DESIGN CONFIDENCE

Building Audit and Risk Assessment

Middle Head Oval Amenities Building

1110 Middle Head Road
MOSMAN, NSW, 2088

ACCESSIBILITY | BUILDING REGULATIONS | FIRE ENGINEERING | MANAGEMENT SERVICES

EXECUTIVE SUMMARY

Design Confidence has been commissioned by Archer Office to prepare a building audit and risk assessment report of the existing building located at 1110- Middle Head Road, Mosman, NSW with respect to the requirements of the current Building Code of Australia (The BCA) 2022 Volumes 1 & 2.

The existing building is a two storey mixed use building on a sloped site containing a kiosk, clubhouse meeting room, sanitary facilities and change facilities on the ground floor and storage on the lower floor.

Figure 1 Photo of building from Middle Head Road

The purpose of this building risk assessment report is to detail the findings of our audit and provide recommendations for mitigating the risks identified. The risk assessment proposed will be a qualitative risk assessment and will follow procedures that are consistent with AS/NZS 4360:2004 – Risk Management.

The existing building was found to be deficient in many respects when assessed against the current Deemed to Satisfy provisions (DTS) of the Building Code of Australia Volume 1 and 2 2022 (BCA). From our assessment and the resultant non-compliances identified within Part 4 of this report it is evident significant redevelopment of the building would be necessary in order to bring the existing building into compliance with the minimum safety, health and amenity standards to the current BCA.

The following report was prepared to assist the client with developing a feasibility study on the viability of refurbishing the existing building.

DESIGN CONFIDENCE

CONTENTS

Project: Middle Head Oval Amenities Building
Document Type: Building Risk Assessment Report
Report Number: P223_562-3 (BCA) LB

The following report register documents the development and issue of this and each subsequent report/s undertaken by Design Confidence (Sydney) Pty Ltd.

Revision History –

OUR REFERENCE	REMARKS	ISSUE DATE
P223_562-1 (BCA) LB	Report issued in DRAFT for review and comment	10 April 2024
P223_562-2 (BCA) LB	Report issued in FINAL following stakeholder comment.	3 May 2024
P223_562-3 (BCA) LB	Report updated following stakeholder feedback.	6 June 2024

1. INTRODUCTION

1.1 General

Design Confidence has been commissioned by Archer Office to prepare a building audit and risk assessment report of the existing building located at 1110- Middle Head Road, Mosman, NSW with respect to the requirements of the current Building Code of Australia (The BCA) 2022 Volumes 1 & 2.

The purpose of the report is to recommend strategies to mitigate the risks identified and provide resolution/s for –

(i) The likelihood of the issue occurring; and

(ii) The consequence arising from the issue occurring.

The aim of defining the likelihood and consequence of a particular issue is to establish its risk rating. Once all issues have been risk rated they can be sorted from most critical to least critical.

Where full compliance with the recommendations is not proposed mitigation measures, together with a quantitative assessment to demonstrate equivalence are recommended as an alternative.

1.2 Scope and Limitations

This report is limited to providing a risk assessment for the issues identified at 1110- Middle Head Road, Mosman, NSW.

This report does not assess the level of property protection, business interruption or environmental protection associated with the building. The assessment is limited to compliance with the building regulations.

This report does not address insurance issues. It is recommended that relevant insurers are advised of the contents of this report, so that insurance issues can be appropriately addressed between the building owner and/or operator and their insurer.

Matters related to Work Health and Safety or community protection are generally outside the scope of this report, except where directly relevant to the solutions presented.

The findings of the inspection and items assessed herein were limited to a visual assessment only and hence this office has assumed that the structural, hydraulic, electrical and mechanical components in the context of the BCA are adequate. It is recommended that further consultation be provided by relevant specialist consultants to determine the status of compliance.

This report expires after 5 years and/ or changes occur onsite which did not form part of the initial risk assessment.

1.3 Information Sources

The following information has been used as reference documents in the formulation of this report (except as referenced elsewhere in the report)–

(i) Site inspection undertaken by this office on 5th April 2024; and

(ii) The Building Code of Australia (BCA) 2022 Volumes 1 & 2; and

(iii) AS/NZS 4360:2004 – Risk Management.

