



*SAFETY IN DESIGN REVIEW REPORT*

**TENDER**  
ISSUE: A  
22-09-2016

7032  
**APARTMENTS DEVELOPMENT**

43-45 ELANDA STREET  
SUNSHINE BEACH

ALDEV HOLDINGS



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## 1. INTRODUCTION

The project is an apartments development at 43-45 Elanda Street, Sunshine Beach on the Sunshine Coast in Queensland

Lot 1 on SP230070

Parish of Weyba

County of March

This building is designed to be a domestic dwelling Class 2 under the National Construction Code, BCA Volume 1.

The proposed design of this development is to comprise 7 high level apartments over 3 levels with basement car parking below. Levels 1 and 3 contain 2 apartments, with 3 apartments on level 2. The changing plans on every level allow compliance with the Council setback and GFA restraints. The proposed accommodation is to be of a higher level of fixtures and finishes. The 2 apartments located on level 1 are to be designed to allow for a twin key arrangement in the future if required.

- The intention of this Report is to ensure that hazards and risks that may exist in the design of a workplace are eliminated or controlled at the design stage, so far as reasonably practicable.
- Focus of the report is on unusual aspects of the design which may involve unusual hazards that may require risk controls to eliminate or minimise the risk
- Assumptions of standard hazards
- Dot points of the current construction project

This review is being undertaken during the tender stage of the project.

## 2. SCOPE

Blackburne Jackson Design was commissioned by Aldev Holdings to design and documents the project.

## 3. REFERENCED DOCUMENTS

The following documents have been referenced as part of this review:

- The BA design documents. Refer to drawing transmittals for lists of drawings.
- WHS Work Health and Safety Act 2011
- WHS Work Health and Safety Regulation 2011

## 4. DESIGN ASSUMPTIONS

The following assumptions have been made as part of this review.

- The project buildings and infrastructure have been designed to incorporate the constraints of the site and external spaces, above and below ground level.



- The whole of the project has been designed to incorporate standard construction techniques and methodologies.
- Refer to the design documentation for an overview of the materials incorporated into the project.

## 5. REVIEW METHODOLOGY

### Hazard Identification

A Hazard Identification Checklist and Template was utilised to record the findings of the review. A copy of the completed Register is attached to this report.

For each area/location of risk exposure the review described:

- Hazard and risk exposure involved
- Mitigation of the risk (potential or achieved)
- Estimation of Probability that harm may occur
- Estimation of Consequence of harm that may occur
- Estimation of Risk (Probability x Consequence = Risk)
- Any further action required



## Summary of Risk Assessment Matrix Used

A "5x5" risk matrix was utilised to estimate the level of risk associated with a specific hazard (risk is the Probability of harm multiplied by the Consequence of harm).

- A. Identify potential hazards associated with the activity through the use of the Hazard Identification Checklist (Following Pages)
- B. Perform a risk assessment for the hazards identified by:
- (i) Determining the consequences (refer Table 1);
  - (ii) Determining the probability of the event occurring (refer Table 2);
  - (iii) Applying the values obtained from Tables 1 & 2 to the Qualitative Risk Matrix (Table 3) to obtain the resultant Risk Score and Level.

TABLE 1 – CONSEQUENCE TABLE			TABLE 2 – PROBABILITY TABLE		
Given that the event occurs, what is the likely outcome?			How likely is it, that the event will occur?		
LEVEL	DESCRIPTOR	CONSEQUENCE	LEVEL	DESCRIPTOR	DESCRIPTION
1	Insignificant	No injury	1	Rare	The event may occur only in exceptional circumstances
2	Minor	First Aid treatment	2	Unlikely	The event may occur at some stage
3	Moderate	Medical treatment required	3	Moderate	The event should occur at some stage
4	Serious	Extensive injuries	4	Likely	Event will probably occur in most circumstances
5	Disaster	Death	5	Almost Certain	Event expected to occur in most circumstances

