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Safety in Design Report

Seniors Housing

40-46 Eighteenth Avenue, Sawtell NSW

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Document Prepared by:

**Brewster Murray Pty Limited**

ABN 63 804 200 206


Level 6, 99 York Street

Sydney NSW 2000

T +61 2 9299 0988

E a.geck@brewstermurray.com.au

W BrewsterMurray.com.au

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## 2 Introduction

### 2.1 Purpose of Report

This report and the associated process are intended to satisfy Section 274 of the Work, Health and Safety Act 2011, Section 21 (4) and also Clause 61(3) and Clause 295 of the Work Health and Safety Regulation 2017.

**WHERE APPLICABLE, A COPY OF THIS SAFETY IN DESIGN REPORT TO PROVIDED TO TENDERERS AND ASSET OWNER(S)**

### 2.2 Limitations

The report is prepared at building design stage and is intended to identify the major and reasonably foreseeable risks, which may impact on the safety of parties involved in:

- the construction of the structure or demolition of existing structures
- the use of the structure.
- the maintenance of the structure.
- any future modifications of the structure.
- the demolition of the structure.

### 2.3 Reference Legislation & Codes

- Work Health and Safety Act 2011
- NSW Work Health and Safety Amendment Act 2011
- NSW Work Health and Safety Regulation 2017
- National Construction Code of Australia
- Australian Standards
- SafeWork NSW codes of practice

### 3 Safety in Design Matrix

Safety in Design Matrix					
Item	What is the Risk or Issue (Identification of Hazards)	Likelihood of hazard or risk occurring + Phase:	Assess Risk of Injury or Degree of Harm arising from each Identified Hazard	Knowledge of hazard/risk and ways/availability to eliminate or minimise the hazard/risk	Any Significant Cost implications to eliminate or minimise the hazard/risks
01	Survey Reviewed e.g. power pole locations, services identification, DBYD	Low, providing adequate protection to statutory codes is implemented notably during construction Contractor to undertake all DBYD enquiries	Low providing Statutory Protection provided	Contractor to provide appropriate barriers/screening. For power line/poles adequate isolation/ protection	Standard Preliminary Costs for this type of development
02	Existing Trees – removed or protected	Low, Contractor to provide adequate protection and identify all Tree Protection Zones	Low based on adequate protection being provided	Contractor to provide adequate protection and identify all Tree Protection Zones. Comply with any arborist report and council conditions	Standard protection costs required as necessary
03	Section 10.7 Certificate reviewed. e.g. Flood Prone Land, Bush Fires Mine Subsidence	Medium-High Location is prone to flooding	Low based on compliance with flood report and action plan	Design levels for units in accordance with the flood report. Suitable flood resistant construction materials to be used.	No significant additional cost as no below-ground basement
04	Geotech Report & Conditions reviewed	Geo-technical and contamination. Refer Report	Potential unforeseen geo-technical conditions cost escalations during the construction phase.	Contractor to monitor geo-technical conditions and advise if any unexpected circumstances or engage geotechnical engineer to complete further site investigations. Contractor to engage experienced earthworks company and ensure all personnel have	Additional site investigations if conducted will incur additional cost.



				completed Safe Work Method Statement for their particular role.	
05	Site ground contamination assessment reviewed	Low for ground contamination based on Section 10.7 Certificate	Potential unforeseen soil contamination cost escalations during the construction phase.	Any asbestos or other contamination encountered in ground during works to be removed in accordance with statutory hazardous materials handling	Standard Preliminary Costs for this type of development for undertaking assessment
06	Asbestos	High probability of asbestos within existing dwellings	High	Removal of Asbestos during the demolition stage to comply with statutory hazardous materials handling	Minor additional cost for professional hygienist and disposal
07	Proximity to adjoining property/buildings/ fencing	Low – Protection of the adjoining ground level required.	Low	Low, but Contractor must provide adequate shoring and protection of footpath and all street services	Some additional cost with location of low height retaining walls on / near common side boundaries. Also, exact location and protection to all street services required.
08	Storm water Management incl. Overland Flows	Low/Medium with Overland flow – Contractor must monitor any severe weather warnings during construction, so any temporary measures are implemented to ensure site safety and control of storm water	Low/Medium - Environmental and public health and safety relating to management of stormwater runoff during construction phase.	Ensure that sedimentation controls are installed prior to commencing works on site.  Consider implications of overland rainwater flows during construction phase	Standard Preliminary Costs for this type of development.
09	ELECTRICAL SAFETY  - Earthing of electrical installations - Location of underground and overhead power cables - Protection of leads/cables - Number + location power points	Medium, ensure all services are disconnected and never work on equipment live to avoid Electrocutation.	Only qualified personnel to work on electrical equipment. Ensure all electrical equipment are tested and tagged. All electrical circuits to	Obtain all as-built information and DBYD enquires prior to doing any works.	No additional significant cost envisaged for safety component