2. PRINCIPAL BUILDING CHARACTERISTICS

2.1 General Description

The features of the use of the building are summarised in table 2.1 below –

ITEM	DESCRIPTION
Classification	7b (Storage), 9b (Clubhouse and amenities), 10a (changerooms)
Effective height	<25m
Rise in storeys	2
Compartment Size	Within limitations
Type of Construction	Type B
External walls	Masonry/ Fibrous cement/ Glass
Internal walls	Masonry and lightweight
Floors	Timber and concrete
Roof covering	Metal roof cladding

Table 2.1 – Building description

The building is provided with two fire-isolated stairways serving each level.

2.2 Location

The building is located at 1110 Middle Head Road, Mosman, NSW. Surrounding buildings noted as being predominantly commercial/ government in nature.

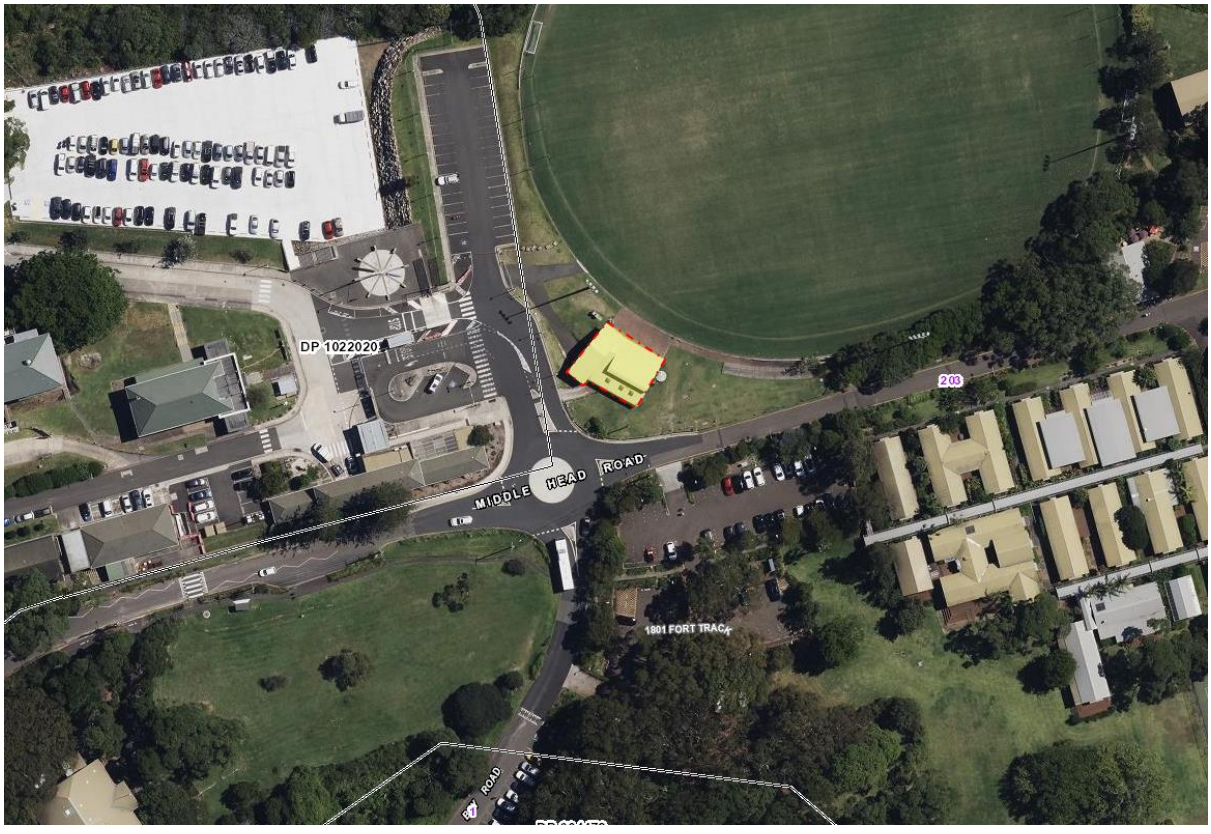


Figure 2.1 – Aerial view (Source: Six Maps)

3. BUILDING OCCUPANT CHARACTERISTICS

3.1 General

It is considered that in general, occupants of the building will be representative of a broad range of the population.

3.2 Occupant (group) Roles

The occupants in the building can be broadly classified into two (3) groups -

(i) Occupant Group 1 – Club volunteers;

(ii) Occupant Group 2 – Participants;

(iii) Occupant Group 3 – Visitors;

3.3 State

The state of the occupants affects their ability to recognise and interpret a fire alarm or fire cues (smoke, flames, noise) in a fire emergency situation and also the ability to react and take appropriate actions to avoid injury or death.

