

29 August 2019

Department of Planning and Environment NSW Government
Att: Minister for Planning and Environment
GPO Box 39 Sydney NSW 2000

BUILDING CODE OF AUSTRALIA CAPABILITY STATEMENT - Rev B
Property/Project: Sydney Opera House – White Box (TIDE) – Bennelong Point, Sydney

The purpose of this submission is to advise that we have undertaken a preliminary assessment of the architectural drawings noted in Table 1 below, against the provisions of the Building Code of Australia 2019 (“BCA”) as per the requirements under Clause 145 of the Environmental Planning & Assessment Regulation 2000 (“EP&A Regs”). The project is known as the Tours Immersive Digital Experience (TIDE) within a White Box room. A site inspection was conducted by this office on the 20 August 2019.

Compliance with the BCA for these specific works will be able to be achieved by a combination of compliance with the deemed-to-satisfy (DTS) provisions and the potentially the Performance Requirements. Further assessment of the detailed design post DA submission will be required with potential Performance Solutions develop to justify:

- Excessive travel distances, if required. Options for compliance are currently under review – Fire Engineered Performance Solution.
- No required panic/push bar to the sliding or hinged door from the White Box – Fire Engineered Performance Solution.
- The use of a non-permitted sliding door in the path of travel to an exit. – Fire Engineered Performance Solution.
- Rationalisation of omission of luminance contrast for the purposes of identifying the door/doorways – Access Performance Solution.
- Potential alternative design for hearing augmentation signage – Access Performance Solution.

Notwithstanding the above comments we note that specific detailed compliance with the BCA is not a prescribed head of consideration under Section 79C of the Environmental Planning & Assessment Act 1979 and accordingly, we trust that the determination of the development application will not be subject to the assessment of any technical matters under the state’s building regulations.

In this regard and pursuant to Clause 54 (4) of the Environmental Planning & Assessment Regulation 2000, we trust that the Consent Authority will not require any additional information in the determination of the development application for technical BCA matters that will be assessed at the Crown Building Works Certificate stage. A BCA Summary Assessment Report has been included below and can be read in conjunction with this Statement.

As such we hereby confirm that matters pertaining to compliance with the BCA will be suitably assessed by the appointed Crown Building Certifier prior to the issue of the Crown Building Works Certificate in accordance with Clause 98 of the Environmental Planning and Assessment Regulations 2000 & Section 6.28 of the Environmental Planning & Assessment Act 1979.

We trust this submission satisfies any concerns of the Consent Authority with compliance of the development with the relevant requirements and provisions of the BCA.

The following DA submission drawings have been reviewed as part of the access design assessment:

Description	Drawing No.	Revision
Cover Sheet	DA000	A
Location Plan	DA002	A
Existing Plan & Section	DA100	A
Demolition Plan & Section	DA101	A
Proposed Plan & Section	DA120	A
Proposed Sections	DA200	A

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Bennelong Passage Elevation	DA210	A
Material Board	DA900	A

Table 1 – Documentation Assessed

BCA Assessment:

Building Description

Existing Building Use/Classification:	Class 9b entertainment venue (the White Box area is current plant/storage)
Proposed Use/Classification :	Class 9b entertainment venue (the White Box area is a public use space only, not an auditorium, stage, back stage area, etc.)
Existing Type of Construction:	Type A (overall Sydney Opera House building)
Proposed Type of Construction:	Type A (overall Sydney Opera House building)
Existing Rise in Storeys:	TBC
Proposed Rise in Storeys:	TBC
Levels Contained:	TBC
Effective Height:	More than 25 m, less than 50 m. (overall Sydney Opera House building)

Part B – Structure

No issues identified at this stage of the documentation. Structural Engineer to confirm structural compliance prior to issuance of the Crown Building Works Certificate.

C1 – Fire Resistance and Stability

The relevant existing Arup Fire Compartmentation plan (Fire Compartments and Fire Door – Level GR South West 2018 Audit dated 12-11-2018, see Figure 1 below) illustrates a fire compartmentation line/wall to the east perimeter of the White Box. The proposed changes to this wall (provision of a new opening to house a sliding door exit) will not see a decrease in the required fire rating of 120/120/120. The southern and eastern lines/walls are noted in the existing fire compartmentation plans as containing an FRL of 60/60/60. This 60 minute fire rating is not required to be maintained as the proposed White Box is neither a storage room, stage, back stage area or an auditorium. The Fire Compartmentation plans can be updated following issuance of the Crown Completion Certificate for this project.