TABLE 3 – QUALITATIVE RISK ASSESSMENT MATRIX						RISK LEVEL	
CONSEQUENCE							
PROBABILITY	1 Insignificant	2 Minor	3 Moderate	4 Serious	5 Disaster		
1 Rare	1	3	6	10	15		High (18 - 25)
2 Unlikely	2	5	9	14	19		Significant (10-17)
3 Moderate	4	8	13	18	22		Moderate (6 - 9)
4 Likely	7	12	17	21	24		Low Risk (1 - 5)
5 Almost Certain	11	16	20	23	25		



## 6. REVIEW RESULTS

### Significant Unusual Risks

The risk assessment forming part of this safety in design review identified that the hazard(s) summarised below showed a risk level of HIGH.

All other risks were rated as being MEDIUM or LOW.

All risks identified in this review should be reviewed as part of future project phases' Safety in Design reviews.

RISK ITEM 1	
Area/Location of Risk Exposure	Design for Construction - Vehicle access
Description of Hazard and Risk Exposure	Vehicle accident, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 2	
Area/Location of Risk Exposure	Design for Construction - Crane and Heavy Vehicle Access
Description of Hazard and Risk Exposure	Vehicle accident, injury to persons
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 3	
Area/Location of Risk Exposure	Design for Construction - Power lines underground and above ground
Description of Hazard and Risk Exposure	Digging up live cables, electrocution
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 4	
Area/Location of Risk Exposure	Design for Construction - Proximity to members of the public via walkways, inhabited houses, schools
Description of Hazard and Risk Exposure	Pedestrians near boundary of site, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)



RISK ITEM 5	
Area/Location of Risk Exposure	Design for Construction - Working at heights
Description of Hazard and Risk Exposure	Falls from heights, roof anywhere above 2m, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (S)

RISK ITEM 6	
Area/Location of Risk Exposure	Design for Construction – Work in excavation
Description of Hazard and Risk Exposure	Collapse of excavation, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 7	
Area/Location of Risk Exposure	Design for Construction – Fall/struck by falling objects
Description of Hazard and Risk Exposure	Fall/struck from falling object, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 8	
Area/Location of Risk Exposure	Design for Construction - Stability (structure and environment)
Description of Hazard and Risk Exposure	Soil condition, damage to buildings and landscape
Risk level (i.e. Probability x Consequence = Risk level)	22 (H)

RISK ITEM 9	
Area/Location of Risk Exposure	Design for Construction - Vibration
Description of Hazard and Risk Exposure	Soil condition, collapse of excavation
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)



RISK ITEM 10	
Area/Location of Risk Exposure	Design for Construction - Temporary weakness (insufficient propping)
Description of Hazard and Risk Exposure	Collapse of formwork or floors, injury to person/damage to building
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 11	
Area/Location of Risk Exposure	Design for Construction - Shoring
Description of Hazard and Risk Exposure	Collapse of walls or floors, injury to person/damage to building
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 12	
Area/Location of Risk Exposure	Design for Construction - Shoring of trenches over 1.2M deep
Description of Hazard and Risk Exposure	Collapse of trench walls, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 13	
Area/Location of Risk Exposure	Design for Construction - No. of exit points
Description of Hazard and Risk Exposure	Not able to escape from building, injury to person/death
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 14	
Area/Location of Risk Exposure	Design for Construction - Emergency egress
Description of Hazard and Risk Exposure	Too long to escape, injury to person/death
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)





