APPENDIX 1: CLAUSE-BY-CLAUSE BCA ASSESSMENT

KEY:

- **Alternative Solution** — Will require further consideration under an Alternative Solution
- **Complies**: — The referenced plans show compliance with this clause
- **CRA** — Compliance Readily Achievable
- **Does not comply**: — The referenced plans do not comply with this clause
- **Further information required**: — The referenced plans do not show sufficient information to establish compliance with this clause. Further details and/or design certification, should be submitted with the application for Construction Certificate to the satisfaction of the Accredited Certifier.
- **Noted**: — Provisions contained within this BCA clause are provided for guidance, or are to be read in conjunction with other BCA clauses.
- **Not applicable**: — This clause is not applicable to the proposed development.

CLAUSE	REFERENCE	COMMENT
SECTION A – GENERAL PROVISIONS		
Part A3.2	Classification	Class 5 Office/Administration Class 6 Café/Restaurant/Bar Class 7b/8 Storage/Workshops Class 9b Assembly Building Class 9b Entertainment Venue
SECTION B – STRUCTURE		
Part B1	***Structural Provisions***	
B1.2	Determination of individual actions	**Noted** Structural engineering details prepared by an appropriately qualified structural engineer must be submitted prior to issue of the Construction Certificate. An importance Level of 3 is assumed for this building, i.e. containing a large number of people.
B1.3	Loads	**Noted** As above
B1.4	Materials & Forms of Construction	**Noted** The structural resistance of materials and forms of construction must be determined in accordance with the following, details of which should accompany the Application for Construction Certificate: + Masonry (including masonry-veneer, unreinforced masonry and reinforced masonry): AS 3700. + Concrete construction (including reinforced and prestressed concrete): AS 3600. + Steel construction— (i) Steel structures: AS 4100. (ii) Cold-formed steel structures: AS/NZS 4600. + Composite steel and concrete: AS 2327.1. + Aluminium construction: AS/NZS 1664.1 or AS/NZS 1664.2. + Timber construction: (i) Design of timber structures: AS 1720.1.

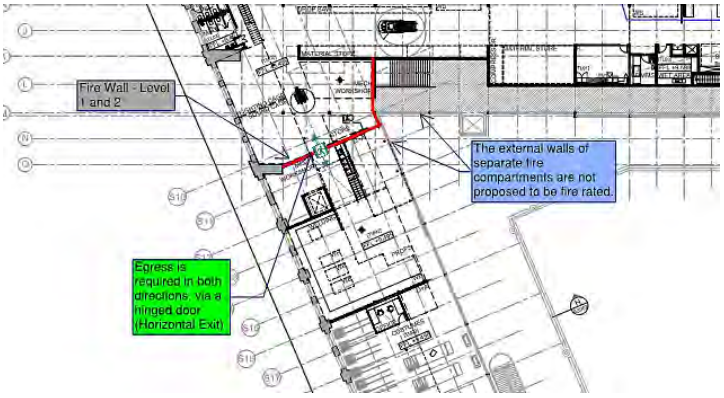
CLAUSE	REFERENCE	COMMENT
		(ii) Timber structures: AS 1684 Part 2, Part 3 or Part 4. + Piling: AS 2159. + Glazed Assemblies: (i) The following glazed assemblies in an external wall must comply with AS 2047: (A) Windows excluding those listed in (ii). (B) Sliding doors with a frame. (C) Adjustable louvres. (D) Shopfronts. (E) Window walls with one piece framing. (ii) All glazed assemblies not covered by (i) including the following glazed assemblies must comply with AS 1288 as applicable to the subject development: (A) All glazed assemblies not in an external wall. (B) Hinged doors, including French doors and bi-fold doors. (C) Revolving doors. (D) Fixed louvres. (F) Sliding doors without a frame. (G) Shopfront doors. + Termite Risk Management: Where a primary building element is subject to attack by subterranean termites: AS 3660.1.
SECTION C – FIRE RESISTANCE		
Part C1	***Fire Resistance & Stability***	
C1.1	Type of Construction	**Noted** Type A Construction is required. Building elements are required to achieve the required FRL's nominated under Table 3 of Specification C1.1 (refer to comments below under Specification C1.1 & Appendix 2).
C1.2	Calculation of Rise In Storeys	**Noted** Upon completion of the works the buildings will have a Rise in Storeys of five (5). The front office area includes an upper level storage space which constitutes a storey.
C1.3	Buildings of Multiple Classification	**Noted** Type A Construction applies.
C1.4	Mixed Types of Construction	**Noted** TYPE A construction will apply throughout.
C1.5	Two Storey Class 2, 3 or 9c Buildings	**Not Applicable**
C1.6	Class 4 Parts of Buildings	**Not Applicable**
C1.7	Open Spectator Stands & Indoor Sports Stadiums	**Not Applicable**

CLAUSE	REFERENCE	COMMENT
C1.8	Lightweight Construction	**Further Information Required** Lightweight construction must comply with Specification C1.8 if it is used in a wall system that is required to have an FRL. If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if— (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and (ii) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material. *Particular attention will need to be paid to any proposed lightweight separating construction as part of the compartmentation strategy (see Arup report recommendations) for the subject development and rationalisation of fire resistance levels within the building under the Fire Safety Strategy.* *Architect to note during the design development and confirm the full extent of lightweight construction required as the design develops.*
C1.9	*Repealed*	-
C1.10	Early Fire Hazard Properties	**Further Information Required** The fire hazard properties of any proposed floor or wall finishes, assemblies, or sarking material are to comply with Specification C1.10. Product data sheets and/or test reports showing the fire hazard properties of materials complying with C1.10 will need to be provided prior to issue of the Occupation Certificate accordingly. ***Note:*** *Refer also the requirements under the NSW variations which are applicable to Entertainment Venues.*
C1.11	Performance of External Walls	**Not Applicable**
C1.12	Non-Combustible Material	**Noted.** Materials listed in clause C1.12, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required.
Part C2	**Fire Compartmentation & Separation**	
C2.1	Application	**Noted.**
C2.2	General Floor Area Limitations	**Further Information Required.** Based on high level discussions with the project team we understand that the building will comply with the limitations set out in this clause. Further assessment will be undertaken in order to justify the proposed Fire Resistance Levels (FRLs) of specific fire rated elements of the building (see notes further in the report).
C2.3	Large Isolated Buildings	**Not applicable**
C2.4	Requirements for open space	**Not applicable**
C2.5	Class 9a & 9c Buildings	**Not applicable**
C2.6	Vertical separation of openings in external Walls	**Not Applicable.** We note that the existing building is provided with a sprinkler system throughout, upgraded to the degree necessary to ensure justification of the required fire engineering matters that are proposed.

