Refurbishment of Big Shed
South Western Highway
Waroona
WA 6275

SAFETY IN DESIGN REVIEW REPORT

Report to Builder

Date: 04/02/2025
Project No: 2218

MCG Architects

This report is provided to comply with applicable legislative requirements.

All buildings and/or structures present potential hazards during construction, during operation, in their maintenance and in demolition. This report assumes that all parties act reasonably, understand the normal risks in and around buildings and take all reasonable care and precautions in what they do.

This report is prepared by us in our capacity as architects involved in the project. We are not experts in risk assessment nor hazard management and this report should not be relied upon as though it had been prepared by such experts.

CONTENTS

METHODOLOGY AND RECORD

This report shall be established at the outset of the project and shall be reviewed throughout the project at the end of the following stages:

Stage	Review date	By	Position	Initial
Schematic				
Design Development	24/04/2024	Joerg Sandbiller	Senior Architect	JS
Pre-construction	09/12/2024	Desmond Robertson	Senior Architectural Technician	DR
Construction	04/02/2025	Desmond Robertson	Senior Architectural Technician	DR

1. INTRODUCTION

The *Work Health and Safety Act 2020* (WA) (**WHS Act**) and the *Work Health and Safety (General) Regulation 2022* (**WHS Regulations**) create obligations for businesses[1], including architects, that design structures.

WHS Regulation 295 requires that the designer of a structure or any part of a structure that is to be constructed must give the PCBU who commissioned the design a written report (**Report**) that specifies the hazards relating to the design of the structure that, so far as the designer is reasonably aware, create a risk to the health or safety of persons who are to carry out any construction work on the structure or part.

This Report is provided for the purposes of WHS Regulation 295 and only applies in relation to the project described below:

PROPOSED REFURBISHMENT EXISTING 'BIG SHED' FOR COMMUNITY PURPOSE EVENTS.
SOUTH WESTERN HIGHWAY, WAROONA, WA 6275

The project is proposed to be constructed in one stage with works consisting of the refurbishment of the existing shed.

The current plans show a one-storey class 9A building which means within the BCA, the building needs to be constructed as Type C construction.

Fire protection for existing services.

Main Building BCA CLASSIFICATION	Class 9A, Assemble for Social
RISE IN STOREYS	One (1)
STOREYS CONTAINED	One (1)
TYPE OF CONSTRUCTION BCA	Type C Construction (Table 4 of BCA Spec C1.1 Appendix A)
EFFECTIVE HEIGHT	<12m
DFES REFERAL	No
CLIMATE ZONE	Climate Zone 5
CRITICAL FIRE SERVICES	Hydrants, Smoke Detectors, Extinguishers and Emergency Lighting
PERFORMANCE SOLUTIONS	No protection of openings within 6m on same lot

DESIGN DATA

1. THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED FOR THE FOLLOWING LOADINGS.

2. LIVE LOADS ARE IN ACCORDANCE WITH AS 1170.1 – 2002.

FLOOR USAGE	SUPERIMPOSED DEAD LOAD (kPa)	LIVE LOAD (kPa)
DECKING	0.5	4.0
ROOF	0.25	0.25

3. WIND LOADS IN ACCORDANCE WITH AS1170.2 – 2011 AS FOLLOWS:

REGIONAL WIND SPEED Vr:	45m/s
REGION:	A1
TERRAIN CATEGORY:	3.0
SHIELDING MULTIPLIER:	1.0
TOPOGRAPHIC MULTIPLIER:	1.0
IMPORTANCE MULTIPLIER:	1.0

4. SEISMIC LOADS IN ACCORDANCE WITH AS1170.4 – 2007 AS FOLLOWS:

EARTHQUAKE DESIGN CATEGORY:	II
SITE SUB-SOIL CLASS:	Ce
HAZARD FACTOR (Z):	0.09
PROBABILITY FACTOR (Kp):	1.0
IMPORTANCE LEVEL:	2

5. THE CONCRETE ELEMENTS HAVE BEEN DESIGNED FOR THE FOLLOWING EXPOSURE CLASSIFICATIONS IN ACCORDANCE WITH AS 3600.

FLOOR USAGE	CLASSIFICATION
EXTERIOR CONCRETE	B1
INTERIOR CONCRETE	A2

2. SCOPE

The **Shire of Waroona** engaged **MCG Architects** to refurbish the existing 'Big Shed' and create a community space for social events within the newly landscaped Railside Park.