Occupants are expected to be alert and awake at the outbreak of a fire.

Children under the age of 5 would require assistance from volunteers in the event of an emergency.

3.4 Physical attributes

It is considered that the mobility of the occupants will represent the general population with the vast majority of occupants being able-bodied.

Occupants with physical disabilities (permanent or temporary – injuries), affecting their ability to evacuate can be present in the building. However, all occupants, including those with a disability are expected to be capable of reaching an exit in a fire emergency without needing physical assistance.

Visually and hearing impaired occupants can also be present in the building. Nevertheless, the severity of such impairments are assumed not to hinder occupants from hearing and responding to a fire alarm.

The disability prevalence rate in Australia has remained relatively stable over time, with 18.3% of people reporting disability in 2015, and 18.5% in 2012 and 2009. In the 2015 survey, a person had disability if they report they have a limitation, restriction or impairment, which has lasted, or is likely to last, for at least six months and restricts everyday activities[1].

The majority (78.5%) of people with disability reported a physical condition, such as back problems, as their main long–term health condition. The other 21.5% reported mental and behavioural disorders. More than half of those with disability aged 15 to 64 years participated in the labour force (53.4%)[2].

The overview of disability prevalence in Australian population in 2015 survey is summarised in the Figure 4.1 below.

[1] http://www.abs.gov.au/ausstats/abs@.nsf/mf/4430.0

[2] http://www.abs.gov.au/ausstats/abs@.nsf/mf/4430.0

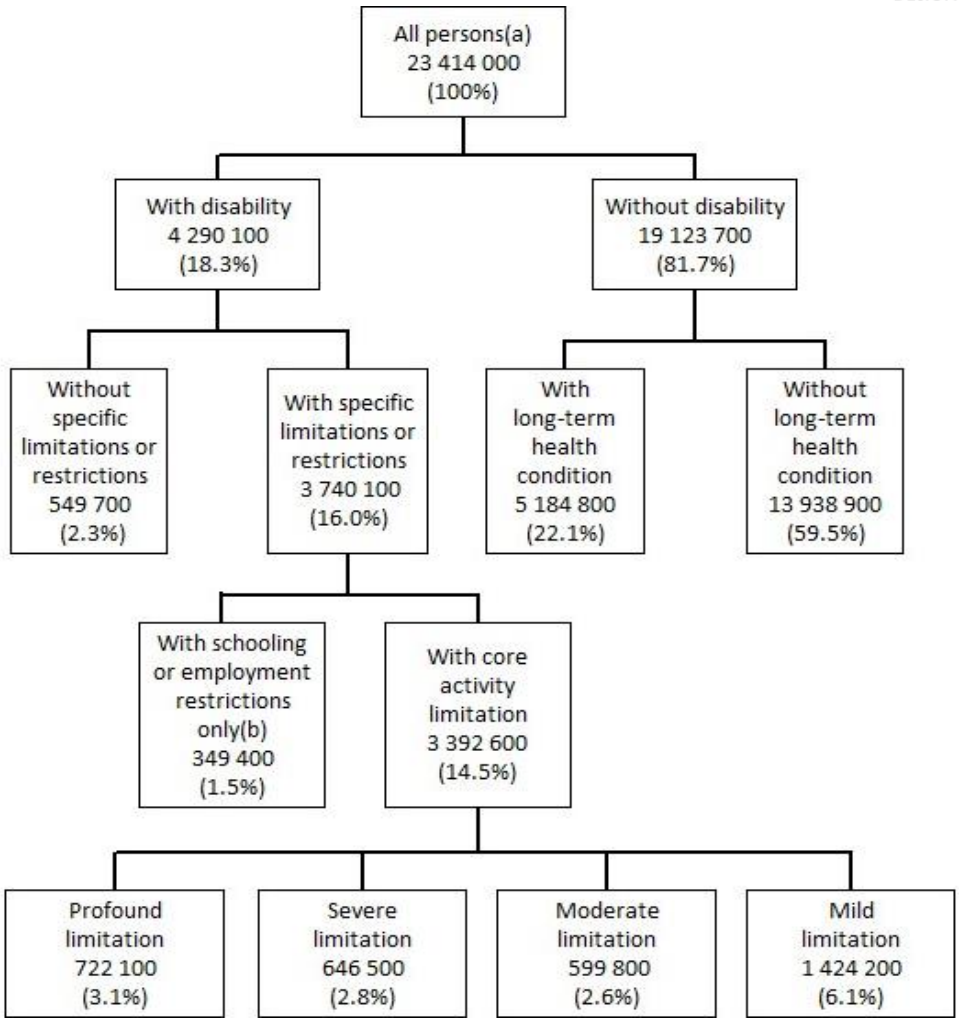


Figure 4.1 – Overview of disability in Australia in 2015

Core activities are communication, mobility and self-care. For core activity limitations, the Australian Bureau of Statistics Survey of Disability, Ageing and Carers (ABS SDAC) provides information on four levels of severity—profound limitation (people with the greatest need for help or who are unable to do an activity); severe limitation (people who sometimes need help and/or have difficulty); moderate limitation (people who need no help but have difficulty); mild limitation (people who need no help and have no difficulty, but use aids or have limitations)[3].

3.5 Mental attributes

Occupants are considered to possess the entire range of abilities to understand and interpret a fire alarm or other fire cues in a fire emergency situation.

