FORMIGA1

BCA Report (Sec 4.55)

Project: OPAL Seaside

Location: 184 - 194 Garden St, Warriewood, NSW

Completed For: Midson Group

On Behalf of: OPAL

Date: June 2019

Revision Number: B

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Revision Schedule				
Revision	**Date**	**Report Information**		
A	6th March 2018	**Reason for Revision**	Sec 4.55 revision	
B	27th June 2019		**Prepared by**	**Reviewed by**
		Name	Steve Passfield	
		Signature		

This report has been prepared and checked by the experienced team at Formiga1. For any queries regarding this report, please contact our office.

1. Introduction

Formiga1 has been engaged by the Midson group to provide a review of the proposed Sec 4.55 modification to the existing development consent. The project consists of a new RACF containing 156 beds and is to be constructed over two stages. This report considers the complete project including Stages One & Two.

The proposal to construct this new building has a number of technical considerations to address as part of the proposed work. These have been developed by establishing a process for the assessment of the work outlined in the Environmental Planning and Assessment Act 1979. The Act gives a number of requirements and considerations existing and new works and how the building assessment provisions are usually applied.

2. Purpose

The purpose of this report is to provide a high level design guide on an approach to building compliance assessment and establish scope for some of the aspects. The advice contained within this report provides guidance as to how BCA compliance can be achieved in accordance with the Environmental Planning and Assessment Regulation 2000, Clause 145. We understand that the proposed development will be subject to a Development Application and this Schematic Design Report will form part of the DA submission to Council for their determination.

This report seeks to outline the basis from which performance solutions can be developed for a number of aspects. An exhaustive list of variations to individual prescriptive measures will need to be completed as the design is further developed and performance solutions compiled. This scenario will require a fire engineered strategy for the building to achieve compliance with the current building assessment provisions.

3. Scope, Limitations and Exclusions

The scope of this assessment is limited to the current design documentation and will require further development of the building's design. The aspects noted for compliance are based on generic examples gleaned from similar buildings that comply using a combination of prescriptive and performance measures. It should be expected that individual aspects will vary in any detailed design though wider concepts and characteristics will make a similar contribution, particularly to overall fire safety.

This report is limited to the design documentation supplied and is only intended to outline the services that will be required.

This Preliminary Report does not address safety provisions enforced under the Local Government Act, such as, Occupational Health and Safety Act, Water, drainage, gas, telecommunications and electricity supply authority requirements, etc. The application of the Disability (Access to Premises) Standard 2010 has been assessed as part of this report, however, no other provisions of the Disability Discrimination Act 1992 have been reviewed.

4. Approval Methodology

The Environmental Planning and Assessment Regulation 2000 outlines the approval processes for different types of buildings and the method by which they are assessed. These works have been assessed against the Building Code of Australia 2019 that is currently enforced. However, as a requirement of the EP&A Regulation, Clause 145, the final design for approval is to be assessed against the BCA enforced at the date of the application for the Construction Certificate. Therefore, the advice provided in this report may become outdated if a revised BCA is released before the Application for a Construction Certificate is received.

The application of the Disability (Access to Premises) Standard and provision for access for people with disabilities will need to be addressed against the current BCA. Please note that the Deemed to Satisfy Provisions of the BCA are not the only method of compliance and a Performance Solution is expected as part of any work in any building. Generally, compliance with BCA Part D3 will be required throughout.

Development Consent from Council has been obtained Ref: 123/17 and the Sec 4.55 modified consent may contain additional conditions that will need to be addressed as part of the consideration for a Construction Certificate.

Other referrals such as Fire and Rescue NSW referral under EP&A Regulation, Clause 144 will form part of the process for the issue of a Construction Certificate.

5. Building Compliance

The assessment has been based on Architectural plans by Group GSA, Project Number 160760, DA-0000 Issue B, DA-1100 Issue B, DA-1100.1 Issue A, DA-2000 Issue C, DA-2001 Issue C, DA-2002 Issue C, DA-3000 Issue C, DA-3001 Issue B, DA-3100 Issue B.

This assessment has been tabulated and items identified in relation to Action, Consider and Note, meaning the following:

- **Action** - Requires action on your behalf to either address a non-compliance and/or provide further information on how compliance is proposed to be met for the item;
- **Consider** - Full details are not yet documented and the item should be considered as the design is developed to ensure compliance is met;
- Note - A general note stating that compliance can be achieved for the item.

5.1. Principal Building Characteristics

Aspect	Building
Proposed Classification	Part: RACF 9c
Rise in Storeys	2
Effective Height	Less than 12m
Construction Type	Type A (to permit larger fire compartments)
Compartment Limit	Class : 8,000m^2 or 48,000m^3
Occupants	Occupant numbers will be determined based on the design intent of this building as this is more suitable than table outlined in D1.13.