The scope of services is as follows:

- ☒ **Concept/Schematic Design**
- ☒ **Design Development**
- ☒ **Contract Documentation**
- ☐ **Tender Administration**
- ☐ **Contract Administration**
- ☐ **Other: _____**

3. REFERENCED DOCUMENTS

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

Schematic & Design Development Drawings

Architectural Documentation including Specification

Civil & Structural Documentation including Specification

Consultants Documentation including Specification

Geotechnical Investigation

Dial Before Dig Information

Issued for Tender & CDC Documentation from Architect & Consultants

Building Code of Australia (part of National Construction Code).

Code of Practice – Construction work (Construction – code of practice (commerce.wa.gov.au))

Code of Practice – Safe Design of structures (Safe design of structures – code of practice (commerce.wa.gov.au))

4. DESIGN ASSUMPTIONS/PARTICULAR ASPECTS OF DESIGN

The following assumptions have been made in drafting this Report:

- The purpose of the Report is to identify ***hazards*** relating to the design of ***structures*** as part of the Project.
- It is not the purpose of this Report to identify or recommend ***controls*** to manage the identified hazards.
- To the extent that this Report does identify controls to manage the hazards, they are recommendations only, based on the author's understanding of current construction industry practice. The author of this Report makes no representations or warranties about the suitability of the controls for use on the Project or generally.
- Competent and appropriately licensed and qualified contractors will be engaged to carry out the work on the Project (**Works**).
- The Works will be constructed in accordance with all applicable legislative requirements, including but not limited to Amendments (Hazardous Chemicals)2020, (Engineered Stone)2024, (Crystalline Silica Substances)2024 and Legislation Amendment (Offences and Penalties)2023.

This Report provides a summary of the:

- methodology used to identify hazards relating to the design of the relevant structures; and
- uncontrolled, high or significant hazards.

The Report must be read together with all supporting documents and attachment, including the Hazard Identification Checklist.

5. REVIEW METHODOLOGY

Hazard Identification

A safety in design review (**Review**) was used to identify the hazards relating to the design of the relevant structures.

The Review was conducted using standard risk identification practices.

For each area/location of risk exposure the Review considered:

- the hazard(s) identified;
- the level of risk associated with the identified hazards by applying the Risk Matrix set out at Attachment 1 to this Report; and
- control options to manage the risks.

The findings of the Review are recorded.

Personnel involved in the Review

The following people were involved in the Review:

Key Review processes

Stage	Name	Role/position	Relevant expertise
SD	Michel Greenhalgh Desmond Robertson Fiona Nowland	Principal / Director Senior Architectural Technician Architectural Graduate	30 years Architect 31 years experience 4 years experience
DD	Michel Greenhalgh Desmond Robertson Fiona Nowland	Principal / Director Senior Architectural Technician Architectural Graduate	30 years Architect 31 years experience 4 years experience
CD	Michel Greenhalgh Desmond Robertson Fiona Nowland	Principal / Director Senior Architectural Technician Architectural Graduate	30 years Architect 31 years experience 4 years experience

- Kick of meeting at start of project with key personnel and to identify problems/risks with existing building.
- Design risk meetings during design process
- Several site inspections and measurements
- Check against existing

6. CHANGE TO DESIGN

The Review is current as at the date of issue of this Report.

Any change to the design of relevant structures after the date of issue of this Report may change the identified hazards or introduce new hazards and have an impact on the health and safety risks during construction of the relevant structures.

Any changes to the design of the relevant structures must be referred to **MCG Architects**.

7. REVIEW RESULTS

The hazards identified below are either:

- Uncontrolled (i.e., no controls have been applied); or
- Even after controls have been applied, remain:
  - High risk; or
  - Significant risk,

  as defined in the Risk Matrix.

8. RISK MATRIX

A. Identify potential hazards associated with the design of the structure.
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

Given that the event occurs, what is the likely outcome?

LEVEL	DESCRIPTOR	CONSEQUENCE
1	Insignificant	No injury
2	Minor	First Aid treatment
3	Moderate	Medical treatment required
4	Serious	Extensive injuries
5	Disaster	Death

TABLE 2 – PROBABILITY TABLE

How likely is it, that the event will occur?

