



Stanton Dahl Architects

Stanton Dahl Architects Pty Ltd
18-20 Oxford Street, Epping NSW 2121
PO Box 833, Epping
NSW 1710, Australia
Tel +61 2 8876 5300

design@stantondahl.com.au
stantondahl.com.au

Safety in Design Report June 2023

70-72 Gordon Ave, Sough Granville, NSW
Proposed General Housing Development (8 x Townhouses)

Safety In Design

Project General Housing Development
Job Number 2873.23
Date June 2023
Location 70-72 Gordon Ave, South Granville, NSW

Contents

- 1.00 Introduction**
 - 1.01 Purpose of Report
 - 1.02 Process for Architectural Safety in Design
 - 1.03 Limitations
 - 1.04 Reference Legislation and Codes
- 2.00 Safety in Design Reports**
 - 2.01 Architectural
 - 2.02 Structural / Civil
 - 2.03 Electrical / Hydraulic / Mechanical
 - 2.04 Landscape

1.00 Introduction

1.01 Purpose of Report

This report and the associated processes are intended to satisfy the Work, Health and Safety Act 2011 Section 22 and also Clause 61(3) and Clause 295 of the Work Health and Safety Regulation 2011.

1.02 Process for Architectural Safety in Design

The adopted process for this report is based upon Workcover NSW's Safety in Design Tool that addresses our obligations under Safety in Design (SiD) Legislation by a series of CHAIR reviews. CHAIR stands for Construction Hazard Assessment Implication Review.

Each CHAIR has a list of guidewords and associated risk issues that are to be identified, assessed, and then managed through either elimination or control. Any unique risks that the design raises in addition to any generic risks that are identified in the pro forma checklists are to be addressed.

- Hazard Identification: Requires the systematic identification of all potential architectural related hazards that could result in injury or illness throughout the lifecycle of the building or structure.
- Risk Assessment: Requires an assessment and prioritisation of each identified risk. Risk's are assessed against the following criteria:
 - Likelihood of Hazard Occurring (H – High, expected to occur; M – Medium, may occur; L – Low, unlikely to occur)
 - Implication if Hazard Occurs (H – High, serious injury or death; M – Medium, significant injury; L – Low, inconvenience, possible injury)
 - Level of Risk (1: Very Low (LxL); 2: Low (LxM or MxL); 3: Medium (MxM); 4: High (MxH or HxM); 5: Very High (HxH).....levels 3, 4 and 5 MUST be managed
- Risk Elimination or Control: Requires those risks rated Medium or higher to be eliminated or If the risk cannot be eliminated, use measures to reduce the risk as far as 'reasonably practicable'.

1.03 Limitations

The report 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

1.04 Reference Legislation and Codes

Work Health and Safety Act, 2011; NSW Work Health and Safety Amendment Act 2011; NSW Work Health and Safety Regulation 2011; National Construction Code of Australia; Australian Standards

2.00 Safety in Design Reports

Safety In Design

Project	Proposed General Housing	CHAIR 2
Job Number	2873.23	Revision 01
Date	June 2023	
Location	70-72 Gordon Ave, South Granville, NSW	

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
Site Considerations						
1	People and Equipment	Other property's neighbouring the site will be occupied during construction	People will be in the immediate vicinity of the site, including the access to the site Likelihood = M	Consequences = M	Secure site compound to be created; All construction related traffic is to be monitored entering and exiting the site and site access; Designated pedestrian pathways are to be created	Removal of the risk is not fully possible given the nature of the surrounding properties as occupied homes
2	Traffic	Project site is immediately adjacent some regularly used internal roads	Traffic in close proximity to construction site and associated hazards Likelihood = M	Consequences = M	Secure site compound to be created; All construction related traffic is to be monitored entering and exiting the site and site access; Designated pedestrian pathways are to be created	Removal of the risk is not fully possible