5.2. Building Code of Australia Assessment

Comments	Consider/ Action/ Note
BCA Section B - Structure	
The building is to be designed to an importance level of 3 as the building is not considered a low rise residential building.	**Consider**
The Structural Engineer is to provide a Design Certificate prior to the approval stage certifying that the building has been designed to the above requirements.	Note
BCA Section C - Fire Resistance	
Generally, the FRL's required by Table 3 of Spec C1.1 are 120 minutes for the building. Particular note should be paid to the following elements: • External Walls - >3m to Bdy 120/60/30, non LB nil • External Columns - LB Column 120/-/-, non LB nil • Floors - 120/120/120 • Roof - Concession Spec C1.1, Cl 3.5 - nil	Note
Please note that other elements of this building are still required to maintain the 120 minute FRL and the 'support of another part' requirements of Clause 2.2 of Specification C1.1 will mean that loadbearing elements using the concession are not permitted to support the other building elements requiring an FRL.	Note
The proposed design is for the building to achieve the FRL's for Type A construction to permit the building to be one large fire compartment.	Note
Vertical separation is not required for external walls as the building will be sprinkler protected.	Note
Penetrations to fire rated barriers (shafts, walls, floors) are required to be in accordance with BCA Clause C3.15.	**Action**
Smoke compartmentation is required at a maximum floor area of 500m2. The compartmentation plans show compartments exceeding this so a FE approach will be required.	**Consider**
Exhaust ducting from ensuites is generally best kept within the one smoke compartment to avoid the installation & maintenance of smoke dampers. Fire dampers can be provided in the floor penetrations and the ductwork from the ground floor continued to the roof through metal, smokeproof ductwork so the ground floor smoke compartment continues through the first floor to the roofing.	**Consider**
BCA Section D - Access and Egress	
Exit stairs are required to be fire isolated in this building or be constructed as external stairs in lieu of FIS. Please note that FIS have specific discharge requirements D1.7. These requirements do not apply to an external stairs in lieu of a FISH.	**Consider**
Please consider the layout and protection of the discharge path in conjunction with these requirements. A FE approach will be required.	**Action**
Fire isolated stairs are required to have a fire resistant enclosure to the top.	Note
Exit travel is generally 20m to a point of choice and 40m to the first exit. Distance between alternative exits is limited to 60m. D1.5 Stage two indicates distances exceeding these requirements, up to 76m. A FE approach will be required.	**Action**
D1.7 Discharge and protection of people egressing cannot be achieved given the separation of different parts of the building. A FE approach will be required.	**Action**

Where openable windows with falls of >4m occur, a minimum height of 865mm is required, ensuring that no horizontal elements (including window sills and the like) are located between 150mm and 760mm.	Note
Where building entrances are also exits, consideration should be given to compliance with D2.19 – D2.21, including door swing, sliding doors and the like.	Note
This building is required to be accessible throughout. Paths connecting this building shall also comply with AS 1428.1 – 2009. Lifts will require accessible facilities.	Note
Most entrances to the building will be required to be accessible though some doors are not considered entrances as their purpose is only as exits. This applies particularly to discharge from stairs.	Note
Please note that all stairs used for circulation, including fire isolated stairs used by staff for regular daily movement, will be required to comply with Clause 11 (and Clause 10 respectively) of AS 1428.1. This means minimum widths are generally 1200mm between walls.	**Action**
PWD facilities appear to be located and provided for in a compliant manner. Details for these facilities are assumed compliant at this time. The Access Report outlines accessibility features as being compliant.	Note
A total of 8 accessible SOU's are required by Table D1.3. The plans do not indicate the provision of accessible units. Modification of the design or a performance based solution demonstrating satisfaction of the performance requirements is required. The Access Report identifies this as being an item for consideration. A performance based approach to access for staff in particular areas and fully compliant PWD facilities in the common areas may also be included.	**Action**
D3.5 requires the provision of PWD car parking spaces at a ratio of 1:100 spaces or part thereof. As 37 spaces are indicated on the plans only one PWD car space is required. Current design indicates two.	Note
BCA Section E - Services and Equipment	
Fire Hydrant coverage is required to all areas in accordance with AS 2419.1. Please note that the comments on compartment size and the impacts this may have on the supply of water and that the hydraulic design has compartmentation consistent to other plans. Other aspects of compliance (flows and pressures) are assumed at this time. The proposed booster location is compliant.	**Consider**
Fire hose reels are not required.	Note
Sprinklers are required for this building. The max coverage IAW AS2118.4 is 5,000m2 which needs to be considered by the hydraulic designer.	**Consider**
Smoke detection and alarms are required for this building in accordance with E2.2 of the BCA. OPAL generally choose to install an EWIS in their buildings which is not a mandatory requirement for a Class 9c RACF.	**Consider**
At least one lift will need to comply with AS 1735.12 for accessibility. Similarly, at least one lift will need to comply as a stretcher lift.	Note
Emergency lighting and illuminated exit signage is required for this building. Compliance has been assumed at this time.	Note
BCA Section F - Health and Amenity	
Wet areas are required to be waterproofed in accordance with AS 3740.	Note
To satisfy BCA Performance Requirement FP1.4, a Performance Solution is required to be adopted as there is no Deemed to Satisfy clause in the BCA. It is acknowledged that Performance Solutions are generally based on evidence to support the use of materials (i.e.	**Consider**

