



## APPENDIX C

## MITIGATION MEASURES

SEARS	Potential Impact	Mitigation Measure	Reference
<p><b>Traffic and Transport</b></p>	<p>Impacts on road network from construction and operational phase.</p>	<p>A Construction Traffic Management Plan is to be prepared to outline the management arrangements and considerations for construction traffic management including:</p> <ul style="list-style-type: none"> <li>▪ Implementation of a site-specific Traffic Management Scheme.</li> <li>▪ Dedicated personnel on site to manage traffic flow in and out and around the site.</li> <li>▪ Dedicated routes to provide the shortest distance to and from the arterial road network.</li> <li>▪ On-site parking to be provided during the construction period.</li> <li>▪ Preparation of Traffic Guidance Scheme to demonstrate the construction route and manoeuvring in and out of the site.</li> <li>▪ All loading and unloading will occur wholly within the site boundary during approved work hours</li> <li>▪ The following protocols must be in place to minimise the impacts associated with the nominated construction vehicle routes:               <ul style="list-style-type: none"> <li>a. Site induction shall include procedures for accessing the site.</li> <li>b. Drivers shall adhere to the designated transport routes. Drivers shall be aware of pedestrians and cyclists in the vicinity of the site.</li> <li>c. Drivers shall be aware of existing sign posted speed limits.</li> <li>d. Site induction shall promote road safety and obey the NSW road rules at all times.</li> <li>e. Truck drivers must not drive under the influence of drugs and alcohol.</li> </ul> </li> <li>▪ Construction monitoring will occur to ensure the Contractor's Construction Management Plan is adhered to. This includes daily site inspections to ensure conditions are being met.</li> <li>▪ Encourage construction works to use public transport by:               <ul style="list-style-type: none"> <li>a. Provide an on-site tool drop-off and storage facility to allow trade-people to store their specific tools for the project.</li> <li>b. Inform workers during the induction training of the existing public transport services around the site (i.e. train services at Macquarie Park train station).</li> <li>c. Encourage workers to use public transport to access the site, where possible.</li> <li>d. Assist and encourage workers to carpool to access the site during the induction training and toolbox talks (including carpooling from other public transport hubs).</li> </ul> </li> <li>▪ A daily site inspection prior to the start of construction to ensure site conditions are in accordance with requirements and there are no hazards on site.</li> <li>▪ All site workers must undergo site induction training to ensure they understand site produces. The induction will include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, OH&amp;S, driver protocols and emergency procedures.</li> <li>▪ Implement a Controlled Parking Management Plan (CPMP) to manage and minimise parking demand during operation, incorporating the following measures:</li> </ul>	<p><b>Section 3.8.1</b> <b>Appendix FF</b></p>

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>– Controlled booking system for staff, visitors, and contractors to ensure efficient utilisation of available parking spaces.</li> <li>– Shared use of parking facilities across nearby NEXTDC sites, including the S1 facility (approximately 400 m walking distance) and S2 facility (approximately 500 m walking distance).</li> <li>– Promotion of public transport use for staff and visitors attending events, capitalising on the site's excellent accessibility to reduce private vehicle dependency.</li> </ul>	
<b>Noise and Vibration</b>	Impacts on surrounding buildings from construction and operational phase	<p><u>Construction Noise and Vibration (General)</u></p> <ul style="list-style-type: none"> <li>▪ Preparation of a detailed Construction Noise and Vibration Management Plan (CNVMP) prior to the commencement of any works on site.</li> <li>▪ The CNVMP must identify all potentially impacted receivers, assess the potential noise and vibration impacts from the Project and provide details regarding how the impacts would be minimised through use of all feasible and reasonable mitigation measures. It must also contain procedures for handling complaints and compliance monitoring requirements.</li> <li>▪ Adherence to the standard approved working hours.</li> <li>▪ The location of stationary plant (concrete pumps, air-compressors, generators, etc.) as far away as possible from sensitive receivers</li> <li>▪ Using site sheds and other temporary structures or screens to limit noise exposure where possible.</li> <li>▪ The appropriate choice of low-noise construction equipment and/or methods (such as using bored piling instead of impact piling for example)</li> <li>▪ Modifications to construction equipment or the construction methodology or program where a noisy activity will mask a less noisy activity, or, at different times where more than one noisy activity will significantly increase the noise.</li> <li>▪ Carry out consultation with the community and surrounding building owners/occupants during construction including, but not limited to; advance notification of planned activities and expected disruption/effects, construction noise complaints handling procedures.</li> <li>▪ Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways to minimise noise.</li> <li>▪ Site managers to periodically check the site and nearby residences for noise problems so that solutions can be quickly applied.</li> <li>▪ Avoid the use of radios or stereos outdoors.</li> <li>▪ Avoid the overuse of public address systems.</li> <li>▪ Avoid shouting and minimise talking loudly and slamming vehicle doors.</li> <li>▪ Turn off all plant and equipment when not in use.</li> <li>▪ Community consultation with Foxtel building should be implemented. The community consultation should include advanced notification of planned activities and expected disruption/effects.</li> <li>▪ Subject to the above-described recommendations being incorporated, it is predicted that the potential construction noise and vibration impacts of the development can be appropriately managed.</li> </ul> <p>Specific mitigation measures - Foxtel/Sky News Building</p> <ul style="list-style-type: none"> <li>▪ Use low vibration-generating equipment and construction methods, such as bored piling instead of driven piling.</li> <li>▪ Reduce vibration output by adopting slower piling rates and limiting rock breaker tonnage.</li> <li>▪ Install temporary noise barriers between the construction site and Foxtel/Sky News building to shield sensitive areas.</li> <li>▪ Conduct mock-up testing of proposed construction methods prior to works to verify predicted impacts and refine mitigation strategy.</li> <li>▪ Continue targeted consultation with Foxtel/Sky News to identify vibration-sensitive equipment and adjust methods as required.</li> </ul>	<b>Section 3.8.1</b>  <b>Appendix P</b>