	- Number + location lighting		be RCD protected in accordance with AS3000.		
10	<b>FIRE AND EMERGENCIES</b>  - Fire risks - Fire detection and fire fighting - Emergency routes and exits - Access for and structural capacity to carry fire tenders - Other emergency facilities	Low based on compliance with the BCA, relevant Australian Standards, and any Fire Engineering Reports.	Low/medium risk to occupants within the immediate parts of the building that are fire affected.	Ensure all required fire safety systems are maintained in accordance with relevant Australian Standards and certified annually to legislative requirements.	No additional significant cost envisaged for safety component
11	<b>MOVEMENT OF PEOPLE AND MATERIALS</b>  - Safe access and egress, including for people with disability - Traffic management - Loading bays and ramps - Safe crossings - Exclusion zones - Site security	Low/Medium The Contractor to comply with Authority Conditions of Approval. A full Site Construction Management Plan to be submitted for approval.	Risk that construction vehicles entering and leaving the site may cause disruption to traffic and pedestrian activities along street. Risk of injury to general public walking / travelling past the site during demolition / construction.	Ensure that a construction traffic management plan is prepared and implemented by the head contractor. Ensure that head contractor employee / staff to monitor vehicle access and egress at all times.	Standard Preliminary Costs for this type of development
12	Parking Areas	Low/Medium with regard to the traffic movement at completion.	Whilst potentially the degree of harm is high as it involves motor vehicles, it is still a standard controlled private parking environment	As necessary, install appropriate wheel stops/low kerbs, separate pedestrian access, provide sightlines and appropriate signage (e.g. speed limits, directional arrows, zebra crossings)	No additional significant cost envisaged for safety component above standard requirements.
13	<b>WORKING ENVIRONMENT</b>  - Ventilation for thermal comfort and general air quality and specific ventilation requirements for - Work to be performed on premises	Low/Medium, Navigation in poorly light areas	Ensure that lighting on site complies with AS1680, mechanical design complies with AS 1668.2 and	Contractor to ensure installation and construction comply with all relevant standards and codes.	No additional significant cost envisaged for safety component

	<ul style="list-style-type: none"> <li>- Temperature</li> <li>- Lighting including plant rooms</li> <li>-Acoustic properties noise control, e.g., noise isolation, insulation absorption</li> <li>- Seating</li> <li>- Floor surfaces to prevent slips/ trips</li> <li>- Space for occupants</li> </ul>		acoustic report, even during construction phase.		
14	<p>PLANT</p> <ul style="list-style-type: none"> <li>- Tower crane locations, loading and unloading</li> <li>- Mobile crane loads on slabs</li> <li>- Plant and machinery installed in a building or structure</li> <li>- Materials handling plant + equipment</li> <li>- Maintenance access to plant + equip.</li> <li>- The guarding of plant and machinery</li> <li>- Lift installations</li> </ul>	Low/Medium, manual transporting components such as ducting, pipe work, equipment, which may cause physical and musculoskeletal injuries.	Ensure all items are lifted in accordance with known safe lifting techniques. Use mechanical handling equipment, e.g. lifts. Implement OH&S procedures in accordance with the standards. Wear appropriate PPE.	Contractor to ensure all affected staff are wearing appropriate PPE before work takes place. Contractor to develop JSA's for manual handling works. Contractor to utilise lifting equipment.	No additional significant cost envisaged for safety component
15	<p>AMENITIES AND FACILITIES</p> <p>Access to various amenities and facilities such as storage, first aid rooms/sick rooms, restrooms, meal &amp; accommodation areas and drinking water</p>	Low based on Contractor complying with Statutory Conditions and Requirements including the WH&S Act and Regulation	Risk and Degree of harm minimal as the Contractor would provide these standard requirements	Contractor to provide all statutory amenities /facilities for a construction site	Standard Preliminary Costs for this type of development – but costs to be allowed for possible storage/sheds over footpath as space is limited on site (subject to Statutory approvals)
16	<p>EARTHWORKS</p> <ul style="list-style-type: none"> <li>- Excavations (for example, risks from earth collapsing or engulfment)</li> <li>- Location of underground services</li> <li>- Use of heavy machinery in the cut and fill of the site</li> </ul>	Low based on Contractor complying with Statutory Conditions and Requirements including the WH&S Act and Regulation	Risk and Degree of harm minimal as long as the Contractor produces and complies with Safe Work Method Statement.	<p>The Contractor to ensure the following as follows:</p> <ul style="list-style-type: none"> <li>i) All sub-consultants are fully accredited and experienced with all excavation work.</li> <li>ii) Fully qualified and experienced Geotech Eng. and Struct. Eng. review/advise with all aspects of the excavation</li> </ul>	No additional significant cost envisaged for safety component