Codemark Certificate), based on compliance with BCA Volume 2 for weatherproofing or by using Verification Method FV1 of the BCA and being calculated by a qualified person.	
A bath, fixed or mobile, is required Table F2.1.	Note
Facilities are required as per table F2.3 and will be based on staff numbers. Further details are required to verify the proposed numbers will satisfy these requirements.	**Consider**
Clinical hand-washing basins are required at a ratio of 1:16 residents or part thereof. The current design shows 1 per 19 residents in some areas which will require a performance based solution to be developed to address the performance requirements.	**Action**
Accessible facilities are required to be provided to the accessible SOU's (See D1.3 above), and to common areas where there is a "bank" of facilities. Current design indicates PWD facilities in common areas. A common "performance based" approach is to provide larger facilities in common areas but not fully PWD compliant as these are typically not utilised by residents in wheelchairs without staff assistance.	**Consider**
Room sizes have been assumed compliant. Ceiling heights are not confirmed at this time. Minimum heights are generally 2.1 and 2.4m.	Note
Natural light is required to habitable rooms at 10% of the floor area. Ventilation may be achieved by natural or mechanical means. Compliance is assumed at this time.	Note
F2.8 One Slop Hopper per 60 residents or part thereof on every storey and a Disinfection Appliance - per 60 residents or part thereof on every storey *(A Performance Solution for combined installation of slop hoppers and disinfection appliances could be considered)*.	Consider
BCA Section G - Ancillary Provisions	
NA	
BCA Section J - Energy Efficiency	
It is assumed that Energy Efficiency has been sourced to an external consultant for JV3 verification method modelling or a BCA Assessment. Please note that the JV3 modelling does not cover BCA J8 and the building must still be provided with the facility to record individually the energy consumption of various components in accordance with BCA Clause F8.3.	Note

5.3. Fire Engineering Performance Solution Comments

A number of noncompliant items identified in this assessment could be resolved by adopting a fire engineered solution for the proposed development. These items are as follows:

1. BCA Clause - C2.5 smoke compartmentation exceeding 500m2
2. BCA Clause - D1.5 distance between alternative exits exceeding 60m
3. BCA Clause - D1.7 discharge of fire isolated stairs not achieving min 6m separation

5.4. Additional Performance Solution Comments

In addition to the fire engineered items, the following minor Performance Solutions are commonly applied to similar facilities and could be applied to this project. If these options are considered, please discuss the required reports/documentation necessary to be supplied for the Building Approval with our office.

1. BCA Clause - D3.1 and Table D3.1 Non-provision of accessible SOU's & ensuites and possible exemptions to accessibility to staff only areas?
2. BCA Clause - F2.1 provision of clinical hand basins at a ratio greater than required
3. BCA Clause - F2.4 provision of accessible ensuites to accessible SOU's
4. BCA Clause - F2.4 provision of accessible facilities in common areas to full to AS1428.1
5. BCA Clause - F2.8 provision of combined slop hopper/disinfection device

6. Conclusion

This report provides an assessment of the referenced architectural documentation against the Environmental Planning and Assessment Act, referenced Australian Standards, as well as, the Performance Requirements and Deemed to Satisfy provisions of the National Construction Code Series, Building Code of Australia (Volume 1) for the proposed development.

Key compliance issues have been identified through this assessment. These issues are to be resolved prior to the approval stage by means of; Performance Solutions, altered design documentation or clarification of information on building plans.

Notwithstanding the above, it is considered that compliance with the provisions of the BCA is readily achievable, provided the above matters are appropriately addressed by the project team. Additionally, it is considered that the matters raised can be adequately addressed in the preparation of the Building Approval documentation without resulting in any foreseeable inconsistencies with the Development Approval.