SEARS	Potential Impact	Mitigation Measure	Reference
		<p>Specific vibration mitigation measures - Metro</p> <ul style="list-style-type: none"> <li>▪ The construction method for the new building piles is proposed to be as bored piles. This is recommended as they are a 'low-vibration' construction method versus traditional vibratory or hammered pile types.</li> <li>▪ Selection and use of small sized vibratory rollers, or more preferably static or oscillating rollers, is recommended for any earthworks required between the FOH and the Metro station and to be informed by guidance in Table 12.</li> <li>▪ Vibration monitoring should be conducted near the Sydney Metro assets on the first reserve boundary during initial periods of use for each different vibration generating piece of equipment or other works that are identified to be a potential vibration risk especially when it occurs within 25 m horizontally from the Sydney Metro first reserve (note this distance includes works between the FOH and the Metro station and during the installation of the first rows of piles).</li> <li>▪ During the vibration monitoring for the Sydney Metro assets, a PPV of 10 mm/s at 4 Hz and above should be used as a guide value limit for transient vibration emissions and an adjusted PPV of 5 mm/s at 4 Hz and above should be used as a conservative vibration damage screening level (i.e. guide limit) for continuous vibration emissions. An alert level of 5 mm/s is recommended for monitoring and management purposes, whereby determination of the type of vibration (i.e. transient or continuous) should occur, and then appropriate mitigation measures be implemented.</li> <li>▪ The geotechnical team conducted a separate study [15] and developed a detailed vibration monitoring survey. The minimum criteria to be followed shall be those set by Sydney Metro. The geotechnical monitoring survey can be used as a reference, with the PPV criteria in their report subject to review based on monitoring results during the construction period.</li> </ul> <p><u>Operational Noise and Vibration</u></p> <ul style="list-style-type: none"> <li>▪ Select equipment with sound power levels no more than values as listed in Table 16 of the NVIA.</li> <li>▪ Plant roof screens and louvres should be incorporated as described in Figure 3 and Figure 4 of the NVIA.</li> <li>▪ Generators should be attenuated as per the recommendations provided in Table 15 of the NVIA.</li> <li>▪ Load banks and water-cooled chillers are to be contained within an acoustic enclosure.</li> <li>▪ Adoption of all other noise mitigation measures provided in Table 15.</li> </ul>	
<b>Air Quality</b>	Impacts of construction activities in relation to dust and human health at sensitive receptors	<ul style="list-style-type: none"> <li>▪ A dust and air quality management plan shall be prepared and implemented as part of the proposal's CEMP: <ul style="list-style-type: none"> <li>i. Potential sources of air pollution (such as dust, vehicles, odour transporting waste, plant and equipment) during construction.</li> <li>ii. Air quality management objectives consistent with any relevant published EPA guidelines.</li> <li>iii. Mitigation and suppression measures to be implemented, such as spraying or covering exposed surfaces, provision of vehicle clean down areas, covering of loads, street cleaning, use of dust screens, maintenance of plant in accordance with manufacturer's instructions.</li> </ul> </li> <li>▪ Maintain sufficient water content on the soil across the general construction footprint boundary to minimise dust impact from wind erosion.</li> <li>▪ Methods to manage works during strong winds or other adverse weather conditions.</li> <li>▪ A progressive rehabilitation strategy for exposed surfaces.</li> <li>▪ Explanation of when the air quality, suppression and management measures need to be applied, who is responsible, and how effectiveness will be assessed.</li> <li>▪ Community notification and complaint handling procedures, as required.</li> <li>▪ The following management measures shall be included as part of the Project's CEMP to minimise emissions to air from construction vehicles and site machinery:</li> </ul>	<b>Section 3.8.1</b> <b>Appendix O</b>

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ Implementation of a high standard of engine maintenance to minimise vehicle emissions.</li> <li>▪ A requirement for completion of pre-start vehicle checklists to make sure construction vehicles are in good working order.</li> <li>▪ Operation of standby generators during testing and maintenance should be minimised as far as practicable and should follow the prescribed testing regime assessed in this report.</li> <li>▪ Generator testing during routine maintenance should be undertaken under a load where emissions comply with the emission concentration limit for solid particles outlined in the relevant POEO (Clean Air) Standard of Concentration requirement for non-scheduled premises.</li> <li>▪ In the event of a loss of mains power, all practical measures should be taken to reduce the duration of the outage to ensure that standby generators operate for the least amount of time possible.</li> </ul>	
<b>Hazard and Risk</b>	Combustion of dangerous goods	<p><u>AS/NZ 4681-2000 Compliance</u></p> <ul style="list-style-type: none"> <li>▪ Back-up Li-ion batteries shall not be kept near substances with which they are incompatible and shall be kept away from sources of heat.</li> <li>▪ Back-up Li-ion batteries should be stored in rooms with no other substances and with no sources of heat.</li> </ul> <p>It is also recommended that the following be considered:</p> <ul style="list-style-type: none"> <li>▪ Back-up battery storage areas and the required fire safety measures associated with them should be considered in the overall fire safety strategy by the project fire engineer.</li> </ul> <p><u>AS IEC 62619-2023 Compliance</u></p> <ul style="list-style-type: none"> <li>▪ The Li-ion batteries shall be compliant with AS IEC 62619-2023.</li> </ul> <p><u>AS 1940-2017 Compliance</u></p> <ul style="list-style-type: none"> <li>▪ The static storage tanks shall be designed and constructed to be compliant with Category 3 tank requirements in accordance with AS 1692-2006 Steel tanks for flammable and combustible liquids.</li> <li>▪ The tank fill points shall comply with Clause 5.3, including 5.3.2 (d) Where practicable, the fill point for any tank containing a combustible liquid shall be outside. If it is inside, it shall be not more than 2 m from a building entrance useable by a tank vehicle, and shall not be in a boiler room, furnace room, or an elevated temperature area.</li> <li>▪ The day tanks located in the generator rooms on levels 03-08 have a capacity of 1000L, each shall comply with Clause 5.6.3.1.</li> <li>▪ The single skin diesel storage tanks installed on, level 00 in Building A and level 01 in Building B, shall comply with the following:               <ul style="list-style-type: none"> <li>i. Secondary containment shall be provided by the tank rooms having an FRL of 240/240/240 and complying with the provisions of clause 5.9.</li> <li>ii. The distance between horizontal tanks in the same tank room shall be at least 600 mm.</li> </ul> </li> <li>▪ “Fuel Tank Room” in Building A shows tanks arranged end-to-end. Compliance with 5.7.6 (c) Tanks shall not be arranged end-to-end unless the potential for end failure and the resulting exposure hazard has been taken into account when determining the tank’s location, shall be demonstrated in later design stages in the plans.</li> <li>▪ Secondary containment shall be adequately designed and constructed, to contain the entire contents of the primary tank. Each tank room contains three identical diesel storage tanks with a capacity of 110m<sup>3</sup> per tank.</li> <li>▪ Design of the tank room containment shall comply with Clause 5.8.3, Bunds and Compounds, design and construction requirements.</li> <li>▪ Note Clause 6.2.1(o) requires that design considerations shall take into account, fire resistance, where piping could be exposed to fire, when designing or installing any piping.</li> <li>▪ Generator rooms with service tanks shall be provided with at least one powder type extinguisher located within 10 m of the tank and 10L/s hydrant protection.</li> </ul>	<b>Section 3.8.1</b>  <b>Appendix S</b>