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
Toxicity						
3	Precautions	Possible presence of lead and/or asbestos on the site and in the ground	Existing soil condition is unknown but is in an established area of Sydney known to have buried lead and/or asbestos Likelihood = L	Consequences = M	Excavation has been limited in the design; All industry practices to be followed in removal of asbestos	Removal of the risk is not fully possible
Environmental Impact						
4		Dust/Noise/Seepage	Both during construction and demolition there is risk of increased dust/noise/seepage from the site Likelihood = L	Consequences = L	All industry practices to be followed during these phases of the buildings lifecycle	Removal of the risk is not fully possible
Egress / Access						
5	No. of exit points	No of exit points	Must ensure that there are sufficient exit points Likelihood = L	Consequences = M	More than the required number of egress points included in design	Removal of the risk is not fully possible
6	Emergency egress, size	Size of emergency Egress	Must ensure that there are sufficient exit points left 'clear' and always operational Likelihood = L	Consequences = M	Required number of egress points included in design; Egress widths have been increased to reduce risk of anything blocking the exit	Removal of the risk is not fully possible; Occupants must ensure exits remain clear at all times

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
7	People and vehicle	Driveway passing bay and crossover in close proximity to letterboxes	Slow speed vehicle in close proximity to pedestrian on footpath Likelihood = M	Consequences = M	Wider landing provided to letterboxes for pedestrians to be clear of passing cars	Removal of the risk is not fully possible
8	People and vehicle	Shared driveway and pedestrian path	Slow speed vehicle in close proximity to pedestrian on footpath Likelihood = M	Consequences = M	Pedestrian waiting bays along the length of the driveway	Removal of the risk is not fully possible
9	Obstructions, lighting	Lighting	Risk that exit points will not be visible and readily usable in the event of an emergency Likelihood = M	Consequences = M	Emergency lights are to be installed to ensure visibility in the event of an emergency	Removal of the risk is not fully possible
Building Design						
10	Working at heights	Window Operation and Replacement	A number of 'highlight' windows are in areas that may require working at heights Likelihood = L	Consequences = H	Windows have been designed to be replaced from 'inside' the building	Removal of the risk is not fully possible
11	Confined space	Below Ground Tank	Risk of major leak; Working in confined spaces Likelihood = L	Consequences = M	Tank has been located in an area that can be accessed easily when empty (repairs)	Removal of the risk is not fully possible
12	Quality Assurance	Structural Engineering	Failure of pre-fabricated and site constructed structure Likelihood = L	Consequences = H	Construction must allow for construction loads and have a predictable sequence for its eventual demolition	Removal of the risk is not fully possible; Builder/Designer must beware of changing the design and not recording changes in the

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
						SiD report or WAE drawings
13	Maintenance	Cleaning Roof and Roof Void	Risk of working at heights associated with cleaning the roof and accessing the roof void Likelihood = M	Consequences = M	Certified roof access system is to be installed to the roof and the roof void to allow for safe access	Removal of the risk is not fully possible; safe work methods are to be employed when using roof access system
14	Falls	Retaining Walls and Elevated Decks	Risk of falling from heights and failure of elevated/retained structures Likelihood = L	Consequences = M	Balustrades to be installed; soft fall surfaces to be employed wherever possible	Removal of the risk is not fully possible; Balustrades to be checked at regular intervals
15	Falls	Raking Ceilings	Working at heights to replace lights and other ceiling mounted items Likelihood = L	Consequences = L	Safe work methods will need to be employed to work on the raking ceiling	Removal of the risk is not fully possible
Ease of Initial Construction						
16	Timing, Access	Sequencing	Construction and demolition activities imposing injury risk on surrounding properties Likelihood = M	Consequences = M	Nature of the building has been reduced to a series of small parts that can be sequenced by builder/demolition	Removal of the risk is not fully possible; workplace areas outside of the compound are inadequately defined

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
					teams; Close communication required with surrounding properties; Designer has designated a 'builders compound' which can also be used during demolition	
Building Materials						
17	Spills / Water	Slippery Floors	Risk of slip on wet surfaces Likelihood = H	Consequences = H	Slip resistant tiles and paints are specified by designer	Removal of the risk is not fully possible; wet cleaning of other surfaces with low slip resistance
18	Personnel Protection	Breathing Hazards	Risk of breathing hazards from VOC's and fine particles Likelihood = M	Consequences = H	Safe work methods are to be employed by construction/renovation/demolition teams; Low VOC materials specified by designer	Removal of the risk is not fully possible
19	Ventilation	Paints	Risk of VOC's associated with the paints that can be used Likelihood = M	Consequences = H	Safe work methods are to be employed by construction/renovation/demolition teams; Low VOC materials specified by designer	Removal of the risk is not fully possible