				<p>iii) All underground services are accurately located and protected</p> <p>iv) All necessary safety barriers, shoring and dewatering equipment are provided</p> <p>v) Safe Work Method Statements are to be produced for each task and are available for review on site</p>	
17	<p>STRUCTURAL SAFETY</p> <ul style="list-style-type: none"> <li>- Erection of steelwork or concrete frameworks</li> <li>- Load bearing requirements</li> <li>- Stability + integrity of the structure</li> <li>- Demolition incl. hazardous + contaminated materials</li> <li>- Erection of post tensioned slabs</li> </ul>	Low/Medium	Low	<p>Contractor to ensure full compliance with the WHS Act/Regulations, Authority Codes/Conditions and Aust. Standards</p> <p>Contractor to ensure an experienced qualified structural engineer is notified and inspects all structural component for full compliance to the construction documentation and statutory codes.</p> <p>Removal &amp; Disposal of demolition/waste incl. hazardous/ contaminated materials to be undertaken within strict compliance of all codes/standards incl. current AS2601.</p> <p>All form workers, steel fixers/ contractors on the job shall be experienced or supervised by an experienced foreman. All contractors should have appropriate training for their role and be aware of the Safe Work Method Statement.</p>	<p>No additional significant cost envisaged for safety component</p> <p>Standard type detailing for double brick construction used.</p>
18	<p>MANUAL TASKS</p> <ul style="list-style-type: none"> <li>- Methods of material handling</li> <li>- Accessibility of material handling</li> <li>- Loading docks and storage facilities</li> <li>- Workplace space and layout to prevent musculoskeletal disorders, including facilitating use of</li> <li>- Mechanical Aids</li> <li>- Assembly and disassembly of pre-fabricated fixtures and fittings</li> </ul>	Contractor to advise	Contractor to advise	Contractor to advise	Contractor to advise

19	<p>FALLS PREVENTION</p> <ul style="list-style-type: none"> <li>- Guardrails / Balustrades</li> <li>- Window heights and cleaning</li> <li>- Anchorage points for building maintenance and cleaning</li> <li>- Access to working spaces for construction, cleaning, maintenance and repairs</li> <li>- Scaffolding</li> <li>- Temporary work platforms</li> <li>- Roofing materials and surface finish including fragility, slip resistance and pitch</li> </ul>	<p>Low/Medium – (Construction Phase) Slips, Trips, Falls during construction phase.</p> <p>Low (On Completion) Slips, Trips, Falls by final occupants.</p>	<p>Potential risk of falling / tripping into footing excavations and generally around site during construction phase.</p> <p>Poor design leads to increased risk to occupants including selection of materials, detailed design solutions for changes in levels and at thresholds to doors and hobs etc.</p>	<p>Ensure that all excavated areas are clearing defined with safety barriers to prevent access except by defined safe path.</p> <p>Compliance with NCC and relevant Australian Standards noted in Drawings/Specifications</p>	<p>Standard costs for construction preliminaries and on-going maintenance safety provisions incorporated into the scope of works</p>
20	<p>SPECIFIC RISKS</p> <ul style="list-style-type: none"> <li>- Confined spaces</li> </ul>	<p>Low – based on properly qualified persons undertaking works and maintenance</p>	<p>Construction and maintenance of OSD tank - Risk of inundation / build-up of noxious gases</p>	<p>Ensure that works are undertaken by properly qualified workers for confined spaces.</p> <p>Access hatched for OSD to be provided at suitable spacing to allow maintenance without entering tank.</p>	<p>Standard costs for construction preliminaries and on-going maintenance</p>
21	<p>NOISE EXPOSURE</p> <p>Exposure to noise from plant or from surrounding area</p>	<p>Low – based on all equipment being tested and noise levels recorded by an Acoustic Consultant to ensure compliance Refer Acoustic Report</p>	<p>Risk and Degree of harm minima based on observing all safety regulations for the monitoring and operation of any equipment</p>	<p>Compliance with statutory noise controls for plant equipment is incorporated in the design and Contractor to provide all compliance certificates for the technical testing on completion of works</p>	<p>Standard costs for construction including provision of testing/reporting on completion</p>