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ Each tank room shall be provided with: <ul style="list-style-type: none"> <li>i. Coverage to each tank from a hose reel and foam-making equipment complying with Clause 11.5.3, for use where the water supply is adequate; or</li> <li>ii. Two powder-type extinguisher per diesel tank.</li> </ul> </li> <li>▪ The maximum travel distance to access a fire extinguisher shall not exceed 15 m.</li> </ul> <p>It is also recommended the following mitigation measures be implemented:</p> <ul style="list-style-type: none"> <li>▪ The generator rooms be fire separated from adjoining areas.</li> <li>▪ Considerations of spill containment around fill points, to address regulation 357 of the WHS Regulation.</li> </ul> <p><u>FM Global Property Loss Prevention Compliance</u></p> <p>It is recommended the following mitigation measures be implemented with respect to Li-ion battery rooms:</p> <ul style="list-style-type: none"> <li>▪ Fire separation of the back-up battery storage rooms from adjoining areas.</li> <li>▪ Provide standoff distances of battery racks from walls, floor, ceiling and other batteries, refer FMDS 5-33 Clause 2.3.5; and</li> <li>▪ Provide adequate ventilation and sensors to ensure the combustible gas generated from a battery fire does not exceed the lower explosive limit (<b>LEL</b>). Mechanical ventilation to battery rooms at a rate of at least 0.3 m<sup>3</sup>/min/m<sup>2</sup> of floor area.</li> <li>▪ Provide sufficient water supply such that it is capable of providing sprinkler water and hose stream requirements for the duration of the fire event. The expected duration will depend on the number of racks in a single fire area. The fire area is comprised of a row or rows of racks where minimum separation is not provided in accordance with FMDS 5-33 Clause 2.3.5. The duration should be estimated as 45 minutes times the number of adjacent ESS racks.</li> <li>▪ No storage or other materials permitted in the battery rooms.</li> <li>▪ Back-up battery storage areas rooms and required fire safety measures should be considered in the overall fire safety strategy by the project fire engineer.</li> </ul> <p><u>AS 4214-2018 Compliance</u></p> <ul style="list-style-type: none"> <li>▪ Signage in accordance with AS 4214-2018, and</li> <li>▪ Mechanical ventilation sufficient to maintain the IG-541 volume below the NOAEL in the event of a cylinder release.</li> </ul> <p>It is recommended the following controls to be implemented in the cylinder stores to further reduce the risk associated with accidental discharge of a cylinder:</p> <ul style="list-style-type: none"> <li>▪ Locked entries with access restrictions;</li> <li>▪ Cylinder leak detection equipment;</li> <li>▪ Oxygen depletion alarms (audible and visual) be fitted in each cylinder store; and</li> <li>▪ Interlocks on doors to prevent entry in the event of oxygen depletion alarm triggering.</li> </ul> <p><u>WHS Regulation 2017</u></p> <ul style="list-style-type: none"> <li>▪ An outer warning placard shall be prominently displayed at workplace entrances where emergency services may enter in accordance with Regulation 349. The placard shall be clearly legible, separate from other signs and otherwise compliant with Schedule 13.</li> <li>▪ Placards shall be prominently displayed on or near the fire suppression system gas cylinder storeroom in accordance with Regulation 350. The placards shall be clearly legible, separate from other signs and otherwise compliant with Schedule 13.</li> </ul>	