RISK ITEM 15	
Area/Location of Risk Exposure	Design for Construction - Size – width, height, length
Description of Hazard and Risk Exposure	Not able to escape from building, injury to person/death
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 16	
Area/Location of Risk Exposure	Design for Construction - Obstructions
Description of Hazard and Risk Exposure	Too long to escape, injury to person/death
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 17	
Area/Location of Risk Exposure	Design for Construction - Lighting
Description of Hazard and Risk Exposure	Not able to escape from building, injury to person/death
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 18	
Area/Location of Risk Exposure	Design for Construction - Entry/exit points
Description of Hazard and Risk Exposure	Too long to escape, injury to person/death
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 19	
Area/Location of Risk Exposure	Design for Construction - Recycled water use
Description of Hazard and Risk Exposure	Used on construction process and site contamination, failure to building materials and injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 20	
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Area/Location of Risk Exposure	Design for Construction - Earthing of electrical equipment
Description of Hazard and Risk Exposure	Unearthed conductive materials, electrocution
Risk level (i.e. Probability x Consequence = Risk level)	19 (H)

RISK ITEM 21	
Area/Location of Risk Exposure	Design for Construction – Temporary power
Description of Hazard and Risk Exposure	Safety around electrical supplies, injury to person/life risk from energised cabling
Risk level (i.e. Probability x Consequence = Risk level)	20 (H)

RISK ITEM 22	
Area/Location of Risk Exposure	Design for Safe Use - Access
Description of Hazard and Risk Exposure	Vehicle accident, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 23	
Area/Location of Risk Exposure	Design for Safe Use - Falls from elevated areas
Description of Hazard and Risk Exposure	Fall from stair, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 24	
Area/Location of Risk Exposure	Design for Safe Use - Traffic at crossovers
Description of Hazard and Risk Exposure	Vehicle accident, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 25	
Area/Location of Risk	Design for Safe Use - Access/evacuation



Exposure	
Description of Hazard and Risk Exposure	Exit doors blocked. Persons trapped in the building or injured on escaping
Risk level (i.e. Probability x Consequence = Risk level)	19 (H)

RISK ITEM 26	
Area/Location of Risk Exposure	Design for Safe Use - Lighting
Description of Hazard and Risk Exposure	Lighting level too low for safe escape, Persons trapped in the building or injured on escaping
Risk level (i.e. Probability x Consequence = Risk level)	19 (H)

RISK ITEM 27	
Area/Location of Risk Exposure	Design for Safe Use - Lighting
Description of Hazard and Risk Exposure	Lighting level to stairs, ramps and pathways. Trip and fall, injury to person
Risk level (i.e. Probability x Consequence = Risk level)	18 (H)

RISK ITEM 28	
Area/Location of Risk Exposure	Design for Safe Use – Electrical faults
Description of Hazard and Risk Exposure	Uncontained fault levels, injury to person/life danger
Risk level (i.e. Probability x Consequence = Risk level)	19 (H)

RISK ITEM 29	
Area/Location of Risk Exposure	Design for Safe Use - Earthing
Description of Hazard and Risk Exposure	Inadequate earthing/equipotential issues, injury to person/life danger
Risk level (i.e. Probability x Consequence = Risk level)	19 (H)

RISK ITEM 30	
Area/Location of Risk	Design for Demolition – Electrical Safety



Exposure	
Description of Hazard and Risk Exposure	Contact with active components, injury to person/life safety
Risk level (i.e. Probability x Consequence = Risk level)	19 (H)

## 7. CONCLUSION

This Safety in Design review has sought, so far as reasonably practicable, to involve the participation of relevant project participants, including clients, to identify unusual hazards associated with any unusual design aspects. As this is the first stage in the review of the risks involved in this project no controls have stated in this report.

For any ensuing design stages it is strongly recommended that this Safety in Design review be reviewed and revised as required to reflect any changes and to implement controls to the defined or assumed design.