LEVEL	DESCRIPTOR	DESCRIPTION
1	Rare	The event may occur only in exceptional circumstances
2	Unlikely	The event may occur at some stage
3	Moderate	The event should occur at some stage
4	Likely	Event will probably occur in most circumstances
5	Almost Certain	Event expected to occur in most circumstances

TABLE 3 – QUALITATIVE RISK ASSESSMENT MATRIX

	CONSEQUENCE				
PROBABILITY	**1 Insignificant**	**2 Minor**	**3 Moderate**	**4 Serious**	**5 Disaster**
1 Rare	1	3	6	10	15
2 Unlikely	2	5	9	14	19
3 Moderate	4	8	13	18	22
4 Likely	7	12	17	21	24
5 Almost Certain	11	16	20	23	25

RISK LEVEL	
	High (18 - 25)
	Significant (10-17)
	Moderate (6 - 9)
	Low Risk (1 - 5)

9. THE SITE

Project Name	**BIG SHED**	Project No.	2218A
Site Address	South Western Highway, Waroona, WA 6215		

Area: Lot 1- 1794sqm

Building 380 sqm

Locality ☐ Rural ■ Suburban ☐ C.B.D

Topography ☐ Flat ■ Slight Slope ☐ Sloping >25° <45° ☐ Steep slope >45°

Comments: Inside fenced area. Topsoil to be removed. Site preparation in accordance with Geotechnical Report.

Water nearby YES Details: Stormwater drain

Geotech Results

☐ A ☒ S ☐ M ☐ H ☐ E ☐ P

Comments: Water table between 700 -1000 below ground. Material: Clay Gravel with sand.
Site classified as a low to mid reactive S Class site.

Existing Buildings ☐ To be demolished (done – forward works) ☐ To remain occupied ■ To be unoccupied

Comments: Clear site around existing shed within the existing landscaped Railside Community Park.

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Surrounding Buildings: Irrigation House, ablution block, shade structures & playgrounds within the landscaped Railside Community Park.

Site Access for construction

Comments: Access from front street (South Western Highway), and rear street (Fouracre Street) – Contractor to provide Traffic Management as required.

10. SERVICES

Service	Any potential hazard	Cons	Prob	Risk
✔ Power	Underground cables. Make sure power not interrupted. Locate existing cables inside Lot, isolate all power to shed before work takes place.	**5**	**3**	**22**
✔ Telecom	Be aware of existing pits / check pits for asbestos. Make sure no services are interrupted	**2**	**2**	**5**
✔ Water	Make sure water connection is not interrupted to existing services.	**2**	**3**	**8**
✔ Sewer	Main sewer line running through property to be protected - Make sure no services are interrupted	**2**	**2**	**5**
✔ Stormwater Drainage	Be aware of existing drainage in the area.	**2**	**4**	**12**
✔ Gas	Building not connected to gas main – no existing gas services to the site	**4**	**1**	**10**
✔ Fire	Fire extinguisher to be used to secure building site during construction	**4**	**1**	**10**
Other (specify)				

11. WEATHER / ENVIRONMENT

Likely weather pattern during construction:

✔ Winter	✔ Spring	✔ Summer	✔ Autumn

Potential delays due to weather: If construction commences around May there is likelihood of bad weather / high water table delays for the external works.

Any notable environmental hazards (winds, sea, smoke, noise etc)		Cons	Prob	Risk
1	Noise to be contained - surrounding environment (residential)	2	3	8
2	No smoking on site	2	3	8
3	South Western Highway in front and Fouracre Street to the rear – be careful driving / Traffic Management	4	2	14
4	High water table	1	2	2
5	Smoke, if fires in surrounding areas	3	3	13
6	Stormwater during Winter period	3	3	13

12. TRAFFIC MANAGEMENT ISSUES

What level of traffic management is required High ✔ Med Low

Any notable hazards		Cons	Prob	Risk
1	Mark entry and leaving points. Contractor to continually monitor and review any required amendments to improve safe pedestrian and vehicle access and egress. Contractor to make provision in Safety Management Plans, including pedestrian access through park and traffic/supervised egress control if required.	4	3	18

	Negotiate during construction with Shire of Waroona regarding access and works during events.			

13. HAZARDOUS MATERIALS

At the early stages of the project, it is impossible to identify all potential hazardous materials to be used in the construction, maintenance and demolition of this building or structure as many are not determined at the time of writing.

