site does not achieve a no net loss of tree canopy cover, the Applicant will provide compensatory planting in the broader Precinct

Infrastructure and servicing	• an interim operating pump station (IOP) will be implemented to support initial sewage removal • the IOP will be decommissioned after the sewer infrastructure is installed from First Building to the Advanced Water Recycling Centre (AWRC) • the First Building will connect with the existing 150 mm Sydney Water main on Badgerys Creek Road • the building will also connect with future water supply infrastructure developed as part of the broader Masterplan including recycled water as part of the Upper South Creek AWRC to be operated by Sydney Water • easements have been established in accordance with the adjacency advice for the proposed padmount substation • further requirements will be negotiated with Endeavour energy at detailed design • during detailed design the Applicant will continue to engage with services providers to ensure utilities are provided to the Site • Bradfield Town Centre is investigating a centralised district facility of water recycling and reticulation. The building is designed to enable future connection
Airport Operations	• lighting will be designed to ensure it is not obtrusive and does not impact airport operations • mitigation methods to safeguard the airport from wildlife strikes will be developed at detailed design (landscape plan) • all equipment and machinery at the First Building will be tested and verified to ensure that the proposal does not unreasonably impact communications navigation and surveillance systems, which can pose a risk to pilots • appropriate colours and materials are to be proposed during detailed design to minimise any chance of reflecting • it is not anticipated that pollutants would be generated that would penetrate past the maximum ADH. If this does occur further approval would be sought under the Airports Act 1996 and Airports (Protection of Airspace) Regulations 1996
Smart Technologies	• smart technology will be fitted to ensure the building management systems are as efficient as possible as the scheme aims at achieving the living building challenge • technologies will be reviewed and implemented at the detailed design stage • integrated data loggers will be used to support the fine-tuning of the building to ensure the most efficient use of energy and water in operation