CLAUSE	REFERENCE	COMMENT
C2.7	Separation by fire walls Fire walls must be constructed in accordance with the following: + FRL of 120/120/120 and extend to the underside of a floor with the same FRL, or to the underside of a non-combustible roof covering. + Any openings in a fire wall must not reduce the, except where permitted by the Deemed-to-Satisfy Provisions of Part C3 (i.e. fire doors; protection of services). + Building elements, other than roof battens with dimensions of 75mm x 50mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire resisting performance of the fire wall is maintained. A part of building separated from the remainder of the building by a fire wall may be treated as a separate building for the purposes of the provisions of Sections C, D and E if the wall concerned extends through all storeys and spaces in the nature of the storeys, carried to the underside of the roof covering. Notwithstanding there are additional requirements where one of the roofs is lower than the roof of another part.	**Further Information Required/Alternative Solution** We note that the building will be divided up into fire compartments **having a maximum floor area of 2000m²** for the purpose of removing the need for smoke exhaust throughout all parts of the class 9b building (noting that smoke exhaust will be required for the theatre areas due to the size of the stage exceeding 50m²). It is understood that this strategy will be achieved through the construction of fire walls in locations to be confirmed as the design progresses in consultation with project stakeholders, and these will generally be designed to encapsulate the and separate the Workshop areas from the Theatre and Assembly areas, and the assembly areas will be further subdivided to control the . Given the inherent conditions within the building we anticipate a number of building elements such as; roof trusses, floor joists and bearers, will pass through the proposed fire walls. In this regard, the Fire Safety Engineer will need to consider these penetrations under the proposed Fire Safety Strategy accordingly as the design progresses. ***Note:*** *Further to the comments above, refer also* ***H101.2 Fire Separation*** *covered later in this report with respect of the additional requirements applying as a result of the Entertainment Venue classification.*
C2.8	Separation of classifications in the same storey	**Alternative Solution** Fire separation is not proposed between the Class 6 and Class 9b parts. The deemed-to-satisfy provisions of the BCA require the FRL each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned, i.e. generally 3hr fire rating arising from the Class 6 classification, and 4 hours required for the storage and Workshop classification. Notwithstanding the above, we note that a fire engineered Alternative Solution is proposed for reduced FRLs having regard to the Class 6 part comprising a minor portion of the development, The Class 8 part remaining in place as an existing component of the building, however being primarily an ancillary part of the Theatre use, and the sprinkler protection throughout the development. ***Note:*** *Refer also the comments under Spec C1.1 with regards to Fire Engineered Strategy to rationalize a reduction in FRL's to 60min throughout in lieu of 120min and 240min.*

CLAUSE	REFERENCE	COMMENT
C2.9	Separation of classifications in different storeys	**Alternative Solution** Where parts of different classification are situated one above the other in adjoining storeys the floor between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. We note that it is proposed to justify reduced FRLs throughout including the separating floors to 60min. Further consultation with the fire safety engineer and structural engineer will determine the method of providing the appropriate FRLs for the new work, and the impact that will have on the existing structural floor and structural frame. The FER will develop a strategy of providing adequate smoke separation between floors to assist in mitigating against smoke migration during egress.
C2.10	Separation of lift shafts Any lift which connects more than 2 storeys, or more than 3 storeys if the building is sprinklered, (other than lifts which are wholly within an atrium) must be separated from the remainder of the building by enclosure in a shaft in which— (i) in a building required to be of Type A construction—the walls have the relevant FRL prescribed by Specification C1.1; and (ii) in a building required to be of Type B construction — the walls— (A) if loadbearing, have the relevant FRL prescribed by Table 4 of Specification C1.1; or (B) if non-loadbearing, be of non-combustible construction. Moreover any openings for lift landing doors and services must be protected in accordance with the requirements of Part C3 of the BCA.	**CRA** New lifts are proposed externally to the building (3 off) and 2 lifts will remain within the building serving Level 1 and 2. The lifts do not connect more than 3 storey of a sprinkler protected building and are therefore not required to be enclosed in a fire rated shaft. Notwithstanding, it is expected that the shaft walls will achieve the same FRL as the remainder of the structure and fire separating walls to maintain the principles of compartmentation within the building.
C2.11	Stairways and lifts in one shaft A stairway and lift must not be within the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft	**N/A**

CLAUSE	REFERENCE	COMMENT
C2.12	Separation of equipment	**Further Information Required** (a) Equipment other than that described in (b) and (c) must be separated from the remainder of the building with construction complying with (d), if that equipment comprises (i) lift motors and lift control panels; or (ii) emergency generators used to sustain emergency equipment operating in emergency mode; or (iii) central smoke control plant; or (iv) boilers; or (v) a battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours; (b) Equipment need not be separated in accordance with (a) if the equipment comprises— (i) smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or (ii) stair pressurising equipment installed in compliance with the relevant provisions of AS/NZS 1668.1; or (iii) a lift installation without a machine-room; or (iv) equipment otherwise adequately separated from the remainder of the building. (c) Separation of on-site fire pumps must comply with the requirements of AS 2419.1. (d) Separating construction must have— (i) except as provided by (ii)— (A) an FRL as *required* by Specification C1.1, but not less than 120/120/120; and (B) any doorway protected with a *self-closing* fire door having an FRL of not less than –/120/30; or (ii) when separating a lift *shaft* and lift motor room, an FRL not less than 120/-/-. Where applicable, fire ratings will need to be noted on the final architectural documentation accordingly.
C2.13	Electricity supply system	**Further Information Required** Where the proposed switchroom will sustain emergency equipment operating in the emergency mode it must be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and have any doorway in that construction protected with a self-closing fire door having an FRL of not less than - /120/30. All switchboards in the electrical distribution system, which sustain the electricity supply to the emergency equipment, must provide full segregation by way of enclosed metal partitions designed to prevent the spread of any fault from non-emergency equipment switchgear to the emergency equipment switchgear. Where applicable, fire ratings to be noted on the final architectural documentation. Particular attention should be paid to the proposed switch rooms within the building such as Switch room 1 and 2 to the ground floor as shown in the figure below.
C2.14	Public corridors in Class 2 & 3 buildings	**Not applicable**
Part C3	***Protection of Openings***	
C3.1	Application of Part	**Noted**
C3.2	Protection of openings in external walls	**Not Applicable** Openings in external walls will be situated more than 3m from the rear (northern) allotment boundary, and more than 6m from the far boundary of the adjoining roads. The external walls are not exposed to any other buildings on the allotment.

CLAUSE	REFERENCE	COMMENT
C3.3	Separation of openings in different fire compartments This clause sets out requirements for fire ratings and protection of opening requirements where one part is exposed to another as noted under Table C3.5.	**Alternative Solution** Fire walls are proposed in the interface between the Wharf and the Shorsheds area to limit the compartment sizes of the Workshops, i.e. there are a number of fire walls proposed to form fire compartments that have floor areas of not more than 2000m^2. Protection of openings and fire rating of the external wall cladding is not proposed to be undertaken in this instance. 
C3.4	Acceptable methods of protection Where protection is required, doorways, windows and other openings must be protected as follows: (i) Doorways: wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing, or –/60/30 fire doors (self-closing or automatic closing). (ii) Windows: wall-wetting sprinklers as appropriate used with windows that are automatic or permanently fixed in the closed position, –/60/– fire windows (automatic or permanently fixed in the closed position) or –/60/— automatic fire shutters. (iii) Other openings: wall-wetting sprinklers as appropriate or construction having an FRL not less than –/60/–.	**Noted** As above. Protection of openings in external walls is not proposed in this instance.

CLAUSE	REFERENCE	COMMENT
C3.5	Doorways in fire walls	**CRA** (a) The aggregate width of openings for doorways in a fire wall, which are not part of a horizontal exit, must not exceed ½ of the length of the fire wall, and each doorway must be protected by— (i) 2 fire doors or fire shutters, one on each side of the doorway, each of which has an FRL of not less than ½ that required by Specification C1.1 for the fire wall except that each door or shutter must have an insulation level of at least 30; or (ii) a fire door on one side and a fire shutter on the other side of the doorway, each of which complies with (i); or (iii) a single fire door or fire shutter which has an FRL of not less than that required by Specification C1.1 for the fire wall except that each door or shutter must have an insulation level of at least 30. (b) (i) A fire door or fire shutter required by (a)(i), (a)(ii) or (a)(iii) must be self-closing, or automatic closing in accordance with (ii) and (iii). (ii) The automatic closing operation must be initiated by the activation of a smoke detector, or any other detector deemed suitable in accordance with AS 1670.1 if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located on each side of the fire wall not more than 1.5 m horizontal distance from the opening. (iii) Where any other required suitable fire alarm system, including a sprinkler system complying with Specification E1.5, is installed in the building, activation of the system in either fire compartment separated by the fire wall must also initiate the automatic closing operation. *The sliding fire door protecting the opening in the Shoresheds fire wall will not achieve the FRL of -/240/30.*
C3.6	Sliding fire doors	**CRA** The sliding door in the Shoresheds workshop and storage areas is to be upgrade to the degree necessary to provide appropriate fire separation (Warning signs, flashing lights, audible alarm, detectors)..
C3.7	Protection of doorways in horizontal exits	**Alternative Solution** The doors in the Shorsheds Horizontal exit will not achieve an FRL more than 60 minutes.