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ A manifest of all Schedule 11 chemicals shall be prepared in accordance with Regulation 347 and Schedule 12 of the WHS Regulation.</li> <li>▪ SafeWork NSW shall be notified of pressurised gas storage exceeding manifest quantities in accordance with Regulation 348 of the WHS Regulation. • An emergency plan shall be prepared for the site and provided to Fire and Rescue NSW as per the requirements of Regulation 361 and Division 4 of Part 3.2 of the WHS Regulation.</li> </ul>	
<b>Infrastructure Requirements and Utilities</b>	High usage of water and electricity	<ul style="list-style-type: none"> <li>▪ High electrical demand impacting the surrounding HV distribution network. Mitigation would be to provide dedicated supply feeders from Zone substation currently being negotiated with supply authority.</li> <li>▪ High noise levels when testing or operating back-up generators. Mitigation will be to provide acoustic treated measure and assess against NSW Noise Policy for Industry.</li> <li>▪ Fuel spills when filling generators. Mitigation measure will be to design the tanks to meet AS1940 requirement.</li> <li>▪ Fire and explosion risks associated with the generators. Mitigation measure will be Generators and separation between associated fuel tanks will be designed in accordance with AS 1940,</li> <li>▪ Fire and explosion risks associated with the switching station. Mitigation measure will be HV switching station will be designed by a certified Level 3 ASP designer in accordance with relevant current version of Australian Standards and Industry Associations Standards and Guidelines. Switching station located secure lockable plantrooms meaning only approved personnel can access this area.</li> <li>▪ Air pollution when generators are operational. Mitigation measure will be two separate, HV electrical supply routes are proposed and so the probability of mains failure has been investigated for the electrical supply. Failure rates for a supply in this arrangement are extremely low meaning the generators will rarely be used. Generators will include specific emissions control measures to Australian EPA requirements.</li> <li>▪ Redundant telecoms supply. Mitigation measure will be that 4no. PoE telecommunications pathways are physically separated by a minimum of 20m to minimise risk of concurrent damage to multiple pieces of telecommunications infrastructure.</li> <li>▪ High demands reducing the capacity of the estate or precinct water and sewer networks. Mitigation measures to minimise the peak water demand on Sydney Water's potable water network, the preliminary water balance of the proposed site has been undertaken through the use of rainwater re-use tanks and the provision of fire and water storage tanks on site.</li> <li>▪ Overtopping of rainwater harvesting/water storage tanks. Mitigation measure water overtopping from the rainwater tanks will discharge to the stormwater system. Discharged water will not contaminate the surrounding environment as it will be from either mains supply or roof collected which has passed through water quality treatment features.</li> <li>▪ Spills/leakages from on-site storage of effluent during early stages of construction.</li> <li>▪ To reduce the water demand, the proposal will utilise rainwater stored within the 150,000-litre water tank. It is estimated that the rainwater reuse will reduce the potable water consumption by 15%.</li> <li>▪ The evaporative cooling system will only be turned on when the ambient temperature reaches 30 degrees Celsius. The cooling system will supply ambient air directly, without providing any form of cooling and hence not using water, when ambient temperature is less than 30°C. Further to this, to minimise water usage, the non-evaporated water will be recirculated from the sump to the pad to be evaporated. This recirculation process will occur until adequate evaporation process has taken place such that the concentration of solids within the sump water reaches six times the incoming water – achieving 6 cycles of concentrations.</li> </ul>	<b>Section 3.8.1</b> <b>Appendix T</b>
<b>Contamination</b>	Disturbance of contaminated soil and impacts on land, air, water, and users and occupants of the site.	<p>The additional contamination assessment provides the following recommendations:</p> <ul style="list-style-type: none"> <li>▪ Interim management of the site is to occur under an Asbestos Management Plan (AMP), until remediation occurs. The AMP is to be prepared by a SafeWork NSW Licensed Asbestos Assessor (LAA). We note that this was also a recommendation of the PSI.</li> <li>▪ A RAP is to be prepared to address the contamination issues identified at the site. The RAP is also to include a framework for the additional investigation (once access is available) to address the data gaps outlined in Section 9.3 of this report.</li> <li>▪ The site is to be managed, remediated and validated in accordance with the RAP and AMP.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix V,</b> <b>Appendix OO and</b> <b>Appendix QQ</b>

SEARS	Potential Impact	Mitigation Measure	Reference
		<p>The RAP outlines the following additional requirements:</p> <ul style="list-style-type: none"> <li>▪ A site validation report is to be prepared on completion of remediation activities and submitted to the consent authority to demonstrate that the site (or a particular development stage) is suitable for the proposed development.</li> <li>▪ A long-term EMP will also be required as part of the validation documentation process to outline the long-term management approach and requirements, in the event that contaminated material remains on-site.</li> <li>▪</li> </ul>	
<b>Biodiversity</b>	Potential impacts on biodiversity	<p><u>General:</u></p> <ul style="list-style-type: none"> <li>▪ Preclearance surveys should be undertaken prior to vegetation removal to identify any fauna.</li> <li>▪ Clearing protocols should be implemented (including installation of fencing around vegetation to be retained, no-go signage) to limit inadvertent clearing and to manage wildlife.</li> <li>▪ Ensure all contractors are inducted and understand where no-go areas are.</li> <li>▪ Complete regular inspections of fencing to ensure they are functional and fit for purpose.</li> <li>▪ Erect and maintain erosion and sediment controls to control the quality of water released from the site into the receiving environment.</li> <li>▪ Only conduct clearing and operation of machinery inside of typical work hours.</li> <li>▪ Consideration of directional and fauna sensitive lighting in the design of the building for use during operation. Conduct works during daylight hours.</li> <li>▪ Implement industry practice controls of dust at bulk earth works sites.</li> <li>▪ Erect and maintain temporary construction fencing to protect significant environmental features such as riparian zones.</li> <li>▪ Carry out site inductions to explain environmental significance of the subject land.</li> <li>▪ Contractor to ensure site is well maintained with adequate facilities for rubbish disposal.</li> <li>▪ Prevent litter occurring in retained vegetation on or adjacent to site.</li> <li>▪ Make provision for the ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on or adjacent to the subject land.</li> <li>▪ Delineate area of retained PCT to ensure protection.</li> </ul> <p><u>Mitigating prescribed impacts:</u></p> <ul style="list-style-type: none"> <li>▪ Preclearance surveys should be undertaken prior to removal vegetation to identify any trees containing nest or possum dreys.</li> <li>▪ A preclearance survey of part of the southern building where vent is located and external infrastructure within the subject land is recommended to ensure no microbat species are present prior to demolition.</li> <li>▪ An ecologist to be present to supervise removal of nonnative vegetation and care and relocation of fauna and habitat (if present).</li> <li>▪ Stop-work measures if fauna species are observed within buildings.</li> <li>▪ If microbats are present in buildings, consider preparation of compensatory habitat plan and provision of nest boxes. Follow clearance protocols for any nests or dreys encountered in the planted vegetation to be removed. Garden vegetation removed during construction will be supplemented with the installation of landscaping areas on the northern and eastern sides of the site.</li> <li>▪ Standard sediment and erosion control (SEC) measures and dust control measures should be implemented.</li> </ul>	<p><b>Section 3.8.1</b></p> <p><b>Appendix II</b></p>