## APPENDICES

### Safety in Design Hazard Identification Checklist

SAFETY IN DESIGN HAZARD IDENTIFICATION CHECKLIST (ONLY TO BE USED AS A GUIDE TO DEVELOP THE SAFETY REPORT)					
<b>Name of Project</b>	Apartments Development at 43-45 Elanda Street, Sunshine Beach	<b>Project Number</b>	7032	<b>Date</b>	22/09/16
<b>Attendees</b>	Aldev Holdings	Alex Rigby	54480186	alex@altum.com.au	
	Blackburne Jackson Design	Laura Ronchi	5443 3200	laura@blackburnejacksondesign.com.au	
	ADG Engineers	Jeremy Cockram	5477 9004	jcockram@adgce.com	
	Plumbing Design & Drafting	Richard Poole	5437 7660	rpoole@pdd.net.au	
	Wildeisen & Associates	Mike Wildeisen	0488 151260	mike@wildeisen.com.au	
	Building Surveying Professional	Stewart Magill	5451 0579	Stewart.Magill@bspqld.com.au	
	Morgan Consulting Engineers	Henry Morgan	3369 8411	henry@morgance.com.au	

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
Design for Construction						
	Land impacts	Contours and Terrain	Yes	Sloping site	Injury to person/damage to materials	13 (M)
		Vegetation	No	-	-	-
		Landmarks (Historical, Heritage sites)	No	-	-	-
		Waterways	No	-	-	-
		Water tables	No	-	-	-
		Soil condition	Yes (FC)	Not an impact on health or safety of workers	-	-
		Cultural Heritage	No	-	-	-
		Flood plain	No	-	-	-
1	Access to site	Vehicle access	Yes (FC)	Vehicle accident	Injury to person	18 (H)
2		Crane and Heavy Vehicle Access	Yes (FC)	Vehicle accident	Injury to person	18 (H)
		Traffic proximity - intersection/roadways	Yes (FC)	Vehicle accident	Injury to person	14 (S)
		Pedestrian access	Yes (FC)	Slips trips falls	Injury to person	9 (M)
3	Proximity to Utilities	Power lines underground and above ground	Yes (FC)	Contact with live cabling	Electrocution	18 (H)
		Water	Yes (FC)	Striking water main	Site flooded	4 (L)
		Sewerage	Yes (FC)	Striking sewerage	Site contamination	4 (L)
		Telecommunication towers and equipment	No	-	-	-
		Gas	No	-	-	-

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
		Underground Telecommunications	Yes (FC)	Digging up cabling	Construction delays, liabilities from services provider	4 (L)
	Storage requirements	Storage space for equipment and building products	Yes (FC)	Access to materials	Damaged material	8 (M)
		Storage space for waste materials	Yes (FC)	Contamination of site	Enviromental considerations, construction delays	4 (L)
		Site Parking	Yes (FC)	Vehicle accident	Injury to person	4 (L)
		Loading and unloading material - Manual Handling	Yes (FC)	Lifting heavy materials	Injury to person	13 (S)
	Position and Location	Position in relation to other buildings and structures	Yes (FC)	Ground condition	Damage to other buildings	17 (M)
		Position in relation to walls, trees, immovable objects	Yes (FC)	Ground condition	Damage to neighbouring fences	12 (S)
4		Proximity to members of the public via walkways, inhabited houses, schools	Yes (FC)	Pedestrians near boundary of site	Injury to person	18 (H)
5	Heights and Depths	Working at heights	Yes (FC)	Fall from heights, roof/anywhere above 2m	Injury to person	18 (S)
		Crane to locate condenser units on rooftop	Yes (FC)	Limited access	Damage to materials and structure	8 (M)
			Yes (FC)	Struck by falling objects	Injury to person	14 (S)
		Work in excavations, including pits	Yes (FC)	Work in excavations	Fall in excavation	14 (S)
6		Collapse of excavation, including pits	Yes (FC)	Work in excavations	Collapse of excavation	18 (H)