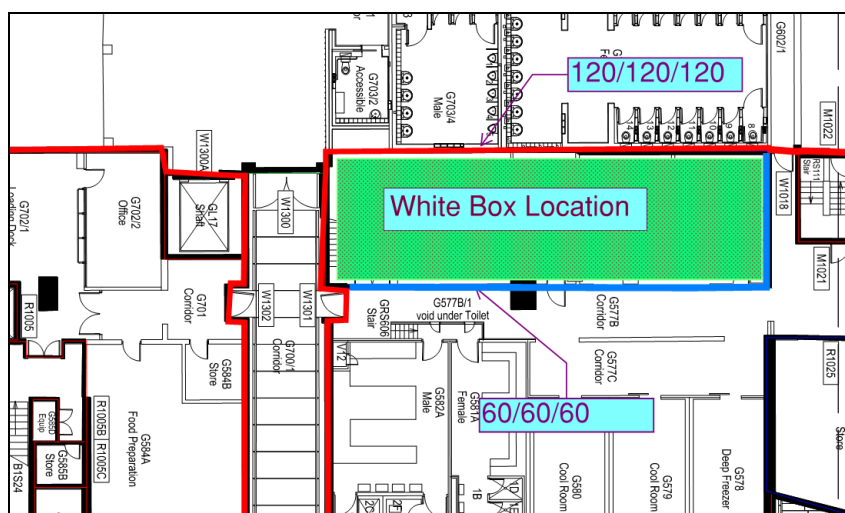


Figure 1 – Part Existing Fire Rating Plan – White Box area illustrated in green

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It is recommended that the Fire Hazard Property Test Reports of the various linings and coverings are submitted to this office for a compliance check prior to installation. The materials noted to date typically achieve a Materials Group Rating of Group 3, fire assessment of the veneer product fire hazard property test report is required.

Item	Location	Requirement
Floor linings or coverings	All floor areas throughout the complex, except fire isolated stairs	*CRF of no less than 1.2
Floor linings or coverings	Fire isolated stairs	CRF of no less than 2.2
Wall and ceiling linings	Fire isolated stairs	**Group Number 1
Wall and ceiling linings	Public Corridors	Group Number 1 or 2
Wall and ceiling linings	General Areas	Group Number 1, 2 or 3

Table 2 – Fire Hazard Properties

Note*: CRF stands for critical radiant flux, which is a BCA defined term as follows – “Critical radiant flux means the critical heat flux at extinguishment as determined by AS ISO 92391.1 – 2003.”

Note**: Group Number is a BCA defined term as follows – “Group number means the number of one of 4 groups of materials used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.”

No other issues identified.

C2 – Compartmentation and Separation

No issues identified at this stage.

C3 – Protection of Openings

The new sliding fire door and frame are required to achieve an FRL of -/120/30. Fire test reports for the specific product proposed will be required to be submitted prior to the issuance of the Crown Building Works Certificate.

D1 – Provision for Escape

BCA Clause D1.4 / 1.5 - The BCA maximum permitted travel distances are 20 m to an exit, or to a point in which travel in two different directions to two different exits is available, 40 m to the nearest exit of the two measure back from the starting point and 60 m between alternative exits measure through the point of choice. This can be illustrated as 20/40/60.

Whilst travels distances are altered slightly, the proposal has low impact on the current egress situation. Diagram 1 below illustrates excessive travel distances in the following areas as illustrated in Table 3 below, worst case scenarios illustrated only:

Location	DTS Travel Distance Requirement	Actual	Design Team Nominated Resolution
Western Foyer (as illustrated in blue in Figure 2.)	20/40/60	7/20/61	Under review. Option to delete the fire curtain currently being explored, which will solve this issue.
Oculus - Eastern most point (as illustrated in red in Figure 2.)	20/40/60	21/35/47	The Fire Safety Engineer has confirmed the feasibility of a Performance Solution which will be justified within the pending FER However, this scenario is only applicable if the southern staff access swing door is deleted. Currently under

Location	DTS Travel Distance Requirement	Actual	Design Team Nominated Resolution
			review.