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
20	Ventilation	Glues	Risk of VOC's associated with the glues and adhesives that can be used Likelihood = M	Consequences = H	Safe work methods are to be employed by construction/renovation/demolition teams; Low VOC materials specified by designer	Removal of the risk is not fully possible
Environmental Conditions						
21	Flooding	Extreme Weather	Risk of flood and damage due to extreme weather Likelihood = M	Consequences = M	Standard materials have been employed in the design allowing easy replacement; Overland flow paths are designed to control direction of flood waters	Removal of the risk is not fully possible
22	Temperature	Temperature	Risk of extreme heat/cold in various seasons Likelihood = M	Consequences = M	Good passive controls including ventilation and solar control employed in design and abundant insulation to help reduce temperature differences inside the building	Removal of the risk is not fully possible
Utilities & Services						
23	Visibility / Slips / Trips	Lighting	Risk that insufficient light will be provided in certain critical areas; Working at Heights risks to replace lights Likelihood = L	Consequences = M	Additional 'backup' lights installed at critical areas including entry's, exits and areas where unrestrained falls can occur; Safe Work	Removal of the risk is not fully possible; maintenance will need to be regularly carried out

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
					Methods to be employed to replace lights/lamps on a regular basis; Maintenance to be regularly carried out on critical lighting	
24	Air / Water	Air	Risk of insufficient ventilation to the building Likelihood = L	Consequences = H	Designer has provided operable fenestration to all habitable spaces	Removal of the risk is not fully possible
25	Fuel / Electricity	Electricity	Risk of electrocution in the building Likelihood = H	Consequences = H	A safety switch is to be installed in the building	Removal of the risk is not fully possible
	Documentation					
26	Operations	Operations and Maintenance Manuals	Risk that operations and maintenance manuals are not thoroughly documented and handed over at end of the project Likelihood = L	Consequences = L	Operations and Maintenance Manuals to be thoroughly documented and handed over at end of each life cycle stage	Removal of the risk is not fully possible
27	Inspection / Testing	Inspection and Testing	Risk that required inspections and testing is not regularly completed Likelihood = M	Consequences = M	All inspections and testing is to be documented in the specification and by the builder and is to be regularly completed in accordance with documentation provided at handover of project;	Removal of the risk is not fully possible

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
					designer has located plant and equipment in easy to access places to facilitate inspections	
28	Emergency	Emergencies	Risk that an emergency may not have a clearly defined response Likelihood = M	Consequences = H	Emergency Drills and procedures are to be established during the construction/demolition and occupancy phases; Signage is to be provided around the building	Removal of the risk is not fully possible
29	Records / Reports	Records and Reports	Risk that records and reports will not keep abreast of changes during construction/occupancy of the building Likelihood = L	Consequences = M	Records for the building are to be updated with any change during the buildings lifecycle	Removal of the risk is not fully possible
Construction						
30	Sequence	Sequencing	Construction and demolition activities imposing injury risk on surrounding properties Likelihood = M	Consequences = M	Nature of the building has been reduced to a series of small parts that can be sequenced by builder/demolition teams; Close communication required with surrounding	Removal of the risk is not fully possible; workplace areas outside of the compound are inadequately defined

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
					properties; Designer has designated a 'builders compound' which can also be used during demolition	
31	Maintenance	Equipment requirements	Risk of injury associated with equipment being poorly maintained Likelihood = M	Consequences = H	All equipment to be regularly inspected	Removal of the risk is not fully possible
32	Heights / Dropped	Working at Heights	Risks associated with working at heights Likelihood = M	Consequences = H	Safe Work Methods are to be employed when working at heights; Safety equipment is to be used at all times	Removal of the risk is not fully possible
33	Heights / Dropped	Scaffolding	Risks associated with working at heights and items dropping from heights Likelihood = M	Consequences = H	Safe Work Methods are to be employed when working on and around scaffolds; temporary balustrade is to be installed to scaffolds; Safety equipment is to be worn at all times around scaffold	Removal of the risk is not fully possible
34	Size / Width	Confined Spaces	Risks associated with working in confined spaces Likelihood = M	Consequences = M	Designer has minimised the number of confined spaces associated with the building; Safe Work Methods are to be employed when working in confined spaces	Removal of the risk is not fully possible
Demolition						
35	PPE	Ease of demolition and other issues	Risk of injury associated with demolition of	Consequences = M	Safe work method statements are to be	Removal of the risk is not fully possible;