Occupants can be very young or elderly, having some degree of mental disability that can have adverse effect on the ability to implement decisions and their emergency behaviour.

3.6 Level of assistance required and available

The majority of the occupants of the pavilion are considered not to require assistance in a fire emergency evacuation. Required assistance may be provided by other occupants in the building.

[3] https://www.aihw.gov.au/reports-statistics/health-conditions-disability-deaths/disability/glossary

3.7 Emergency training

As part of this report's recommendations staff of the industrial units will have to be trained in emergency management procedures, including regular evacuation training.

3.8 Activity at the outbreak of fire

There could be a whole range of activities being undertaken at the outbreak of a fire representative of the occupants and the usage of the building.

3.9 Familiarity with the building

Staff are expected to be familiar with the building and be able to determine the appropriate egress route in a fire emergency, bearing in mind required evacuation training. This enables timely assistance for other less mobile occupants.

4. RISK ASSESSMENT

4.1 Risk Assessment Matrix

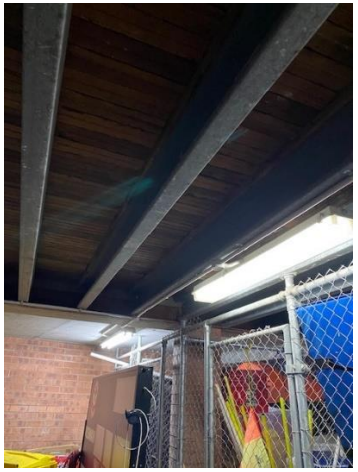
The risk rating for each issue has been determined by using the Risk Rating Matrix displayed in Figure 2. The assessment undertaken is concern primarily with the life and safety of occupancies within the building. Issues concerning accessibility, sanitary compartments have been considered secondary to the safety of all occupancies.

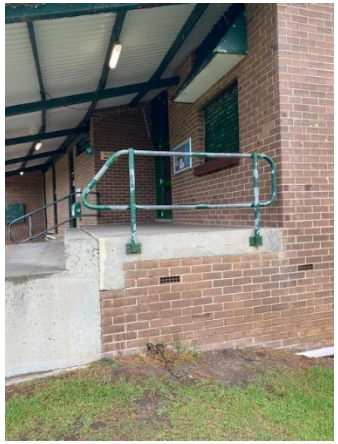
			Potential Consequences				
			L6	L5	L4	L3	L2
			Minor injuries or discomfort. No medical treatment or measureable physical effects.	Injuries or illness requiring medical treatment. Temporary impairment.	Injuries or illness requiring hospital admission.	Injury or illness resulting in permanent impairment.	Fatality
			Not Significant	Minor	Moderate	Major	Severe
Likelihood	Expected to occur regularly under normal circumstances	Almost Certain	Medium	High	Very High	Very High	Very High
	Expected to occur at some time	Likely	Medium	High	High	Very High	Very High
	May occur at some time	Possible	Low	Medium	High	High	Very High
	Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
	Could happen, but probably never will	Rare	Low	Low	Low	Low	Medium

Figure 2 - Risk Rating Matrix

The following details the risk assessment results as completed. Where full compliance with the recommendations is not proposed, mitigation measures together with a qualitative assessment to demonstrate equivalence are recommended:

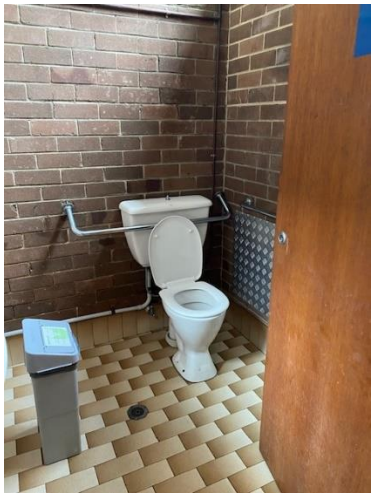
Table 1 - Risk Assessment Results

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
1.	The floor separating the first floor is a timber floor and is not fire rated to achieve a minimum FRL of 30/30/30 or fire rated from the underside against the incipient spread of fire in accordance with Specification 5 of the BCA. 	Provide a fire-protective covering to the underside of the floor, including any beams incorporated in it in accordance with Specification 5 of the BCA.	Possible	Severe	**Very High**
2.	Each existing floor in the building does not appear to have any protection measures for openings for services in accordance with C4D13 of the BCA.	Protection is to be provided to services penetrating the floors separating ground floor and lower ground floor. This would be achieved with a system that achieves compliance with C4D15.	Possible	Moderate	**High**

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
3.	The ceiling throughout the top storey is not insulated, resulting in moisture travelling through to internal habitable areas. Creating conditions for damp related issues. 	The roof is to be modified/ replaced to provide a compliant weatherproofed roof in in accordance with the provisions of Part F and J of the BCA.	Almost Certain	Minor	**High**
4.	Balustrades to landings of the pavilion do not achieve a height of 1m, have openings greater than 125mm and do not extend to all areas with a floor height greater than 1m from ground below. 	Balustrades are to be upgraded to comply with a minimum height of 1m in accordance with D3D18 of the BCA.	Likely	Major	**Very High**

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
5.	Handrail to the tiered seating is not continuous for the full flight. 	A handrail to the stair is to be installed in accordance with clause D3D22 of the BCA.	Likely	Major	**Very High**
6.	The risers to the stairway are inconsistent ranging between 190mm and 125mm across the flight. 	Stairway is to be modified to comply with the provisions of Clause D3D14 of the BCA.	Likely	Major	**Very High**

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
7.	The existing stairs do not have 50mm colour contrasting nosing strips.	The stairs are recommended to be upgraded to have a 50mm colour contrasting nosing strip on all steps and landings achieving a colour contrast of 30% and achieving a slip resistance of not less than P3 in accordance with D3D14 of the BCA.	Likely	Major	**Very High**
8.	The door hardware for all external doors and some internal doors contain door hardware which is lockable from the outside preventing free egress. Deadbolts are also present on a number of doors. 	Door hardware to be replaced with hardware which complies with the provisions of D3D26 of the BCA.	Possible	Major	**High**
9.	Fire extinguishers did not appear to be adequately distributed throughout and have not been maintained.	It is recommended a dry fire consultant review the existing and advise if any additional extinguishers required especially the storage area.	Possible	Severe	**Very High**

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
10.	The steel awning covering the seating area of the pavilion appears to be heavily corroded. Concern is raised as to the structural integrity of the connections of the structure. 	Have a structural engineer inspect and confirm structural integrity of the structure.	Possible	Severe	**Very High**
11.	Existing sanitary facilities are not afforded with fully compliant accessible/ ambulant facilities. 	Toilets to be modified to comply with current AS1428.1-2009 standard. Minimum size of accessible cubicle is to be 2.3m x 1.9m. Current cubicle is 1.9m x 1.9m.	Possible	Not Significant	**Low**

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
12.	The building accessway from the road contains a ramp steeper than 1:20 and is not afforded with a compliant accessible entry to the building. 	A compliant accessible entryway is to be provided in accordance with AS1428.1. This would necessitate regrading/ altering the landscape to provide compliant ramp and features.	Almost Certain	Not significant	**Low**
13.	The entry doors to the building do not contain a step down or drain which compromises the weatherproofing of the threshold. 	A strip drain is to be provided to the doorway to ensure risk of wind driven rain entering the building is mitigated.	Almost Certain	Not significant	**Low**