Table 3 – Travel Distance Assessment – Worst Case only

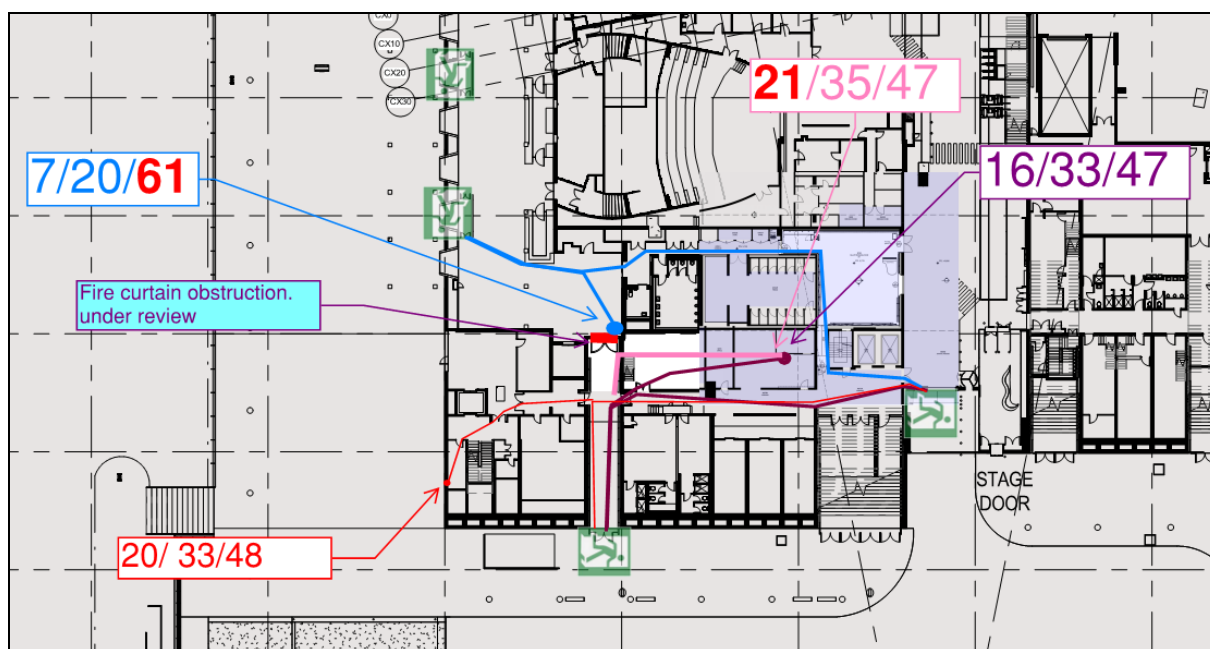


Figure 2 – Travel Distance Assessment

The internal discharge of the exits into the semi open Under the Steps area has been justified within current/existing Fire Engineered Report(s).

The Fire Safety Engineer will need to confirm that the required 1 m path of travel exit width from the White Room does not obstruct any minimum existing allowance width, resulting from aggregate egress calculations that exist in the current Fire Engineered Reports. The only concern is evacuating occupants from the Western Foyers, heading south into the Under the Steps.

NSW Table D1.13 nominates a population of 55 persons based on an area of 67 m, the user has noted that up to 90 persons may occupy in function mode. Whilst Clause D1.13(c) would allow the nomination of 90 persons, further discussion with the Fire Safety Engineer and Mechanical Engineer are required in relation to egress widths and supply air respectively.

D2 – Construction of Exits

The following deemed to satisfy BCA non-compliances have been identified at this stage, however it is understood that the Fire Safety Engineer will be providing justifiable Performance Solutions within the project Fire Engineered Report prior to the issuance of the Crown Building Works Certificate:

- No required panic/push bar to the sliding or hinged door from the White Box. Ref: BCA Clause NSW D2.21(d), Performance Requirement DP2.
- The use of a non-permitted sliding door in the path of travel to an exit. Ref: BCA Clause NSW D2.19(b)(v)(B), NSW D2.101, Performance Requirement DP2.

The failsafe operation of these doors is currently under review. If auto release of any locking mechanism is not immediately available on fire trip cause from anywhere in the building, then this issue may need to be considered by the Fire Safety Engineer for justification as a Performance Solution also.

D3 – Access for People with Disabilities

GROUP DLA

Refer Group DLA Access Consultants Report.