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ Train staff regarding the protection of retained vegetation within the subject land and within the indirect impact areas.</li> </ul>	
<b>Landscaping and Tree removal</b>	Tree removal and impacts to retained trees	<p><b>General Tree Protection Specification</b></p> <p><u>Appointment of Project Arborist</u></p> <ul style="list-style-type: none"> <li>▪ A Project Arborist shall be engaged prior the commencement of work on-site and monitor compliance with the protection measures. The Project Arborist shall inspect the tree protection measures and Compliance Certification shall be prepared by the Project Arborist for review by the Principal Certifying Authority prior to the release of the Compliance Certificate.</li> <li>▪ The Project Arborist shall have a minimum qualification equivalent (using the Australian Qualifications Framework) of Level 5 or above in Arboriculture.</li> </ul> <p><u>Compliance</u></p> <ul style="list-style-type: none"> <li>▪ Contractors and site workers shall receive a copy of these specifications a minimum of 3 working days prior to commencing work on-site. Contractors and site workers undertaking works within the Tree Protection Zone shall sign the site log confirming they have read and understand these specifications, prior to undertaking works onsite.</li> </ul> <p>The Project Arborist shall undertake regular site inspections and certify that the works are being undertaken in accordance with this specification.</p> <ul style="list-style-type: none"> <li>▪ Compliance Documentation shall be prepared by the Project Arborist following each site inspection. The Compliance Documentation shall include documentary evidence of compliance with the tree protection measures and methods as outlined within this Specification. Upon the completion of the works, a final assessment of the trees shall be undertaken by the Project Arborist and future recommended management strategies implemented as required.</li> </ul> <p><u>Tree Removal</u></p> <ul style="list-style-type: none"> <li>▪ The trees to be removed shall be removed prior to the establishment of the tree protection measures. Tree removal works shall be undertaken in accordance with the Workcover Code of Practice for the Amenity Tree Industry (1998). Tree and vegetation removal shall not damage the trees to be retained.</li> </ul> <p><u>Tree Protection Zone</u></p> <ul style="list-style-type: none"> <li>▪ The trees to be retained shall be protected prior and during construction from activities that may result in an adverse effect on their health or structural condition. The area within the Tree Protection Zone (TPZ) shall exclude the following activities, unless otherwise stated:-               <ol style="list-style-type: none"> <li>i. • Modification of existing soil levels, excavations and trenching</li> <li>ii. • Mechanical removal of vegetation</li> <li>iii. • Movement of natural rock</li> <li>iv. • Storage of materials, plant or equipment or erection of site sheds</li> <li>v. • Affixing of signage or hoarding to the trees</li> <li>vi. • Preparation of building materials, refueling or disposal of waste materials and chemicals</li> <li>vii. • Lighting fires</li> <li>viii. • Movement of pedestrian or vehicular traffic</li> <li>ix. • Temporary or permanent location of services, or the works required for their installation</li> <li>x. • Any other activities that may cause damage to the tree</li> </ol> </li> </ul> <p><u>Tree Protection Fencing</u></p>	<b>Section 3.8.1</b>  <b>Appendix CC</b>

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ TPZ fencing shall be located at the perimeter of the TPZ. Where TPZ areas overlap, TPZ fencing may be combined to form a single larger TPZ area. The exact location of the fencing shall be confirmed through consultation between the Head Contractor/Project Manager and the Project Arborist prior to the commencement of works.</li> <li>▪ Fencing may be setback to allow for demolition/construction access and for the installation of pavements only where appropriate ground protection is installed and approved by the Project Arborist. As a minimum, the Tree Protection Fence shall consist of 1.8m high wire mesh panels supported by concrete feet. Panels shall be fastened together and supported to prevent sideways movement. The tree shall not be damaged during the installation of the Tree Protection Fencing. Refer to Typical Tree Protection Details (Appendix 3).</li> </ul> <p><u>Site Management</u></p> <ul style="list-style-type: none"> <li>▪ Materials, waste storage, and temporary services shall not be located within the TPZ.</li> </ul> <p><u>Scaffolding</u></p> <ul style="list-style-type: none"> <li>▪ Where possible, scaffolding shall not be located within the TPZ. Scaffolding shall not be in contact with the tree.</li> <li>▪ As necessary, this shall be achieved by erecting scaffolding around branches. Branches shall be tied back and protected as deemed necessary by the Project Arborist. Refer to Typical Tree Protection Details (Appendix 3).</li> </ul> <p>8.0 Works within the Tree Protection Zones</p> <ul style="list-style-type: none"> <li>▪ In some cases works within the TPZ may be authorized by the determining authority. These works shall be supervised by the Project Arborist. When undertaking works within the TPZ, care should be taken to avoid damage to the tree's root system, trunks and lower branches.</li> <li>▪ If roots (&gt;25mm<math>\phi</math>) are encountered during the demolition, excavation and construction works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Adjustment of final levels and design shall remain flexible to enable the retention of roots (&gt;25mm<math>\phi</math>) where deemed necessary by the Project Arborist.</li> <li>▪ Drilling/piling machinery shall be of a suitable size to not damage the tree's roots, trunk, branches and crown. No clearance pruning is permitted to allow for machinery access. Machinery shall work in conjunction with an observer to ensure that adequate clearance from trees is maintained at all times.</li> </ul> <p><u>Ground Protection</u></p> <ul style="list-style-type: none"> <li>▪ Where deemed necessary by the Project Arborist, machinery movements shall be restricted to areas of existing pavement or from areas of temporary ground protection such as ground mats or steel road plates. Refer to Typical Tree Protection Details.</li> </ul> <p><u>Trunk Protection</u></p> <ul style="list-style-type: none"> <li>▪ Where required by the Project Arborist, trunk protection shall be installed. Trunk protection shall be installed by wrapping padding (either carpet underlay or 10mm thick jute geotextile mat) around the trunk and first order branches to a minimum height of 2m. Timber battens (90 x 45mm) spaced at 150mm centres shall be strapped together and placed over the padding. Timber battens must not be fixed to the trees. Refer to Typical Tree Protection Details.</li> </ul> <p><u>Structure &amp; Pavement Demolition</u></p> <ul style="list-style-type: none"> <li>▪ Demolition of existing structures/pavement within the TPZ shall be supervised by the Project Arborist. Machinery is to be excluded from the TPZ unless operating from the existing slabs, pavements or areas of ground protection (refer to Section 9.0). Machinery should not contact the tree's roots, trunk, branches and crown.</li> <li>▪ The existing pavement shall be carefully lifted to minimise damage to the underlying soil profile (or sub-base materials) and to prevent damage to tree roots. Wherever possible, existing sub-base materials shall remain insitu.</li> <li>▪ When removing slab sections within TPZ, machinery shall work backwards out of the TPZ to ensure machinery remains on un-demolished sections of slab at all times. Wherever possible, footings or elements below grade shall be retained to minimise disturbance to the tree's roots.</li> </ul>	