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
14.	Artificial lighting to the habitable areas of the building appears to be insufficient and not compliance with F6D5 of the BCA. 	Install artificial lighting throughout the building complying with AS1680.0.	Almost Certain	Not significant	**Low**
15.	Moisture management issues to floor in habitable areas. 	Investigate whether the slab incorporates a waterproof membrane as could not confirm onsite. If not present remedial works to improve moisture management required.	Almost Certain	Not significant	**Low**

ITEM	ISSUE	PROPOSED MITIGATION MEASURES	LIKELIHOOD	CONSEQUENCE	RISK RATING
16.	Doors to sanitary compartments are located within 1200mm of the pans swinging inwards and not provided with lift off hinges in accordance with F4D8 of the BCA. 	Provide lift-off hinges to all cubicles or re-swing outwards.	Possible	Moderate	**High**
17.	The habitable areas of the building the current form are unlikely capable of complying with the provisions of Section J of the BCA.	Investigate roof, wall, floor and services installation against the provisions of Section J. It is likely retrospective insulation, moisture management and services are required to be upgraded.	Almost Certain	Not significant	**Low**

4.2 Summary of Risk Assessment

The process adopted during the risk assessment has placed life and safety of occupancies as the first priority. This means that any issue that could lead to injuries or fatalities were placed at a higher priority level.

The following table is provided as a summary of the risk assessment, appropriate to the risk rating level.

Table 2 – Risk assessment summary

ITEM	ISSUE	RISK RATING
1.	The floor separating the first floor is a timber floor and is not fire rated to achieve a minimum FRL of 30/30/30 or fire rated from the underside against the incipient spread of fire in accordance with Specification 5 of the BCA.	**Very High**
2.	Balustrades to landings of the pavilion do not achieve a height of 1m, have openings greater than 125mm and do not extend to all areas with a floor height greater than 1m from ground below.	**Very High**
3.	Handrail to the tiered seating is not continuous for the full flight.	**Very High**
4.	The risers to the stairway are inconsistent ranging between 190mm and 125mm across the flight.	**Very High**
5.	The existing stairs do not have 50mm colour contrasting nosing strips.	**Very High**
6.	Fire extinguishers did not appear to be adequately distributed throughout and have not been maintained.	**Very High**
7.	The steel awning covering the seating area of the pavilion appears to be heavily corroded. Concern is raised as to the structural integrity of the connections of the structure.	**Very High**
8.	Each existing floor in the building does not appear to have any protection measures for openings for services in accordance with C4D13 of the BCA.	**High**
9.	The ceiling throughout the top storey is not insulated, resulting in moisture travelling through to internal habitable areas. Creating conditions for damp related issues.	**High**
10.	The door hardware for all external doors and some internal doors contain door hardware which is lockable from the outside preventing free egress. Deadbolts are also present on a number of doors.	**High**
11.	Doors to sanitary compartments are located within 1200mm of the pans swinging inwards and not provided with lift off hinges in accordance with F4D8 of the BCA.	**High**
12.	Existing sanitary facilities are not afforded with fully compliant accessible/ ambulant facilities.	**Low**
13.	The building accessway from the road contains a ramp steeper than 1:20 and is not afforded with a compliant accessible entry to the building.	**Low**
14.	The entry doors to the building do not contain a step down or drain which compromises the weatherproofing of the threshold.	**Low**
15.	Artificial lighting to the habitable areas of the building appears to be insufficient and not compliance with F6D5 of the BCA.	**Low**
16.	Moisture management issues to floor in habitable areas.	**Low**
17.	The habitable areas of the building the current form are unlikely capable of complying with the provisions of Section J of the BCA.	**Low**

5. CONCLUSION

Whilst some issues may appear to be less critical, it is our opinion that all issues should be addressed and rectified to improve the overall condition of the building.

The existing building was found to be deficient in many respects when assessed against the current Deemed to Satisfy provisions (DTS) of the Building Code of Australia Volume 1 and 2 2022 (BCA).

From our assessment and the resultant non-compliances identified within Part 4 of this report it is evident significant redevelopment of the building would be necessary in order to bring the existing building into compliance with the minimum safety, health and amenity standards to the current BCA.

Report By

Lindsay Beard
Principal | Building regulations
For Design Confidence (Sydney) Pty Ltd

Verified By

Luke Sheehy
Principal
For Design Confidence (Sydney) Pty Ltd

Design Confidence (Sydney) Pty Limited

Suite 6 | 113 Reservoir Street, Surry Hills NSW 2010
ABN: 72 896 582 485

T: 02 8399 3707
E: sydney@designconfidence.com
W: www.designconfidence.com