Notably hazardous material		Control Action	Cons	Prob	Risk
1	Asbestos could be in ground – existing pits could be asbestos	All asbestos to be removed & disposed of by a qualified specialist & to local authority requirements and Safety Management Plan.	4	1	10

It should be noted that those selecting, purchasing and using any potentially hazardous materials shall be responsible for identifying, assessing and guarding against any potential risks. During construction, the Builder shall be responsible for maintaining Safety Data Sheets for all hazardous materials being used on site.

However, at the time of writing we are able to identify the following potentially hazardous materials involved with this building or structure.

- NIL

14. GENERAL NOTES AND CAUTIONS

The following notes and cautions apply to the Contractor, Sub-Contractors, and Visitors to the building site during construction and end users. Generally, they also apply to future end users and those involved with future works at the site, including ultimate demolition of the structure. However, we cannot predict every potential future user or activity and as such this report applies only as practicably reasonable.

Electrical Safety

- Be mindful of and aware of any underground or above ground electrical cables. After completion – refer to As-Cons prior to any digging.
- Be sure all electrical installations are appropriately earthed.
- Ensure electrical loads and cables are adequately protected and tagged.
- Install hazard warning tape over ALL inground electrical services.

Fire and Emergency

- Prior to commencing construction, identify potential fire risks and establish a clear fire protection and escape plan.
- Throughout the life of the building, maintain a clear fire protection and escape plan.
- Maintain all fire protection equipment including recurrent servicing and checking.

Movement of People and Materials

- In accordance with WHS requirements prepare, establish, and implement a traffic and pedestrian management plan.
- For the purpose of construction, plan and establish (and continuously review) routes and thoroughfares for pedestrians and vehicles, including laydown areas, unloading and loading areas, and safe crossing protocols.
- For developments with internal operational traffic establish safe crossing zones, priority signage and traffic slowing devices as required and appropriate to the traffic types and speeds.

Working Environment

- Throughout construction, be sure to maintain adequate and appropriate levels of ventilation, temperature, lighting, and acoustics for a safe working environment.

- Maintain safe, slip resistant, and trip free surfaces throughout the works.
- Ensure all thresholds and level changes are constructed to the relevant and appropriate current Building Code of Australia and Australian Standards requirements.

Plant and Cranage

- During cranage, loading and unloading, ensure a stable level platform is maintained and use rated lifting accessories in accordance with manufacturer's instructions and WHS procedures. Always be mindful and aware that a load could drop or fall at any time.
- Throughout construction, establish and maintain safe access to any roof or high-level mounted plant or equipment.

Earthworks

- Prior to commencing earthworks, endeavour to investigate any underground services via Dial Before You Dig, the service authorities and the contract documents. Plan excavations accordingly.
- Be mindful of any potential earthworks collapsing and provide appropriate shoring to suit the circumstance. If unsure consult a structural engineer.

Structural Safety

- Refer cranage above regarding safe load lifting.
- Maintain structural stability and integrity throughout including temporary propping, supports and bracing.

Falls Prevention

- During construction at all times, maintain safe falls prevention with secure temporary guardrails/barriers and anchor points.
- Provide safe scaffolding (or other e.g. EWP) access for working at heights throughout construction.
- At completion, ensure a certified safe roof access system has been installed and handed over, with instructions, to the end user.

15. TRADE SECTIONS

Where a section is left blank – no hazard identified to date.

DEMOLITION

Potential hazard		Control Action	Cons	Prob	Risk
1	Remove existing gutters, downpipes, roller doors and portion of damaged tine wall.	Contractor to secure works/ removal	3	3	13
2	Dust	Adhere to local environmental policy	1	4	7
3	Asbestos	Inspect / Quantify / Use protection gear. Remove safely to standards.	4	2	14

EARTHWORKS

Potential hazard		Action	Cons	Prob	Risk
1	Dust	Contractor to dampen works	1	4	7
2	Noise	Contractor to plan time of work	1	4	7
3	Compaction	Contractor to ensure compaction Be aware of neighbouring residential houses. Keep to a minimum	4	2	14

SITEWORKS

Potential hazard		Control Action	Cons	Prob	Risk
1	Neighbours	Manage noise	4	3	18
2	Hidden Services Underground	Get information from Dial before Dig & City of Bunbury	4	1	10

PLUMBING WORKS

Potential hazard		Control Action	Cons	Prob	Risk
1	Existing Plumbing	Investigate existing plumbing, main water, storm water & sewer on site	4	1	10