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ Where deemed necessary by the Project Arborist, the structures shall be shattered prior to removal with a hand operated pneumatic/electric breaker.</li> <li>▪ If roots (&gt;25mmØ) are encountered during the demolition works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Where the Project Arborist determines that the tree is using underground elements (i.e footings, pipes, rocks etc.) for support, these elements shall be left in-situ.</li> </ul> <p><u>Underground Services</u></p> <ul style="list-style-type: none"> <li>▪ Underground service installation within the TPZ shall be supervised by the Project Arborist.</li> <li>▪ The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using either hydrovac or hand excavation methods with the services installed around/below roots (&gt;25mmØ, or as determined by the Project Arborist).</li> <li>▪ Alternatively, boring methods may be used for underground service installation where the installation depth is greater than 800mm below existing grade. Excavations for starting and receiving pits for boring equipment shall be located outside of the TPZ or located to avoid roots (&gt;25mmØ, or as determined by the Project Arborist).</li> </ul> <p><u>Excavations, Root Protection &amp; Root Pruning</u></p> <ul style="list-style-type: none"> <li>▪ Excavations and root pruning within the TPZ shall be supervised by the Project Arborist. Excavations within the TPZ shall be avoided wherever possible.</li> <li>▪ Excavations within the TPZ shall be undertaken by hand or using hydro vacuum excavation methods (or similar approved device) to protect tree roots. If there is any delay between excavation works and backfilling, exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with a 10mm thick jute mat. The mat shall be kept in a damp condition at all times.</li> <li>▪ Hand excavation and root pruning shall be undertaken along the excavation line prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots from excavation equipment. Roots (&gt;25mmØ) shall be pruned by the Project Arborist only. Roots (&lt;25mmØ) may be pruned by the Principal Contractor. Root pruning shall be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears.</li> <li>▪ No over-excavation, battering or benching shall be undertaken beyond the footprint of any structure unless approved by the Project Arborist.</li> <li>▪ Damaged roots shall be pruned behind the damaged tissues with the final cut made to an undamaged part of the root.</li> </ul>	
<b>Ecologically Sustainable Development</b>	Achieving a high level of ESD	<p><u>Electricity</u></p> <ul style="list-style-type: none"> <li>▪ Minimum 5-star NABERS Energy rating, with a 5.5-star stretch target</li> <li>▪ Cooling towers, using heat exchangers on the water side that use cooling directly from cooling tower to reduce use of chillers and using economiser on the air side.</li> <li>▪ Envelope design using insulation, high performance selective glazing and external shading on appropriate elevations to achieve Section J envelope minimum compliance, balanced with allowing daylight into office spaces to reduce the reliance on artificial lighting.</li> <li>▪ Efficient LED lighting throughout.</li> <li>▪ Solar photovoltaic generation across rooftop areas where are is available.</li> <li>▪ A battery energy storage system for peak energy shifting of PV generated power.</li> <li>▪ Mixed mode ventilation to office spaces to reduce the reliance on mechanical heating and cooling.</li> <li>▪ Provision of EV charging stations.</li> <li>▪ Metering and monitoring of energy consumption.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix N</b>