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
		Access/egress to height/ depth	Yes (FC)	Poor access at height or into excavation	Injury to person	9 (M)
7		Falls/struck by falling objects	Yes (FC)	Falls/struck by falling objects	Injury to person	18 (H)
		Confined space	Yes (FC)	Working in confined spaces (roof, ceiling, manholes, pits)	Injury to person	13 (S)
	Human Factors	Posture/manual handling	Yes (FC)	Lifting heavy items	Strain and sprain	13 (S)
		Visibility (lighting/ sightlines, blind spots)	Yes (FC)	Extruding material, vehicles & persons	Injury to person	14 (S)
		Slips, trips, falls	Yes (FC)	Poor equipment housekeeping	Slips trips and falls	9 (M)
		Equipment installation	Yes (FC)	Use of hand tools	Injury to person	9 (M)
8	Movement and Direction	Stability (structure and environment)	Yes (FC)	Soil condition	Damage to buildings and landscape	22 (H)
		Physical damage from construction activities	Yes (FC)	Tight between buildings	Damage to buildings and landscape	8 (M)
9		Vibration	Yes (FC)	Soil condition	Collapse of excavation	18 (H)
		Traffic movement	Yes (FC)	Interaction with people in limited space around building	Injury to person or damage to building	17 (S)
		Movement of mobile plant	Yes (FC)	Interaction with people in limited space around	Injury to person or damage to building	14 (S)



Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
				building		
	Load and Force	Loads to existing structure during construction, demo, commissioning	No	-	-	-
		Loads to new structure during construction, demo, commissioning	Yes (FC)	Uneven settlement	Damage to building	4 (L)
			Yes (FC)	Excessive weight of rooftop condenser units	Damage to building	2 (L)
10		Temporary weakness (insufficient propping)	Yes (FC)	Collapse of formwork or floors	Injury to person /damage to building	18 (H)
11		Shoring	Yes (FC)	Collapse of walls or floors	Injury to person /damage to building	18 (H)
12		Shoring of trenches over 1.2M deep	Yes (FC)	Collapse of trench walls	Injury to person	18 (H)
		Raising/Lowering Structures	No	-	-	-
13	Access and Egress	No. of exit points	Yes (FC)	Not able to escape from building	Injury to person/death	18 (H)
14		Emergency egress	Yes (FC)	Too long to escape	Injury to person/death	18 (H)
15		Size – width, height, length	Yes (FC)	Not able to escape from building	Injury to person/death	18 (H)
16		Obstructions	Yes (FC)	Too long to escape	Injury to person/death	18 (H)
17		Lighting	Yes (FC)	Not able to escape from building	Injury to person/death	18 (H)
18		Entry/exit points	Yes (FC)	Too long to escape	Injury to person/death	18 (H)

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
		People and equipment movements	Yes (FC)	Difficult to move equipment	Damage to equipment or person	14 (S)
		External Impacts	No	-	-	-
		Positioning of A/C and other fittings accessories	Yes (FC)	Difficult to maintain equipment	Damage to equipment or person	13 (S)
	Hazardous Substances	Asbestos, lead	No	-	-	-
		Hazardous chemicals	Yes (FC)	Cleaning	Inhalation and burns	17 (S)
		Contaminated ground	Yes (FC)	Acid Sulphate soils	Environment if not treated correctly	4 (L)
		Dust and Quartz	Yes (FC)	Concrete use and cutting	Inhalation of silica	9 (M)
		Lime	Yes (FC)	Acid sulphate soils treatment	Chemical burns	17 (S)
19		Recycled water use	Yes (FC)	Used in construction process and site contamination	Failure of building materials and injury to person	18 (H)
		Termite Spray	Yes (FC)	Chemical Spray	Inhalation of termite spray	9 (M)
		Cement Products	Yes (H)	Silica dust in cement	Inhalation of silica	9 (M)
		Synthetic Mineral Fibres (SMF) (insulation)	Yes (FC)	Synthetic Fibre insulation	Inhalation of SMF	9 (M)
		Glues	Yes (H)	Two part glues for plumbing	Inhalation of vapour	9 (M)
		Fibre cement products	Yes (FC)	Cutting of material	Inhalation of material fines	10 (S)
		Refrigerant	Yes (FC)	Incorrect handling or leakage	Inhalation and asphyxiation	14 (S)