ELECTRICAL WORKS

Potential hazard		Control Action	Cons	Prob	Risk
1	Work on existing electrical Distribution	Contractor to ensure electricity is disconnected prior to any works commencing Temporary power necessary	4	1	10
2	Existing Electrical	Contractor to ensure electricity is disconnected prior to any works commencing	4	1	10
3	Rewiring and new DB	Reroute existing live cables to avoid areas of new construction as required by WP.	4	2	14

MECHANICAL WORKS (AIR-CON & VENTILATION)

Potential hazard		Control Action	Cons	Prob	Risk
1	NIL				

CONCRETE

Potential hazard		Control Action	Cons	Prob	Risk
1	Mid-level work	Use correct safety systems	5	1	15
2	Heavy vehicle movement	Take necessary precautions Use required PPE & traffic control	3	2	9
3	Works for foundation	Make sure that there is no failure of nearby buildings & services	5	1	15

STEEL

Potential hazard		Control Action	Cons	Prob	Risk
1	Low to mid level work	Use correct safety systems	5	1	15
2	Heavy vehicle movement	Take necessary precautions Use required PPE & traffic control	3	2	9
3	Crainage and lifting	Be aware of any crainage and lifting that may be required and take appropriate safety precautions at all times	3	5	22

BRICKWORK / BLOCKWORK

Potential hazard		Control Action	Cons	Prob	Risk
1	Low to high level work	Use correct safety systems Follow correct OSH procedures Take necessary precautions Use required PPE	1	1	1

CARPENTRY

Potential hazard	Control Action	Cons	Prob	Risk
1 Working at heights	Follow correct OSH procedures Take necessary precautions Use required PPE	3	2	9

EXTERNAL CLADDING

Potential hazard	Control Action	Cons	Prob	Risk
1 Working at heights	Follow correct OSH procedures Take necessary precautions Use required PPE	4	1	10

2 Wind & weather effect while sheeting	Follow correct OSH procedures Take necessary precautions Use required PPE	3	1	6

WINDOWS

Potential hazard	Control Action	Cons	Prob	Risk
1 Removal of existing windows . NIL				
2 Transport	Secure load	3	1	6

ROOFING

Potential hazard	Control Action	Cons	Prob	Risk
1 Working at heights	Follow correct OSH procedures Take necessary precautions Use required PPE Ensure roof safety mesh fixed before commencement	4	2	14
2 Wind & weather effect while sheeting	Follow correct OSH procedures Take necessary precautions Use required PPE	4	2	14

PLASTERING

Potential hazard	Control Action	Cons	Prob	Risk
NIL				

FINISHING TRADES

Potential hazard	Control Action	Cons	Prob	Risk
1 Volatile materials	Follow correct OSH procedures Ensure adequate ventilation Use required PPE	2	5	16
2 Fine dust	Follow correct OSH procedures Ensure adequate ventilation and dust capture Use required PPE	2	5	16
3 Working at heights	Follow correct OSH procedures Take necessary precautions Use required PPE	4	2	14
4 Waste materials disposal	No liquid disposal on site surface. Recycled disposed materials where possible	1	5	11

PAINTING

Potential hazard	Control Action	Cons	Prob	Risk
1 Fumes	Follow correct OSH procedures Ensure adequate ventilation Use required PPE No smoking to be permitted on site at any time.	2	2	5
2 Working at heights	Follow correct OSH procedures Provide appropriate best practise OSH training to all involved. Take necessary precautions Use required PPE	3	1	6

GAS

Potential hazard	Control Action	Cons	Prob	Risk
Tampering	Place all gas bottles in lockable cage	4	3	18

16. MAINTENANCE STATEMENT

Prior to planning or commencing any maintenance on this building or structure the maintenance team of the day and the contractor shall do a full review of current relevant WHS regulations and plan the maintenance accordingly.

It should be noted the following items have been designed into the building or structure to assist with safe practice for maintenance

- Roof access and secure points.
- Limited on site painted surfaces
- During the 1 year defects liability period builder is responsible for necessary maintenance

17. END OF LIFE DEMOLITION STATEMENT

Prior to planning or commencing any demolition of this building or structure at the end of its life cycle the procurement team of the day and the contractor shall do a full review of current relevant WHS regulations and plan the demolition to comply accordingly.

At this infant stage of the building's life, we can only identify the following potential hazards that must be planned for:

- Decommissioning on Gas Bottles