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
			building at end of life span Likelihood = M		prepared acknowledging and addressing this risk; Standard materials have been employed in the design allowing industry experience to be used to design appropriate demolition techniques; Demolition compound to be established around building during demolition	demolition compound may still result in poorly defined work zones outside of compound
Commission / Startup / Shutdown						
36	Requirements	Requirements	Risk that manufacturer requirements will not be employed by those commissioning, using, starting and stopping equipment Likelihood = L	Consequences = M	Manufacturer requirements to be followed by construction/occupant/demolition teams	Removal of the risk is not fully possible
37	Sequence	Sequencing	Risk that equipment could be installed or removed from the building in incorrect sequence resulting in injury or loss of life Likelihood = M	Consequences = M	Safe work method statements are to be prepared acknowledging and addressing this risk; designer has located plant and equipment in easy to access places; Work as Executed Drawings and Manuals to be kept up to date during lifecycle of building	Removal of the risk is not fully possible

No.	guideword	risk issue(s)	nature &/or causes of the risk (likelihood – l/m/h)	consequences (implication – l/m/h)	Safeguards and mitigation by designer	action(s) and residual risk
38	Inspection / Testing	Inspection	Risk that equipment is not regularly inspected Likelihood = M	Consequences = M	All equipment to be regularly inspected in accordance with documentation provided at handover of project; designer has located plant and equipment in easy to access places to facilitate inspections	Removal of the risk is not fully possible
Ergonomics						
39	Posture / manual handling	Posture and manual handling	Some large and heavy items are to be installed and used within the building Likelihood = L	Consequences = L	Corridor widths have been widened to allow lifting aids to be used within the building and minimise risks due to manual handling without assistance	Removal of the risk is not fully possible

SAFETY IN DESIGN REPORT

PROJECT: Multi Dwelling Housing Development

DATE: 02.06.2023

CLIENT: LAHC

OUR REFERENCE: 230291

ADDRESS: 70-72 Gordon Avenue, South Granville 2142

PROJECT STRUCTURE: Two- storey structures. Slabs on ground, lightweight framed first floors with sheet metal roofs and pergolas. Double brickwork party walls, brick veneer perimeter walls with timber framed internal walls.

Factors	Structural Risks/ Items	Construction Phase	Maintenance Phase	Demolition Phase	Mitigation	Comments to Contractor and Owners
Site Planning/Excavation	Damage of services during excavation	Perform Dial Before You Dig	-	-	-	Ensure care is taken in locating services prior to excavation
Rainwater/ On- site Detention Tank	Confined space	-	Maintain in accordance with Manufacturer Specs	-	-	-
Construction	Formwork failure during pour	Ensure formwork complies with AS 3610	-	-	-	Ensure formwork complies with standards
Construction	Masonry wall cracking	Ensure vertical articulation joints are provided. Ensure propped installed if required	-	-	-	Ensure wall in accordance with standards
Building Structure	Structural adequacy of structure	Works to be inspected and approved by structural engineer	Maximum loads on structure not to be exceeded	Care to be taken in removing	All structural elements to be documented by a structural engineer	-
Building Structure	Load bearing walls	-	Consult structural engineer prior to removal of walls	-	-	-

Greenview Consulting operates under Safe Work Australia's Code of Conduct for the design of structures. Under the Code of Conduct it is the client's responsibility to provide a copy of the structural risk and solutions register to the principal contractor. It is the principal contractor's responsibility to review the hazards and risks identified during the design process to ensure a safe workplace is maintained for the construction, maintenance and eventual demolition of the structure.

For & on behalf of Greenview Consulting,

Reviewed by:

A handwritten signature in blue ink, appearing to read 'A. McKerron'.

Alistair McKerron B.E., M.I.E.(Aust.), CP Eng., NPER no 2220277

Project Engineer

SAFETY IN DESIGN REPORT – ELECTRICAL/HYDRAULIC/MECHANICAL

PROJECT: Multi Dwelling Housing Development

DATE: 02.06.2023

CLIENT: LAHC

OUR REFERENCE: 230291

ADDRESS: 70-72 Gordon Avenue, South Granville 2142

Refer to drawings E01, M01 and H01 for further notes on safety in design.