CLAUSE	REFERENCE	COMMENT
C3.8	Openings in fire isolated exits Doorways that open into the fire-isolated stairways must be protected by –/60/30 FRL fire doors that are self-closing, or automatic-closing in accordance with the following: (i) The automatic-closing operation must be initiated by the activation of a smoke detector, or a heat detector if smoke detectors are unsuitable in the atmosphere, installed in accordance with the relevant provisions of AS 1670.1 and located not more than 1.5 m horizontal distance from the approach side of the opening. (ii) Where any other required suitable fire alarm system, is installed in the building, activation of the system must also initiate the automatic-closing operation.	**Not Applicable** We note that there are no fire isolated exits proposed to which this clause would apply.
C3.9	Service penetrations in fire Isolated exits The fire-isolated exit must not be penetrated by any services other than: (a) electrical wiring permitted by BCA cl. D2.7(e) to be installed within the exit; or (b) ducting associated with a pressurisation system if it— (i) is constructed of material having an FRL of not less than –/120/60 where it passes through any other part of the building; and (ii) does not open into any other part of the building; or (c) water supply pipes for fire services.	**Not Applicable** We note that there are no fire isolated exits proposed to which this clause would apply.

CLAUSE	REFERENCE	COMMENT
C3.10	Openings in fire isolated lift shafts (a) Doorways: The entrance doorways to the lift shafts must be protected by –/60/– fire doors that comply with AS 1735.11; and are set to remain closed except when discharging or receiving passengers or goods. (b) Lift indicator panels: A lift call panel, indicator panel or other panel in the wall of a fire-isolated lift shaft must be backed by construction having an FRL of not less than -/60/60 if it exceeds 35,000 mm^2 in area.	**N/A** The internal proposed lift shafts do not extend more than 3 storeys.
C3.11	Bounding construction Class 2, 3 and 4 buildings	**Not applicable**
C3.12	Openings in floors and ceilings for services Where a service passes through the new floors, or a ceiling required to have a resistance to the incipient spread of fire, the service must be protected by a shaft complying with Specification C1.1, or in accordance with C3.15. Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering	**Alternative Solution** By virtue of the building being of TYPE A construction the service must be protected by a shaft complying with the requirements of Spec C1.1, alternatively the requirements of C3.15 of the BCA. In this regard we note the FRLs of the building are proposed to meet a 60 minute criteria only as part of the FER.
C3.13	Openings in shafts	**Further Information Required** an opening in a wall providing access to a ventilating, pipe, garbage or other service shaft must be protected by— (a) if it is in a sanitary compartment — a door or panel which, together with its frame, is non-combustible or has an FRL of not less than –/30/30; or (b) a self-closing –/60/30 fire door or hopper; or (c) an access panel having an FRL of not less than –/60/30; or (d) if the shaft is a garbage shaft — a door or hopper of non-combustible construction. Penetrations within shafts will need to comply with the requirements of this clause. In this regard, architect to note during the design development and specify protection accordingly.
C3.14	Repealed	-

CLAUSE	REFERENCE	COMMENT
C3.15	Openings for service installations	**Further Information Required** Where electrical, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an external wall or roof) that is required to have an FRL or a resistance to the incipient spread of fire that installation must comply with clause C3.15. Penetrations through fire rated elements within the building will need to be protected in accordance with the requirements of this clause. Services consultants to note with particular attention being paid to the large number of fire walls proposed within the building.
C3.16	Construction Joints	**Further Information Required** Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL.
C3.17	Columns protected with lightweight construction to achieve an FRL	**Further Information Required** A column protected by lightweight construction to achieve an FRL which passes through a building element that is required to have an FRL or a resistance to the incipient spread of fire, must be installed using a method and materials identical with a prototype assembly of the construction which has achieved the required FRL or resistance to the incipient spread of fire. Note: Notwithstanding the above, we note that it is proposed to rationalise fire ratings to the existing building including the existing internal loadbearing columns. A copy of the Fire Engineering Report will need to be provided to BM+G for review and comment accordingly.
SPEC C1.1 Fire Resistance Construction		
1.	Scope	**Noted**
2.1	Exposure to fire source feature	**Noted**
2.2	Fire protection for support of another part	**Further Information Required** (a) Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part, subject to (b), must— (i) have an FRL not less than that required by other provisions of this Specification; and (ii) if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required— (A) for the supporting part itself; and (B) for the part it supports; and (iii) be non-combustible— (A) if required by other provisions of this Specification; or (B) if the part it supports is required to be non-combustible. (b) The following building elements need not comply with (a)(ii) and (a)(iii)(B): (i) A roof providing lateral support it complies with Clause 3.5(a), (b) or (d); (ii) A column providing lateral support to a wall where the column complies with Clause 2.5(a) and (b). (iii) An element providing lateral support to a fire wall or fire-resisting wall, provided the wall is supported on both sides and failure of the element on one side does not affect the

CLAUSE	REFERENCE	COMMENT
		fire performance of the wall.
2.3	Lintels	**Further Information Required**
2.4	Attachments not to impair fire-resistance	**Does Not Comply** (a) A combustible material may be used as a finish or lining to a wall or roof, or in a sign, sunscreen or blind, awning, or other attachment to a building element which has the required FRL if— (i) the material is exempted under C1.10 or complies with the fire hazard properties prescribed in— (A) Clause 2 of Specification C1.10; or (B) Clause 2 and 3 of Specification C1.10a; and (ii) it is not located near or directly above a required exit so as to make the exit unusable in a fire; and (iii) it does not otherwise constitute an undue risk of fire spread via the facade of the building. (b) The attachment of a facing or finish, or the installation of ducting or any other service, to a part of a building required to have an FRL must not impair the required FRL of that part.
2.5	General concessions	**N/A** Structures on roofs — A non-combustible structure situated on a roof need not comply with the other provisions of this Specification if it only contains:- (i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilating fans and their motors. (C) Air-conditioning chillers. (D) Window cleaning equipment. (E) Other service units that are non-combustible and do not contain combustible liquids or gases.
2.6	Mezzanine floors: Concession	**Further Information Required** Not Applicable
2.7	Shafts	**Further Information Required** Shafts required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non-loadbearing shaft in the same building, except that these provisions need not apply to— (a) the top of a shaft extending beyond the roof covering, other than one enclosing a fire-isolated stairway or ramp; or (b) the bottom of a shaft if it is non-combustible and laid directly on the ground.
2.8	Carparks in Class 2 & 3 buildings	**Not Applicable**
2.9	Residential Aged care buildings	**Not Applicable**

CLAUSE	REFERENCE	COMMENT
3.1	Type A Construction In a building required to be of Type A construction— (a) each building element listed in Table 3 and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and (b) external walls, common walls and the flooring and floor framing of lift pits must be non-combustible; and (c) any internal wall required to have an FRL with respect to integrity and insulation must extend to— (i) the underside of the floor next above; or (ii) the underside of a roof complying with Table 3; or (iii) if under Clause 3.5 the roof is not required to comply with Table 3, the underside of the non-combustible roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or roof sarking, must not be crossed by timber or other combustible building elements; or (iv) a ceiling that is immediately below the roof and has a resistance to the incipient spread of fire to the roof space between the ceiling and the roof of not less than 60 minutes; and (d) a loadbearing internal wall and a loadbearing fire wall (including those that are part of a loadbearing shaft) must be of concrete or masonry; and	**Alternative Solution** Notwithstanding the requirements under this Specification, we note that under the proposed Fire Engineering Strategy it is proposed to rationalise FRL's to 60min.
3.2	Concessions for floors	**Further Information Required** A floor need not comply with Table 3 if it is laid directly on the ground; or it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the required FRL. Note: The flooring to the platform seating need only be fire rated if the space below is accessible for storage or the like.