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ High albedo materials to reduce Heat Island Effect, including high ‘Solar Reflectance Index’ ‘cool roof’ cladding materials and paving.</li> </ul> <p><u>Water</u></p> <ul style="list-style-type: none"> <li>▪ Rainwater collection, for cooling tower water top-up and irrigation.</li> <li>▪ Cooling tower capture for re-use.</li> <li>▪ Water treatment measures to improve the number of cycles, thereby reducing cooling tower discharge.</li> <li>▪ Efficient fixtures and fittings with high WELS ratings.</li> <li>▪ Use of native low water need species in landscaping.</li> <li>▪ Consideration of stormwater and/or greywater harvesting for irrigation and passive site cooling.</li> <li>▪ Prioritise permeable finishes and paving.</li> </ul> <p><u>Resources and Waste</u></p> <ul style="list-style-type: none"> <li>▪ Structural optimisation considering dematerialisation against material carbon impacts and local availability, aiming to develop a Design for Disassembly strategy.</li> <li>▪ Consideration of low carbon, high Portland cement replacement concrete and/or potentially carbon neutral certified concrete for concrete elements, arc furnace produced steel, high recycled content lower embodied carbon aluminium for glazing systems.</li> <li>▪ Independently reviewed whole-building Life Cycle Assessment of embodied carbon and other materials impacts.</li> <li>▪ Provision of on-site separation of waste streams to maximise diversion from landfill.</li> <li>▪ Development of a construction and demolition waste management plan, detailing all major waste streams generated, including disposal and diversion rates.</li> </ul>	
<p><b>Aboriginal Heritage</b></p>		<p>Consultation with RAPs should continue until the finalisation of the proposed development to ensure the opportunity for community input.</p> <p>Should any archaeological deposits be uncovered during any site works within this portion of the subject area an unexpected finds protocol will be implemented. The protocol is as following:</p> <ul style="list-style-type: none"> <li>▪ All works within the vicinity of the find must immediately stop. The find must not be moved ‘out of the way’ without assessment. The find must be cordoned-off and signage installed to avoid accidental impact.</li> <li>▪ The site supervisor or another nominated site representative must contact either the project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist.</li> <li>▪ The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design and archaeological investigation/salvage methodology and registration of the find with the Aboriginal Heritage Information Management System (AHIMS).</li> <li>▪ Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken.</li> <li>▪ Reporting may need to be prepared regarding the find and approved management strategies.</li> <li>▪ Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW.</li> </ul> <p>In the unlikely event that human remains are uncovered during any site works, the following protocols must be undertaken:</p> <ul style="list-style-type: none"> <li>▪ All works within the vicinity of the find must immediately stop. The find must be cordoned-off and signage installed to avoid accidental impact.</li> </ul>	<p><b>Section 3.8.1</b></p> <p><b>Appendix W</b></p>

SEARS	Potential Impact	Mitigation Measure	Reference
		<ul style="list-style-type: none"> <li>▪ The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555).</li> <li>▪ The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist.</li> <li>▪ Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives.</li> <li>▪ Works are not to recommence until the find has been appropriately managed.</li> </ul>	
<b>Waste</b>	Waste associated with the construction of the data centre	<ul style="list-style-type: none"> <li>▪ Where possible, all demolition and construction materials would be recycled either on-site through reuse or offsite at a licensed facility. Waste would be transported and disposed of offsite by a licensed contractor to a licensed landfill facility. Similarly, recyclable and non-recyclable materials generated during operation would be collected and disposed of by a licensed contractor.</li> <li>▪ To ensure waste is managed appropriately, Multiplex will develop a detailed project specific construction waste management plan (<b>CWMP</b>) for the construction stage prior to commencement of construction. An Operational Waste Management Plan (<b>OWMP</b>) suitable for presenting to building users will also be developed and implemented and will include information relevant to both the initial occupation and ongoing management of the building and also the strategy for communicating the plan to relevant staff and stakeholders.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix BB</b>
<b>Ground and Water Management</b>	Impacts of construction stormwater, sediment and site run-off	<ul style="list-style-type: none"> <li>▪ Additional geotechnical investigations following demolition depending on the bearing pressures adopted, including obtaining samples for CBR testing.</li> <li>▪ Deep cored boreholes to below the tunnel invert levels to satisfy Sydney Metro requirements.</li> <li>▪ Additional investigations, monitoring and analysis to address Water NSW/NRAR requirements.</li> <li>▪ Analysis of potential retention system deflections for both Lane Cove Road and the Sydney Metro, depending on Council/TfNSW/Sydney Metro requirements.</li> <li>▪ Vibration monitoring at least during initial bulk excavation using rock hammers.</li> <li>▪ Nominal inspections during piling for the retention system to confirm founding conditions.</li> <li>▪ Regular groundwater observations during and on completion of excavation.</li> <li>▪ Witnessing installation and proof testing of anchors.</li> <li>▪ Inspection of footing excavations and pile drilling, possibly including spoon testing and additional cored boreholes at specific pile locations depending on the design bearing pressures adopted.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix AA</b>
<b>Flooding</b>	Potential Flood Impacts on the site and its surrounds	<ul style="list-style-type: none"> <li>▪ Existing grades and elevations are to be maintained along proposed Road 13, and raised closer to the proposed building, proving flood immunity from flows on Waterloo Road.</li> <li>▪ Proposed landscaping levels are to be maintained adjacent to Lane Cove Road, which are raised above the PMF event's surface water levels, protecting the proposed data centre, and basement, from any inundation during the critical PMF event.</li> <li>▪ As flooding is known to affect access via Waterloo Road and Epping Road, a more detailed Flood Emergency Management Plan should be developed for the site to inform of appropriate evacuation or shelter-in-place procedures during severe events.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix Q</b>
<b>Stormwater Management</b>	Potential impacts of stormwater on site and surrounding sites	<ul style="list-style-type: none"> <li>▪ On site stormwater detention to reduce the rate of discharge of stormwater from the site to an acceptable level in accordance with the DCP.</li> <li>▪ On site stormwater quality treatment to mitigate the impact of the site on downstream water quality.</li> <li>▪ Erosion and sediment control measures during construction to mitigate downstream impacts on water quantity and quality</li> <li>▪ Adequate batter slopes and shoring analysis for bulk excavations.</li> <li>▪ Proof rolling of subgrades after excavation to achieve adequately compacted soil.</li> <li>▪ Design of pavements accounting for strengthened subgrade CBR values via the implementation of the parameters set out by JK Geotechnics.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix R</b> <b>Appendix U</b>