Factors	Risks/ Items	Demolition Phase	Construction Phase	Maintenance Phase	Comments to Contractor and Owners
Site Planning	Electric Shock from live conductors	Locate and make safe any electrical supplies (both underground and overhead) on the site	Perform Dial Before You Dig	-	Locate and make safe any electrical supplies (both underground and overhead) on the site
Site Planning	Inground and existing services	Locate and make safe any existing services including but not limited to gas, water, sewer, storm water	Perform Dial Before You Dig	-	Coordinate disconnecting of electrical services with electrician. Use bonding straps on water disconnections.
Construction	Manual Work / Injury	-	- Use mobile lifting equipment to help in lifting and moving heavy objects where accessible - Coordinate in a team to lift heavy objects	-	Contractor to provide SWMS before any works
Construction	Fans - Electrocution	-	Supply and connection by licenced electrician only	Fan maintenance and electrical works by a licenced electrician only	Annual testing required, Contractor to provide SWMS before any works
Construction	External Areas	-	-	-	Construct in accordance with design

Construction	Equipment Installation Locations	-	-	-	Construct in accordance with design
Construction	Working at Height				<p>Ladders to be thoroughly inspected before each use, after mishaps and periodically.</p> <p>Utilisation of ladder shall be in accordance with AS1892.5</p>
Construction	Working at Height Elevated Work Platforms	Refer to comments.	Refer to comments.	Refer to comments.	<p>Elevated Work Platforms (articulated or boom) are to be visually inspected before each use by a competent person and regularly inspected & maintained in accordance with manufacturers recommendations (min annually).</p> <p>Utilisation of Elevated Work Platforms to be in accordance with AS2550.10.</p> <p>Identify uneven floor surfaces and obstructions at height, prior to utilisation.</p> <p>Use a spotter/supervisor.</p>
Post Construction	General Maintenance	-	-	All Maintenance work is to be performed by suitably qualified and experience personnel, using appropriate and approved equipment and to agreed safe working methods	

Greenview Consulting operates under Safe Work Australia's Code of Conduct for the design of buildings. Under the Code of Conduct it is the client's responsibility to provide a copy of the electrical risk and solutions register to the principal contractor. It is the principal contractor's responsibility to review the hazards and risks identified during the design process to ensure a safe workplace is maintained for the construction, maintenance and eventual demolition of the structure.

For & on behalf of Greenview Consulting,

Reviewed by:

A handwritten signature in black ink, appearing to read 'T Sheridan', is positioned above the printed name.

Tony Sheridan B.E., M.I.E.(Aust.), CP Eng.
Director



SAFETY IN DESIGN

70-72 Gordon St, South Granville

NO.	Guideword	Risk Issue(s)	Causes	Consequences	Safeguards	Action(s)
1	Demolition	Hazardous materials present on site	Presence of asbestos and lead	Health risk to workers	Ensure correct protective measures in place	Note made on architectural plans and project supplement
2	Landscape installation	Movement of bulk materials	Spreading of soil/ mulch materials	Risk of injury to workers from earth works machinery	Temporary fence off areas	Contractor to provide safe work statement and install fencing
3	Spraying herbicide	Herbicide treatment to weeds and lawn	Risk of exposure to contractors	Poisoning of contractors	Follow manufacturers guidelines	Contractor to ensure workers are trained in herbicide safe spraying practices
4	Egress/Access	Accessing utilities such as water meters and electrical cupboards	Falling/tripping	Injury to workers	Water and Gas meters and electrical cupboard can be accessed via the ground floor.	Note made on architectural plans
5	Slip	Water on path	Excessive rain	Injury to residents	Ensure adequate drainage to minimise water sitting on pathways	Specification of surface material must be slip resistant. Ensure adequate drainage is specified and installed during construction
6	Fall	Crossovers	Trip hazard at edge of concrete	Injury to pedestrians	Ensure edges of paths and driveways are flush with surrounding surface	Building contractor to ensure this during construction
7	Slip	Foliage or fruit dropped from trees	Fruit or flowers falling on pathways	Injury to residents	Ensure selected plant species near paths to not drop berries etc	Ensure any pathways are cleaned regularly
8	Crime	CPTED - Crime Prevention Through Environmental Design	Areas for people to hide within gardens	Injury or theft	Ensure adequate lighting and reduce areas of planting where people can hide. Ensure clear sight lines	Lighting to be on at night. Garden maintenance to be carried out periodically to ensure plants do not overgrow the specified location