3.3	Floor loading of Class 5 and 9b buildings: Concession	**Further Information Required** It is assumed for the purpose of this clause that the building will need to be designed for a live load exceeding 3kPa.
3.4	Roof superimposed on concrete slab: Concession	**Not applicable**
3.5	Roof: Concession	**Further Information Required** As the building will be sprinkler protected throughout, the roof need not comply with Table 3 of BCA Specification C1.1 provided that its roof covering is non-combustible.
3.6	Rooflights	**Further Information Required** As the roof is required to be non-combustible, rooflights or the like installed in that roof must— (a) have an aggregate area of not more than 20% of the roof surface; and (b) be not less than 3 m from— (i) any boundary of the allotment other than the boundary with a road or public place; and (ii) any part of the building which projects above the roof unless that part has the FRL required of a fire wall and any openings in that part of the wall for 6 m vertically above the rooflight or the like are protected in accordance with C3.4; and (iii) any rooflight or the like in an adjoining sole-occupancy unit if the walls bounding the unit are required to have an FRL; and (iv) any rooflight or the like in an adjoining fire-separated section of the building.
3.7	Internal columns and walls: Concession	**Further Information Required** In the storey immediately below the roof, loadbearing internal columns and internal walls (other than fire walls) need not have an FRL.
3.8	Open spectator stands and indoor sports stadiums	**Not Applicable**
3.9	Carparks	**Not Applicable**
3.10	Class 2 buildings: Concession	**Not Applicable**
4	Type B Construction	**Not Applicable**
5	Type C Construction	**Not Applicable**

SECTION D - ACCESS AND EGRESS		
PART D1	***Provision for Escape***	
D1.1	Application	Part D1 applies to the subject building.
D1.2	Number of exits required	**Complies** The number of required exits is also derived from the exit travel distance, aggregate egress width and distances between alternative exits. ***Note 1:*** *Refer comments under D1.12 below with respect of the connection of the internal non-required stairways* ***Note 2:*** *NSW H101.7 contains additional provisions relating to number of exits applying to a grid or rigging loft (refer to comments below).*
D1.3	When Fire isolated exits are required	**N/A** We note that the non-fire isolated stairways within Pier 4/5 do not connect more than 3 storeys. Similarly, the external stairs accessed from the balconies also do not connect more than 3 storeys of the building. The building will be fully sprinklered throughout and therefore will not require fire isolation of exits.
D1.4	Exit Travel Distances	**Alternative Solution** Exit travel distances generally comply with the BCA DTS provisions with the exception of the following: ***Level 1 –*** *Up to 26m to a point of choice between alternative exits worst case when measured from Rehearsal; The Wharf Theatres will be assessed as a Performance Solution in the FER* ***Mezzanine –*** *Complies* ***Level 2 –*** *up to 25m from the Re-heat kitchen of the Function room; up to 30m to a single exit from the "Tech Gallery"; The Wharf Theatres will be assessed as a Performance Solution in the FER.* ***Level 3*** *– Exit distances will be exceeded within the lighting bridges above the Wharf Theatres.*
D1.5	Distances between alternative exits	**Alternative Solution** **Level 1** – distance between the external stair exits associated with the Wharf Theatre spaces extends to 97m in lieu of the required 60m.

<table>
<tr>
<td>D1.6</td>
<td>Dimensions of exits and paths of travel to exits.
In a required exit or path of travel to an exit-
- the unobstructed height throughout must be not less than 2m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm;
- the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1m;
- the unobstructed width of a doorway must be not less than the unobstructed width of each exit minus 250mm.
- Doorways serving the areas identified as Entertainment must have an unobstructed clear width of not less than 1m for doors used by the public.</td>
<td>Alternative Solution (for Level 1 Theatres only)
Having regards to the Sydney Theatre Company's population numbers (as indicated in the table below) we note the aggregate egress width is as follows.
Level 1: 1186 persons equates to 12m in exit width required. Eight (8) exits (1 x 2950mm stair and 7 x 1250mm stairs) equates to 11.7m of width for the "theatre part") of Level 1. Given that there are 2 additional exits provided at the Shoresheds areas to cater for the smaller population numbers in the Workshops and storage areas. It is noted that the FER will address the method of egress from the Wharf Theatre areas, assessing cueing, direction of occupants discharge depending on fire scenarios in differing areas.
<u>Proposed Stairs -</u>
Hickson Rd Entry - 2950mm
Grid 49-51 East - 1250mm
Grid 33-35 East - 1250mm
Grid 9-11 East -1250mm
Grid A-C [Existing] - 1250mm
Grid 37-39 West -1250mm
Grid 61-63 West -1250mm
Shoreshed- 1250mm
Information above supplied by Hassell. Table below supplied by Arup.
<table>
<tr><th>Description</th><th>Population</th></tr>
<tr><td>Theatre 1 and 2</td><td>650</td></tr>
<tr><td>Dressing Rooms</td><td>50</td></tr>
<tr><td>Rehearsal rooms</td><td>70</td></tr>
<tr><td>Rehearsal Support</td><td>20</td></tr>
<tr><td>The loft</td><td>40</td></tr>
<tr><td>Admin</td><td>100</td></tr>
<tr><td>Scenic Art</td><td>6</td></tr>
<tr><td>Costume/wardrobe</td><td>20</td></tr>
<tr><td>Kitchen</td><td>30</td></tr>
<tr><td>Theatre bar</td><td>200</td></tr>
<tr><td>Function Space</td><td>200</td></tr>
<tr><td>Archive</td><td>3</td></tr>
<tr><td>Techworld</td><td>10</td></tr>
<tr><td>Props store</td><td>5</td></tr>
<tr><td>The Walk</td><td>20</td></tr>
<tr><td>Plant room</td><td>3</td></tr>
<tr><td>Production offices</td><td>15</td></tr>
<tr><td>Production meeting</td><td>30</td></tr>
<tr><td>Multimedia suite</td><td>10</td></tr>
<tr><td>Store</td><td>4</td></tr>
<tr><td>Atrium (transient space)</td><td>20</td></tr>
<tr><td>Total</td><td>1506</td></tr>
</table>
</td>
</tr>
</table>

D1.7	Travel via fire isolated exits: A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from— (i) a public corridor, public lobby or the like; or (ii) a sole-occupancy unit occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. A ramp must be provided at any change of level less than 600mm in a fire isolated passageway in a Class 9 building.	**Not Applicable** The stairs serving the Sydney Theatre Company tenancy do not connect or pass by more than 3 storeys (in a sprinklered Building.
D1.8	External stairways in lieu of fire-isolated exits. An external stairway or ramp may serve as a required exit in lieu of a fire-isolated exit serving a storey below an effective height of 25 m, if the stairway or ramp is— (i) non-combustible throughout; and (ii) protected in accordance with (c) if it is within 6 m of, and exposed to any part of the external wall of the building it serves	**Not Applicable** The external stairs do not connect more than 3 storeys. ***Note:*** *Refer also comments under D1.9 below with respect of the non-fire isolated stairways.*