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
		Solvents & Adhesives	Yes (FC)	Installation and application	Inhalation of vapour, contacts with exposed body parts	9 (M)
		Pool/Water-feature Chemicals	Yes (FC)	Pool commissioning	Inhalation, ingestion of and contact with toxic pool chemicals causing injury to person	14 (S)
		Fertilisers, mulch, insecticides and herbicides	Yes (FC)	Installation and application	Inhalation of material fines or toxic particles and/or fumes	14 (S)
	Environmental Impact	Heat	Yes (FC)	Heat stroke	Injury to person	17 (S)
		Wind	Yes (FC)	Non-braced and tied down materials	Damage to materials and injury to person	13 (S)
		Heavy Rain	Yes (FC)	Flooding of low areas and basement	Construction delays/damage to equipment	4 (L)
		Storm Surge	No	-	-	4 (L)
		Salt corrosion	Yes (FC)	Iron materials left exposed during construction and not protected	Corrosion and reduction in structural integrity	7 (M)
		Cyclones	No	-	-	-
	Impact on Environment	Sediment/Erosion	Yes (FC)	Sediment runoff	Sediment in drains/damage to completed and existing landscapes	3 (L)
		Noise	Yes (FC)	Noise from equipment	Disturbance of community	4 (L)
		Smoke/dust	Yes (FC)	Dust from earthworks	Exposure to community	5 (L)
		Rivers, flora etc.	No	-	-	-

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
	Fire and Explosion	Fuel / LPG / LNG	No	-	-	-
		Hot Works Fire	Yes (FC)	Welding structure and applying waterproofing	Injury to persons	17 (S)
	Pedestrians	Safety of pedestrians on footpaths	Yes (FC)	Heavy vehicles	Injury from vehicle interaction entering or exiting the site	10 (S)
		Safety of commuters at existing vehicles	No	-	-	-
20	Electrical	Earthing of electrical equipment	Yes (FC)	Unearthed conductive materials	Electrocution	19 (H)
		Temporary Construction Lighting & Emergency Lighting, Safety Systems	Yes (FC)	OHS	Injury to person/life risk from poor visibility	14 (S)
21		Temporary Power	Yes (FC)	Safety around electrical supplies	Injury to person/life risk from energised cabling	20 (H)

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
Design for Safe Use						
22	Operation	Access	Yes (FC)	Vehicle accident	Injury to person	18 (H)
		Health	No	-	-	-
		Fire safety	Yes (FC)	Access to fire hose reels	Damage to building	5 (L)
		Gas Plant	No	-	-	-
		Sewer pump stations	No	-	-	-
		A/C Plant	Yes (FC)	Wet rooftop from condensers	Slips trips and falls	5 (M)
			Yes (FC)	Excessive noise	Disturbance to the community	4 (L)
			Yes (FC)	Refrigerant leaks	Inhalation and asphyxiation	10 (S)
		Low VOC	No	-	-	-
23		Falls from elevated areas	Yes (FC)	Fall from stair	Injury to person	18 (H)
		Footpaths	Yes (FC)	Wet paths, ramps & stairs in weather	Slips trips and falls	10 (S)
24		Traffic at crossovers	Yes (FC)	Vehicle accident	Injury to person	18 (H)
		Crime	Yes (FC)	Attack to person	Injury to person	10 (S)
			Yes (FC)	Home intrusion	Damage to building	9 (M)
		Grey Water	No	-	-	-
		Carpark exhaust	Yes (FC)	Fan failure	Carbon dioxide poisoning	9 (M)
		Pool and Water-features	Yes (FC)	Persons falling into water	Drowning	15 (S)
		Irrigation non-potable water	Yes (FC)	Drinking contaminated water from tap	Illness	10(S)
25	Emergency	Access / evacuation	Yes (FC)	Exit doors blocked	Persons trapped in the building or injured on escaping	19 (H)