SEARS	Potential Impact	Mitigation Measure	Reference
<b>Non-Aboriginal Heritage</b>	Potential negative impact on unknown archaeological finds	<p>If any archaeological deposits or features are unexpectedly discovered during any site works, the following steps must be carried out:</p> <ul style="list-style-type: none"> <li>▪ All works within the vicinity of the find must immediately stop. The find must not be moved 'out of the way' without assessment. The find must be cordoned-off and signage installed to avoid accidental impact.</li> <li>▪ The site supervisor or another nominated site representative must contact either the project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist.</li> <li>▪ The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design and archaeological investigation/salvage methodology and notification of the discovery of a relic to Heritage NSW in accordance with S.146 of the Heritage Act 1977.</li> <li>▪ Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken.</li> <li>▪ Reporting may need to be prepared regarding the find and approved management strategies.</li> <li>▪ Works in the vicinity of the find would only recommence upon receipt of approval from Heritage NSW.</li> </ul> <p>In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:</p> <ul style="list-style-type: none"> <li>▪ All works within the vicinity of the find must immediately stop. The find must be cordoned off and signage installed to avoid accidental impact.</li> <li>▪ The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555).</li> <li>▪ The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist.</li> <li>▪ Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives.</li> <li>▪ Works are not to recommence until the find has been appropriately managed.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix X</b>
<b>Social Impact</b>	Potential positive and negative social impacts associated with the proposal	<p><u>Local and regional employment and training opportunities during operation</u></p> <ul style="list-style-type: none"> <li>▪ Consider exploring partnerships with local universities such as Western Sydney University to offer support to students studying and pursuing a career in IT, project management, and other relevant fields (e.g. internships, placements, traineeships, mentor programs or other support).</li> <li>▪ Consider exploring partnerships with local schools to provide opportunities to introduce students and young people to the field of IT, such as the NEXTDC program provided in FY23 which included several Year 10 interns spending the week at NEXTDC to gain insight and experience of data centre operations.</li> </ul> <p><u>Employment and training opportunities during construction</u></p> <ul style="list-style-type: none"> <li>▪ Increase Consider developing an employment plan which includes measures to encourage the procurement of local construction companies.</li> <li>▪ Consider establishing ongoing partnerships with local TAFE institutes to connect local apprentices and trainees with placements during construction.</li> </ul> <p>Noise and vibration impacting business and service operations - To mitigate the potential construction noise and vibration impacts, the NVIA recommends that a Construction Noise and Vibration Management Plan (<b>CNVMP</b>) is prepared prior to commencing works on site.</p> <p><u>Perceived impact on environmental values</u></p> <ul style="list-style-type: none"> <li>▪ Consider repurposing thermal output such as the model implemented in the Data Castle in Frankfurt, the United Kingdom's Telehouse North Two or the EcoDataCentre in Sweden. Reusing waste heat can be achieved by integrating data centres within energy grids, to connect them to a close district heating system, or even in agriculture with the connection to heated-water pipes for greenhouses for instance. Repurposed thermal output could also be also used to heat water for fish farms or swimming pools.</li> </ul>	<b>Section 3.8.2</b> <b>Appendix Y</b>

SEARS	Potential Impact	Mitigation Measure	Reference
		<p><u>Provision of a healthy work environment</u></p> <ul style="list-style-type: none"> <li>▪ Consider the implementation of a Health and Wellbeing Program (<b>HWP</b>) to encourage future staff to engage with healthy lifestyle choices. HWPs are described by the Australian Government as a way to address physical and mental health of staff focusing on lifestyle practices, organisational change, and occupational health and safety factors (Australian Government 2010).</li> <li>▪ Provide access to confidential counselling services or employee assistance programs (EAPS).</li> <li>▪ Consider conducting regular mental health awareness training, workshops or events.</li> </ul> <p><u>Potential impact to Aboriginal culture and heritage</u></p> <ul style="list-style-type: none"> <li>▪ The proponent should consider engaging a local Aboriginal artist or organisation to consult on the art to be incorporated and Connecting with Country design features included within the design.</li> </ul> <p><u>Contribution to the activation of Macquarie Park</u></p> <ul style="list-style-type: none"> <li>▪ Considering developing a scheduled programme of industry related events to be hosted in the Urban Plaza and consider forming partnerships with nearby stakeholders like Macquarie University.</li> <li>▪ Consider hosting pop-up retail providers in the urban plaza (e.g., café cart or food trucks), including developing a plan to ensure regular and consistent provision of these amenities.</li> </ul>	
<b>Greenhouse Gas Emissions</b>	Potential increase of greenhouse gas emissions from operational phase of data centre.	<p><u>Scope 1 (Direct Emissions):</u></p> <ul style="list-style-type: none"> <li>▪ Utilising low Global Warming Potential refrigerants and leak detection systems to minimise emissions from cooling systems.</li> <li>▪ Exploring Hydrated Vegetable Oil compatible generators as an alternative to diesel for backup power.</li> <li>▪ Optimising Uninterruptible Power Supply systems to reduce energy wastage and potential emissions during power conversion.</li> </ul> <p><u>Scope 2 (Indirect Emissions from Purchased Energy):</u></p> <ul style="list-style-type: none"> <li>▪ Implementing Power Purchase Agreements for renewable energy to reduce dependence on non-renewable power sources.</li> <li>▪ Installing on-site solar photovoltaic panels to generate renewable energy.</li> <li>▪ Enhancing energy efficiency through improved design and equipment, such as efficient lighting and potential future adoption of liquid cooling technologies.</li> </ul> <p><u>Scope 3 (Other Indirect Emissions):</u></p> <ul style="list-style-type: none"> <li>▪ Using low-carbon materials like concrete and steel and evaluating the use of copper busbars.</li> <li>▪ Reducing water consumption through technologies like sewer mining.</li> <li>▪ Promoting local procurement to minimise emissions related to material transport.</li> </ul> <p>The plan also includes a performance monitoring strategy and an offset scheme, to manage residual emissions through initiatives such as tree planting and renewable energy projects.</p>	<b>Section 3.8.1</b>  <b>Appendix</b>