D1.9	Travel by non fire isolated stairways or ramps. A non-fire-isolated stairway or non-fire-isolated ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. Moreover the maximum distance from any point of the floor to a point of egress to a road or open space is to be not more than 80m with the discharge point not being more than 20m to a door providing egress to a road or open space or a fire isolated passageway leading to a road or open space or 40m from one of two such doorways or passageways located in opposite directions.	**Alternative Solution** In light of the above, the projects Fire Safety Engineer will need to justify the means of travel via the required non-fire isolated stairways throughout the building - travel via the non-fire isolated exits exceeds 80m from the Wharf Theatres, and also in most instances from Level 2 and 3. Note, Level 1 is provided with direct access to the upper road (from the Shoresheds), however, the exits from the Wharf proper is generally via the external stairs which commence at Level 2.
D1.10	Discharge from exits + Where the required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than— (i) the minimum width of the required exit; or (ii) 1 m, whichever is the greater. + Where the exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D3. + In addition to the above, where an exit discharges to open space the link between this point and the road connected must be opened to the sky for its entire length.	**Further Information Required/Alternative Solution** Suitable barriers such as bollards and the like should be placed outside of the required exits where there is the potential for a vehicle to block access or discharge from the exit in the event of an emergency. It is understood that vehicular movement is expected around the outside of the wharfs in this regard bollards will need to be allowed for accordingly. The project's Fire Safety Engineer will need to rationalise the path of travel to the road not being open to its sky for its entire length noting that occupants are required to pass under the existing bridge structures.

D1.11	Horizontal exits	**Complies** The horizontal exits in the Shoresheds will comply with this clause for sufficient floor area on either side of the wall.
D1.12	Non-Required stairways ramps or escalators	**Not Applicable**
D1.13	Number of persons accommodated	**Noted** Refer to Cl D1.6 above
D1.14	Measurement of distances	**Noted**
D1.15	Method of measurement	**Noted**
D1.16	Plant rooms & lift motor rooms: Concession	**Noted** (a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100m^2; or (ii) all but one point of egress from a plant room or a lift machine room with a floor area of not more than 200m^2. (b) A ladder permitted under (a)— (i) may form part of an exit provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) must comply with— (A) AS 1657 for a plant room; and (B) AS 1735.2 for a lift machine room.
D1.17	Access to lift pits	**Noted** Access to lift pits must— (a) where the pit depth is not more than 3m, be through the lowest landing doors; or (b) where the pit depth is more than 3m, be provided through an access doorway complying with the following: (i) In lieu of D1.6, the doorway must be level with the pit floor and not be less than 600mm wide by 1980mm high clear opening, which may be reduced to 1500mm where it is necessary to comply with (ii). (ii) No part of the lift car or platform must encroach on the pit doorway entrance when the car is on a fully compressed buffer. (iii) Access to the doorway must be by a stairway complying with AS 1657. (iv) In lieu of D2.21, doors fitted to the doorway must be— (A) of the horizontal sliding or outwards opening hinged type; and (B) self-closing and self-locking from the outside; and (C) marked on the landing side with the letters not less than 35 mm high: “DANGER LIFTWELL – ENTRY OF UNAUTHORIZED PERSONS PROHIBITED – KEEP CLEAR AT ALL TIMES”

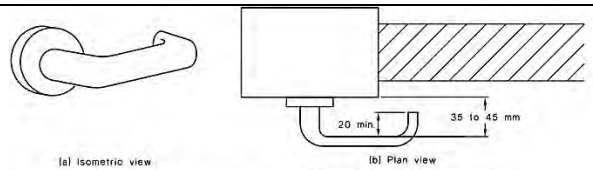
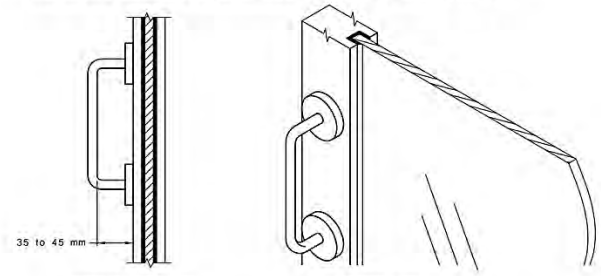
PART D2	***Construction of Exits***	
D2.1	Application of Part	**Noted**
D2.2	Fire-Isolated stairways & ramps	**Noted** A stairway or ramp (including any landings) that is required to be within a fire-resisting shaft must be constructed— (a) of non-combustible materials; and (b) so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of, the shaft.
D2.3	Non-Fire-Isolated stairways and ramps	**Noted** Required stairs and ramps (including landings and any supporting building elements) which are not required to be within a fire-resisting shaft, must be constructed according to D2.2, or only of— (a) reinforced or pre-stressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.
D2.4	Separation of rising and descending stair flights	**Not Applicable** This applies to fire isolated exits only
D2.5	Open access ramps and balconies	**Not Applicable** This applies to fire isolated exits only
D2.6	Smoke lobbies A smoke lobby required by D1.7 must— (a) have a floor area not less than $6m^2$; and (b) be separated from the occupied areas in the storey by walls which are impervious to smoke, in accordance with this clause; and (c) at any opening from the occupied areas, have smoke doors complying with Clause 3 of Specification C3.4 except that the smoke sensing device need only be located on the approach side of the opening; and (d) be pressurised as part of the exit if the exit is required to be pressurised under E2.2.	**Noted** Applies to fire isolated exits or external stairs in lieu of fire isolated exits only.
D2.7	Installations in exits and paths of travel	**Further Information Required** (a) Access to service shafts and services other than to fire-

		fighting or detection equipment, must not be provided from the fire-isolated stairways. (b) An opening to any chute or duct intended to convey hot products of combustion from a boiler, incinerator, fireplace or the like, must not be located in any part of a required exit or any corridor, hallway, lobby or the like leading to a required exit. (c) Gas or other fuel services must not be installed in a required exit. (d) Services or equipment comprising— i. electricity meters, distribution boards or ducts; or ii. central telecommunications distribution boards or equipment; or iii. electrical motors or other motors serving equipment in the building, may be installed in: iv. a required exit, except for fire-isolated exits specified in (a); or v. in any corridor, hallway, lobby or the like leading to a required exit, if the services or equipment are enclosed by non-combustible construction or a fire-protective covering with doorways or openings suitably sealed against smoke spreading from the enclosure. (e) Electrical wiring may be installed in a fire-isolated exit if the wiring is associated with a lighting, detection, or pressurisation system serving the exit; or a security, surveillance or management system serving the exit; or the monitoring of hydrant or sprinkler isolating valves. Architect to note the above and specify construction accordingly. Particular attention will need to be paid to the electrical and communications equipment installed in the building.

D2.8	Enclosure of space under stairs and ramps. (a) Fire-isolated stairways and ramps-If the space below a required fire-isolated stairway or fire-isolated ramp is within the fire-isolated shaft, it must not be enclosed to form a cupboard or similar enclosed space. (b) Non fire-isolated stairways and ramps-The space below a required non fire-isolated stairway (including an external stairway) or non fire-isolated ramp must not be enclosed to form a cupboard or other enclosed space unless- (i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and (ii) any access doorway to the enclosed space is fitted with a self-closing -/60/30 fire door.	**CRA** See image below. We note that there does not appear to be any enclosures under the other non-fire isolated stairways to which this clause will apply. Notwithstanding, this will need to be further assessed as the design progresses. 
D2.9	Width of stairways	**CRA** The required width of a stairway must be measured clear of all obstructions such as handrails, projecting parts of balustrades or other barriers and the like; and extend without interruption, except for ceiling cornices, to a height not less than 2m vertically above a line along the nosings of the treads or the floor of the landing. A required stairway that exceeds 2m in width is counted as having a width of only 2m unless it is divided by a handrail, balustrade or other barrier continuous between landings and each division is less than 2m wide.
D2.10	Pedestrian ramps	**Noted** The pedestrian ramps must have a non-slip finish.
D2.11	Fire isolated passageways The enclosing construction of a fire-isolated passageway must have an FRL when tested for a fire outside the passageway in another part of the building. Concessions are available within this clause.	**Not Applicable**
D2.12	Roof as open space	**Not Applicable**
D2.13	Treads and risers	**Further Information Required** Stairways must have— (a) not more than 18 nor less than 2 risers in each flight. (b) except as permitted by (i), going (G), riser (R) and quantity (2R + G) in accordance with Table D2.13. (c) except as permitted by (i), goings and risers that are constant throughout in one flight.