E1 – Fire Fighting Equipment

No obvious issues identified at this stage, refer Fire Services Engineers Report for further comment.

It's important to note that new works will be required to comply with BCA 2019. This stipulation would not be required to extend to the supporting infrastructure unless compliance with the new item(s) is directly compromised.

E2 – Smoke Hazard Management

No obvious issues identified at this stage, refer Fire Services Engineers Report for further comment.

It's important to note that new works will be required to comply with BCA 2019. This stipulation would not be required to extend to the supporting infrastructure unless compliance with the new item(s) is directly compromised.

E3 - Lift Installations

N/a

E4 – Emergency Lighting, Exit Signs and Warning Systems

Emergency lighting, exit signs and warning systems will need to be reviewed at the detailed design stage. Compliance can be readily achieved.

It's important to note that new works will be required to comply with BCA 2019. This stipulation would not be required to extend to the supporting infrastructure unless compliance with the new item(s) is directly compromised.

F1 – Damp and Weatherproofing

N/a, as the White Box is internal to the building.

F2 – Sanitary and Other Facilities

No changes to the current arrangements ,i.e. the White Box does not result in an increase in occupants nor a decrease in existing sanitary facilities.

F3 – Room Sizes

The ceiling height is in excess of 2.7 m.

F4 – Light and Ventilation

Compliance required. No issues identified at this stage of the design.

Part J – Energy Efficiency

The subject premises are located within Climate Zone 5.

New works are required to comply with the provisions of Section J. There is a transition period under BCA 2019 that allows BCA 2016 Section J to be applied on this project, if the invitation for tenders for the building works are issued before 1 May 2020. However, would recommend endeavouring to achieve BCA 2019 Section J where feasible and the summary advice below is in relation to BCA 2019 accordingly.

Compliance with Section J is required for this development as follows:

- BCA Part J0 – Energy Efficiency – Noted, no action required.
- BCA Part J1 – Building Fabric – Further discussion required during the detailed design stage. R1.8 insulation may be required to the new internal walls if they create a new building envelope line, TBC.
- BCA Part J2 – DELETED, if the moratorium is ignored.

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- BCA Part J3 – Building Sealing – Compliance may be required for the new doors however acoustic and fire rating provisions may see inherent compliance. Further discussion required at the detailed design stage.
- BCA Part J4 – DELETED.
- BCA Part J5 – Air-conditioning and Ventilation Systems – Certification from the mechanical consultant will be required prior to the issuance of the Crown Building Works Certificate.
- BCA Part J6 – Artificial Lighting and Power – Certification from the electrical consultant will be required prior to the issuance of the Crown Building Works Certificate.
- BCA Part J7 - Hot Water Supply and Swimming Pool and Spa Plant – N/a.
- BCA Part J8 – Access for Maintenance and Facilities for Monitoring – N/a.

NSW Part H101 – Entertainment Venues

Further assessment of the developed documentation is required against this part of the BCA.

However at this particular stage in the design, further consideration will need to be given to the following provisions:

- NSW H101.2 – N/A for these proposed works.
- NSW H101.3 – N/A for these proposed works.
- NSW H101.4 - N/A for these proposed works.
- NSW H101.5 or 6 – N/A for these proposed works.
- NSW H101.11 – N/A for these proposed works.
- NSW H101.12 – N/A for these proposed works.
- NSW H101.13 – N/A for these proposed works.
- NSW H101.14 – N/A for these proposed works.
- NSW H101.15 – N/A for these proposed works.
- NSW H101.16 – The store room is being converted into a public space which no longer requires fire separation.
- NSW H101.17 – N/A for these proposed works. The White Box imagine equipment is not considered a projection suite for the purposes of this provision.
- NSW H101.18 - N/a for these proposed works.
- NSW H101.19 – Any alterations to the main switchboard will need to consider the implications of this provision.
- NSW H101.20 - Any alterations to the lighting will need to consider the implications of this provision.
- NSW H101.22 – N/A for these proposed works.
- NSW H101.23 – N/A for these proposed works.
- NSW H101.24 – N/A for these proposed works.

The proposed design appears to comply with the major requirements of the BCA. Where the level of detail is currently insufficient to determine full compliance, compliance with the deemed-to-satisfy provisions would be readily achievable within the general constraints of the current design.

Should you require further assistance or clarification please do not hesitate to contact the undersigned at your convenience

Yours sincerely



Shane Berry

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