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
26		Lighting	Yes (FC)	Lighting level too low for safe escape	Persons trapped in the building or injured on escaping	19 (H)
27			Yes (FC)	Lighting level to stairs, ramps and pathways	Trip and fall, injury to person	18 (H)
		Access to facilities - fire hydrant	Yes (FC)	Unable to protect building and materials	Damage to the building and materials	12 (S)
28	Electrical	Electrical Faults	Yes (FC)	Uncontained fault levels	Injury to person/Life danger	19 (H)
29		Earthing	Yes (FC)	Inadequate earthing, equipotential issues	Injury to person/Life danger	19 (H)
		Emergency Evacuation Lighting	Yes (FC)	Changes to layouts may impact on the emergency lighting compliance & effectiveness	Injury to person/Life danger	14 (S)
		Fire Detection & Alarms	Yes (FC)	Changes to layouts may impact on the emergency lighting compliance & effectiveness	Injury to person/Life danger	14 (S)


Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
		Mechanical Services Equipment – unselected equipment at time of documentation	Yes (FC)	Final selection of mechanical equipment may impact on the services documented for installation - Inadequate services leading to unsatisfactory operation.	Loss of functionality, cost to owner, risk to programme	4 (L)

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
Design for Safe Maintenance						
	Maintenance and Repair	Posture/manual handling	Yes (FC)	Lifting of heavy object	Strain and strain	13 (S)
		Drainage	No	-	-	-
		Size/width	No	-	-	-
		Access/egress	Yes (FC)	Access to roof and roof cavity	Fall from height, injury to person	14 (S)
		Heights	Yes (FC)	Working at height	Fall from height, injury to person	14 (S)
		Dropped objects	Yes (FC)	Falls/struck by falling objects	Injury to person	9 (M)
		Weight	No	-	-	-
		Slips/trips	Yes (FC)	Wet paths, ramps & stairs in weather	Slips trips and falls	13 (S)
			Yes (FC)	Wet roof in weather	Slips trips and falls	13 (S)
		Rotating equipment	No	-	-	-
		Balcony light fittings	Yes (FC)	Falls from height	Injury to person	18 (H)
		Cleaning building facade	Yes (FC)	Working at height	Fall from height, injury to person	14 (S)
		Maintaining building facade elements	Yes (FC)	Working at height	Fall from height, injury to person	14 (S)
		Confined spaces	Yes (FC)	Roof and ceilings	Injury to person	13 (S)
		TV satellite	Yes (FC)	Limited rooftop access	Fall from height	14 (S)
		Inaccurate As-Builts and O&M manuals	Yes (FC)	Incorrect use of equipment	Injury to person	9 (M)



Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
		Pool/water-feature and landscape maintenance	Yes (FC)	Use of chemicals, fertilisers and mulch	Inhalation, ingestion of and contact with toxic pool chemicals, toxic particles and/or fumes causing injury to persons	14 (S)
	Electrical	External lighting	Yes (FC)	Maintenance of luminaires at height	Falls, injury to person	13 (S)
		Lighting over stairs	Yes (FC)	Maintenance of luminaires at height	Falls, injury to person	13 (S)
		Inaccurate As-Builts and O&M manuals	Yes (FC)	Inaccurate information resulting in safety issues	Injury to person	9 (M)

Nº	Area of Risk	Prompts	Unusual (U) or Hazardous (H) or Needs further consideration (FC)	Hazard	Potential Impact	Risk Level
Design for Demolition						
	Impact on Environment	Noise	Yes (FC)	Noise from equipment	Disturbance of community	4 (L)
		Smoke/dust	Yes (FC)	Dust from earthworks	Exposure to community	5 (L)
		Refrigerant	Yes (FC)	Incorrect handling/disposal	Exposure to community and environment	14 (S)
30	Electrical	Electrical safety	Yes (FC)	Contact with active components	Injury to person/life safety	19 (S)
Design for Additional Activities and Variations						

SIGN OFF				
	Designer (or authorized representative):  	Name: Laura Ronchi Position: Associate Company: Blackburne Jackson Design		