		(d) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads. (e) treads which have a non-slip finish or an adequate non-skid strip near the edge of the nosings. (f) treads of solid construction (not mesh or other perforated material) if the stairway is more than 10m high or connects more than 3 storeys. (g) not more than 36 risers in consecutive flights without a change in direction of at least 30°. (h) in the case of a required stairway, no winders in lieu of a landing. (i) in the case of a non-required stairway:- - not more than 3 winders in lieu of a quarter landing. - not more than 6 winders in lieu of a half landing. - the going of all straight treads must be constant throughout the same flight - the going of all winders in lieu of a quarter or half landing may vary from the going of the straight treads within the same flight provided that the going of all such winders is constant. (j) conspicuous edges to the trads of steps must be used in the entertainment venue. ***Note:*** *In addition to the above, particular attention will need to be paid to the requirements under AS 1428.1-2009 relating to stairway construction. We understand that a suitably qualified Access Consultant has been engaged and in this regard they will need to review the proposed design and provide further comments accordingly.*
D2.14	Landings	**Noted** In a stairway landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each flight and each landing must: (i) be not less than 750 mm long, and where this involves a change in direction, the length is measured 500 mm from the inside edge of the landing; and (ii) have a non-slip finish throughout or an adequate non-skid strip near the edge of the landing where it leads to a flight below.
D2.15	Thresholds	**Further Information Required** The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf, unless the doorway opens to a road or open space, external stair landing or external balcony and a threshold ramp is provided in accordance with AS 1428.1-2009. Within an entertainment venue, the door sill openings to a road, open space, external stair landing balcony or the like is to be not more than 50mm in overall height. Architect to note the requirements above and specify door thresholds accordingly.

D2.16	Balustrades	**Further Information Required** ▪ Balustrades must be a minimum 1m above FFL, with a maximum opening of 125mm. ▪ In the EV parts of the building, external balustrades must be a minimum 1.2m above FFL. ▪ For floors more than 4m above the surface beneath, any horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing. Compliance is readily achievable for the new building work. The existing balustrades to the external balconies are to be upgraded to comply with the above. This is considered necessary due to the following reasons: 1. The additional population proposed within the building, primarily to the function space; and 2. The new egress methodology directs occupants from Level 2 into a westerly focus, resulting in a greater concentration of occupants, particularly patrons, to the western balcony in an emergency. Previously, the balcony was primarily back-of-house for staff and the current egress methodology from the theatres directs patrons through the existing passageway at the eastern side of the building; and 3. The interface between the existing balustrades and the new balustrades at the stairs will result in uneven balustrade heights across the balcony.
D2.17	Handrails	**Further Information Required** Handrails must be provided along at least one side of all stairways, and to at least both sides where the stairway exceeds 2m in width. Notwithstanding the above, note also the requirements under AS1428.1-2009 with regards to handrail installations.
D2.18	Fixed platforms, walkways stairways and ladders	**Noted** A fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail, balustrade or other barrier attached thereto may comply with AS 1657 in lieu of BCA clauses D2.13, D2.14, D2.16 and D2.17 if it only serves lift-motor rooms, plant-rooms, and the like.
D2.19 and NSW D2.19	Doorways and doors	**Further information Required** *All doorways serving the EV parts of the building must swing in the direction of egress other than those addressed by way of a fire engineered Alternative Solution.* Power operated sliding doors discharging to open space are to be fitted with a failsafe device which automatically opens these doors upon fire trip within the building. The egress doors will be subject to further assessment as the design progresses.
D2.20	Swinging doors	**CRA.**
D2.21	Operation of latch	**Further Information Required** All doors in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by a single hand downward action or pushing action on a single device which is located between 900mm and 1100mm from the floor.

		 FIGURE 35(A) EXAMPLE OF ACCEPTABLE DOOR HARDWARE FOR HINGED DOORS  FIGURE 35(B) EXAMPLE OF ACCEPTABE DOOR HARDWARE FOR SLIDING DOORS In the class 9b parts accommodating more than 100 people, all doors in a required exit, forming part of a required exit or in the path of travel to a required exit must be readily openable without a key by a single hand pushing action on a single device such as a panic bar which is located between 900mm and 1100mm from the floor. Architect to note the above and specify door hardware accordingly.
D2.22	Re-entry from fire isolated exits	**Not Applicable**
D2.23	Signs on doors	**CRA** Relates to passenger lifts (i.e. there are no proposed Fire Isolated Exits (a) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, a— (i) (A) required fire door providing direct access to a fire-isolated exit, (B) required smoke door, on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, on either the wall adjacent to the doorway or both sides of the door; and (ii) (A) fire door forming part of a horizontal exit; and (B) smoke door that swings in both directions; and (C) door leading from a fire isolated exit to a road or open space, on each side of the door.
D2.24	Protection of openable windows	**Not Applicable**

PART D3	***Access for people with disabilities***	
D3.1	Application of part	Refer Access Report from the Accredited Accessibility Consultant. ***Note****: there are some areas that are not provided with Vertical Access, e.g. The Loft Rehearsal. Such an area will require the formulation of an alternative solution.*

SECTION E - SERVICES AND EQUIPMENT		
PART E1	***Fire fighting equipment***	
E1.3	Fire Hydrants Required to serve the whole building. Design and installation to comply with BCA clause E1.3 & AS 2419.1-2005. In particular, please note the following: i) The fire hydrant booster assembly must be located within site of the main entry. ii) The fire hydrant booster assembly must be either affixed to the building or located remotely at least 10m from the building. iii) Where affixed to the building it must be separated from the building by a construction with a fire resistance rating of not less than 90/90/90 FRL for a distance of not less than 2m each side of and 3m above the upper hose connections in the booster assembly. iv) The fire hydrant booster assembly must be located a minimum 10m from the substation. v) Any fixed on-site pumpset which is located within the building must be in a clearly indicated room and have direct egress to a road or open space.	**Further Information Required/Alternative Solution** Notwithstanding the above, prior to determining the full extent of upgrade works that will be required throughout the building, the current status of the system including the coverage, pressure and flows will need to be confirmed by the project's hydraulic consultant. It is however clear that the existing hydrant outlets to Wharf 4/5 will need to be addressed by the projects Fire Safety Engineer given their location being less than 10m from the building served. ***Note:*** *The location of Fire Hydrant outlets, also the associated infrastructure including pumps and boosters will need to be shown on the final architectural plans accordingly.*
E1.4	Hose Reels Required to serve whole building. Design and installation to comply with BCA clause E1.4 & AS 2441-2005. Fire hose reels must provide coverage throughout the building and located within 4m of an exit. Fire Hose reels are to be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors (with	**Further Information Required/Alternative Solution** In light of the above, particular attention will need to be given to the various fire compartmentation walls that are proposed and hose reel coverage noting that they cannot pass through fire doors in calculating system coverage. There may be scope for hose reel coverage to be rationalised under the Fire Engineered Strategy through the provision of Fire Extinguisher coverage in lieu of. This will need to be confirmed in consultation with the projects Fire Safety Engineer accordingly. Hydraulic consultant to review and provide coverage mark-ups demonstrating compliance with the requirements of this clause, also that all points on the floor are provided with fire hose reel coverage accordingly.

	the exception of those doors that lead to fire separated ancillary use areas; doors mentioned in Clause C2.12 and C2.13 and C3.13).	
E1.5	Sprinklers	**Further Information Required** To be provided throughout the building. Installation to comply with BCA Specification E1.5 and AS 2118.1-1999. In line with the concept fire engineering brief, we understand that in addition to a compliant sprinkler system as noted above, the building will be provided with fast response sprinkler heads. In this regard, hydraulic consultant will need to note the requirements of this concept brief and make allowances accordingly. ***Note:*** *Further consultation with the Project's Fire Safety Engineer will be required to determine the requirements of the trial design and any additional fire safety measures required as a result.*
E1.6	Portable Extinguishers	**Further Information Required** Required to cover Class AE or E fire risks associated with emergency services switchboards and Class F fire risks involving cooking oils and fats in kitchens. To comply with clause E1.6 and AS 2444-2001.
E1.7	Repealed	-
E1.8	Fire Control Centres Fire Control Centres complying with Spec E1.8 of the BCA are required in buildings with an effective height of more than 25m, also buildings with a floor area of more than 18,000m2.	**CRA** Whilst it is clear that the building will have an effective height less than 25m, the total floor area of the building will need to be confirmed The Base building WBAP works will be addressing requirements pertaining to the Fire Control Room.
E1.9	Fire precautions during construction	**Noted.** In a building under construction, not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit.
E1.10	Provision for special hazards	**Not Applicable**
PART E2	***Smoke Hazard Management***	
E2.1	Application of Part	**Noted**
E2.2	General requirements (including Tables E2.2a & b)	**Further Information Required / Alternative Solution** + Table E2.2b (NSW) – Class 9b Parts: Must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 l/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 11 of AS/NZS 1668.1) which does not form part of the smoke hazard management system, on the activation of smoke detectors installed complying with Specification E2.2a; and any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5. + Table E2.2b (NSW) – Class 9b 'Other Assembly Buildings': Any fire compartment exceeding 2,000m^2 must be provided

		with an automatic smoke exhaust system. ***Note:*** *We understand that it is proposed to divide the subject building into fire compartments to less than 2,000m^2 so as to avoid the need for smoke exhaust within the existing building (see below for stages).* *The final location of the proposed fire compartment walls will need to be denoted on the architectural documentation and the maximum fire compartment sizes will need to be confirmed accordingly.* + An automatic smoke exhaust system complying with Specification E2.2b (including Figure 2.1) is required to be provided over stages more than 50m2 in floor area. Note 1: We understand that the building will have fire detection and alarm system complying with AS 1670.1-2015 installed throughout in addition to a SSISEP system. The project's Fire Safety Engineer has developed a Fire Safety Strategy for compartmentation and smoke hazard management. Note 2: *An automatic smoke exhaust system complying with Specification E2.2b (including Figure 2.1) is required to be provided over stages more than 50m^2 in floor area. A fire safety strategy will be developed to provide smoke exhaust systems to the degree necessary rather than full compliance with BCA Clause E2.2b.*
E2.3	Provision for special hazard	**Not Applicable**
PART E3	***Lift Installations***	
E3.1	Repealed	-
E3.2	Stretcher facility in lifts	**Not Applicable** The building does not have any lifts serving an Effective Height of more than 12m.
E3.3	Warning against use of lifts in fire	**CRA** Warning sign will be required adjacent to entry to the lifts in accordance with clause E3.3.
E3.4	Emergency lifts	**Not Applicable**
E3.5	Landings	**CRA** The provisions of Clause 12.2- "Access" of AS 1735.2 do not apply.
E3.6	Facilities for people with disabilities	**CRA** The fitout of the passenger lifts must comply with AS1735.12 – lifts for people with disabilities.
E3.7	Fire Service Controls	**Not Applicable** The building does not have an effective height of more than 12m.
E3.8	Aged Care Buildings	**Not Applicable**
E3.9	Fire Services Recall control switch	**Not Applicable**
E3.10	Lift car fire service drive control switch	**Not Applicable**
PART E4	***Visibility in an emergency, exit signs and warning signs***	
E4.1	Repealed	-
E4.2	Emergency Lighting	**CRA** Required to serve the whole building.
E4.3	Measurement of distances	**Noted**

E4.4	Design and operation of emergency lighting	**CRA** Design and installation to comply with E4.2 & AS/NZS 2293.1-2005.
E4.5	Exit signs	**CRA** Exit signs to be provided to identify exit locations in accordance with E4.5.
E4.6	Direction signs	**CRA** If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.
E4.7	Class 2 and 3 Buildings and Class 4 parts exemptions	**Not Applicable**
E4.8	Design and operation of exit signs	**CRA** Design and installation to comply with E4.2 & AS/NZS 2293.1-2005.
E4.9	Sound Systems and Intercom Systems for Emergency Purposes (SSISEP)	**CRA** Required throughout the building. Installation to comply with AS 1670.4.

SECTION F - HEALTH AND AMENITY		
PART F1	***Damp & Weatherproofing***	
F1.1	Stormwater drainage	**Noted**
F1.2	Repealed	-
F1.3	Repealed	-
F1.4	External above ground membranes	**Noted**
F1.5	Roof coverings	**Further Information Required** All new roof coverings are to comply with the requirements of this clause.
F1.6	Sarking	**Further Information Required** New sarking-type materials used for weatherproofing of roofs and walls to comply with AS/NZS 4200 Parts 1 and 2.
F1.7	Waterproofing of wet areas in buildings	**Noted** Water proofing of new wet areas to comply with the relevant parts of AS 3740.
F1.8	Repealed	-
F1.9	Damp-proofing	**Noted** Damp-proofing to be provided in accordance with clause F1.9.
F1.10	Damp-proofing of floors on the ground.	**Noted** Not applicable to new building works
F1.11	Provision of floor wastes	**Not applicable**
F1.12	Sub-floor ventilation	**Noted** Sub floor ventilation must be provided in accordance with BCA clause F1.12 where a new suspended floor is proposed at ground floor level.
F1.13	Glazed assemblies	**Noted** Glazed assemblies in an external wall to comply with AS 2047 requirements for resistance to water penetration.
PART F2	***Sanitary & Other facilities***	
F2.1	Facilities in residential buildings	**Not Applicable**
F2.2	Calculation of number of occupants and fixtures	**Noted** In calculating the number of sanitary facilities, unisex accessible sanitary facilities have been counted once for each sex.

F2.3	Facilities in Class 3 to 9 Buildings, Table F2.3 + The construction and layout of all facilities provided in accordance with Table F2.4 must comply with AS 1428.1. The proposed design and sanitary compartment layouts will need to be reviewed by the projects access consultant accordingly. + A unisex facility must be located so that it can be entered without crossing an area reserved for one sex only. + Where two or more facilities for people with disabilities are required, the number of mirror image configurations of each facility shall be provided as evenly as possible. + Showers need to be provided at a rate of not less than 1 for every 10 provided under F2.3 of the BCA. + At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females.	**Further Information Required** Having regards to the proposed design and the nominated maximum population for each use (zone) as noted by STC/Hassell/Arup, the referenced plans show an adequate number of sanitary facilities based on: • The proposed shared use of the facilities between - Zone 1 - Class 9b (patron) & Class 6 (Bar); - Zone 2 - Class 5 (administration) and Class 7/8 (back of house areas); and - Zone 3 - Class 9b (participants) • Closet pans being counted as urinals in accordance with the provisions of Clause F2.6(a)(iii) Please refer to appendix 4 for the detailed calculation of sanitary facilities.
F2.4	Facilities for people with disabilities	**CRA** Compliance is readily achievable; Accessible unisex sanitary compartments are required to be provided at not less than 50% of sanitary compartments containing male and female sanitary compartments. The project's access consultant will need to review the current design and accessible sanitary facilities as the design progresses accordingly.
F2.5	Construction of sanitary compartments	**CRA** The door to a fully enclosed sanitary compartment must- (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the sanitary compartment, Unless there is a clear space of at least 1.2m between the closet pan within the sanitary compartment and the nearest part of the doorway.

F2.6	Interpretation: urinals and wash basins	**Noted** (a) A urinal may be— (i) an individual stall or wall-hung urinal; or (ii) each 600 mm length of a continuous urinal trough; or (iii) a closet pan used in place of a urinal. (b) A washbasin may be— (i) an individual basin; or (ii) a part of a hand washing trough served by a single water tap.
F2.7	Microbial control	**Not Applicable** Clause F2.7 does not apply in NSW.
F2.8	Waste management	**Not Applicable**

PART F3	***Room Sizes***	
F3.1	Height of rooms The ceiling height must be not less than: (i) Generally: 2.4m. (ii) Class 9b parts accommodating more than 100 people: 2.7m (iii) Commercial Kitchen: 2.4m (iv) A corridor, passageway, or the like: 2.1m (v) A sanitary compartment, airlock, tea preparation room, pantry, store room, or the like: 2.1m. The referenced plans indicate that compliance with the above requirements will not be achieved in various locations within Pier 2/3 as follows;	**Does Not Comply/Alternative Solution** **Ground Floor –** Particular attention will need to be given to the space below the Level 2 and Level 3 areas located below existing structural beams and trusses which create a head height obstruction by virtue of their position within the building The reduced heights and projections will need to be addressed through the development of an Alternative Solution prepared by a suitably qualified BCA consultant by satisfying ***Performance Requirement FP3.1***
PART F4	***Light & Ventilation***	
F4.1	Provision of Natural light	**Not Applicable**
F4.2	Methods and extent of natural lighting	**Not applicable**
F4.3	Natural light borrowed from adjoining room	**Not applicable**
F4.4	Artificial lighting	**CRA** Artificial lighting to comply with AS/NZS 1680.0 and provided to stairways and passageways, and all rooms that are frequently occupied, other circulation spaces and paths of egress.
F4.5	Ventilation of rooms	**CRA** Habitable rooms, sanitary compartments, and any other room occupied by a person for any purpose must have natural ventilation complying with F4.6; or mechanical ventilation or air-conditioning system complying with AS 1668.2.
F4.6	Natural ventilation	**Noted**
F4.7	Ventilation borrowed from adjoining rooms	**Noted**
F4.8	Restriction on position of water closets and urinals	**Complies**
F4.9	Airlocks	**Complies**
F4.10	Repealed	-
F4.11	Carparks	**Not Applicable**

F4.12	Kitchen local exhaust ventilation	**Further Information Required** Where a commercial kitchen proposed to any of the retail tenancies, it must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2 where- (a) any cooking apparatus has- (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas power input exceeding 29 MJ/h; or (b) the total maximum power input to more than one apparatus exceeds- (i) 0.5 kW electrical power; or (ii) 1.8 MJ gas, per m^2 of floor area of the room or enclosure.
PART F5	***Sound Transmission & Installation***	
F5.1	Application of Part Applies to Class2, 3, 4 parts and Class 9c buildings.	**Not Applicable**
SECTION G - ANCILLARY PROVISIONS		
G1.1	Swimming pools	**Not Applicable**
G1.2	Coolrooms, strongrooms etc.	**CRA** (a) A refrigerated or cooling chamber, strongroom or vault which is of sufficient size for a person to enter must have— (i) a door which is capable of being opened by hand from inside without a key; and (ii) internal lighting controlled only by a switch which is located adjacent to the entrance doorway inside the chamber, strongroom or vault; and (iii) an indicator lamp positioned outside the chamber, strongroom or vault which is illuminated when the interior lights required by (a)(ii) are switched on; and (iv) an alarm that is— (A) located outside but controllable only from within the chamber, strongroom or vault; and (B) able to achieve a sound pressure level outside the chamber, strongroom or vault of 90 dB(A) when measured 3m from the sounding device. (b) A door required by (a)(i) in a refrigerated or cooling chamber must have a doorway with a clear width of not less than 600 mm and a clear height not less than 1.5m.
G1.101	Provision for cleaning of windows	**Further Information Required** The building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level. In this instance, compliance will be achieved where the windows can be cleaned wholly from within the building; or provision is made for the cleaning of the windows by a method complying with the Construction Safety Act 1912 and regulations made under that Act.
G2	***Boilers, Pressure vessels, heating appliances, fireplaces chimneys and flues***	**Not Applicable**
G3	***Atriums***	

G3.1	Application of Part	**Not Applicable.** The proposed development does not contain any atriums connecting more than three storeys in a sprinkler protected building.
SECTION H - SPECIAL USE BUILDINGS		
H101.1	Application of Part	**Noted** The Wharf Theatres and associated stage and backstage areas are considered an Entertainment Venue (EV).
H101.2	Fire separation If an entertainment venue forms part only of a building, then: (a) the whole of the entertainment venue; or (b) the part containing the stage, backstage area and auditorium, must be separated from the other parts of the building by construction having an FRL of not less than 60/60/60.	**Further Information Required** In this instance, we understand that the entertainment venue parts will be fire separated from the remainder of the building. In this regard, the location of the fire separating walls will need to be confirmed as the design develops, with the locations clearly noted on the architectural documentation.
H101.3	Foyer space Where an entertainment venue is used principally for the purpose of— (a) exhibiting films; or (b) conducting live stage productions, A foyer space (excluding stairways and concession areas) must be provided on the basis of at least 0.25 m2 for each person that the auditorium accommodates.	**CRA** In light of the above, we note that the plans currently indicate that compliance is readily achievable, architect to note as the design progresses. This equates to: + Wharf 1 - 112m^{2}based on a population of 450 + Wharf 2 - 40m^{2}based on a population of 180 + Wharf 3 – 162.5m^{2}based on a population of 650
H101.4	Sprinkler system for common foyers	**Complies** In an entertainment venue, where multiple auditoriums have a foyer in common, the following applies— (a) If the foyer serves not more than 2 auditoriums; that foyer must be separated from any adjoining foyer by construction having an FRL of not less than 60/60/60. (b) If the foyer serves more than 2 auditoriums, a sprinkler system complying with Specification E1.5 must be installed— (i) throughout the storey containing the foyer; and (ii) throughout each storey in the building below that storey. *We note that a sprinkler system will be installed throughout in this regard compliance is achieved.*
H101.5	Conventional stages	**Further Information Required** Proscenium walls are not proposed for this STS development and therefore the stage areas do not constitute a Conventional Stage as defined by NSW H101.5.

H101.6	Non-conventional stages	**Complies** A stage with an area of more than 50m^2 must have at least a means of egress from the backstage area. In this regard, 2 exits are provided within the centre aisle space located between Wharf Theatre 1 and 2.
H101.7	Flying Scenery	**CRA** We note the following requirements: • Sprinkler system; • Non-combustible fly gallery, etc,;and with 2 exits; • Any steel supports to a stage tower is to be enclosed with 2 hour concrete
H101.8	Load notice	**CRA** A notice indicating the actual distributed and concentrated load for which the stage floor has been designed must be conspicuously and permanently displayed in a position adjacent to the stage floor. This notice must be in legible letters and figures— (a) at least 50 mm high; and (b) on a contrasting background
H101.10	Safety curtains	**Not Applicable to a non-conventional Stage**
H101.10.1	Safety curtains – Additional requirements	**Not Applicable**
H101.11	Seating in rows Applies to non-continental seating.	**Alternative Solution** Seating in rows must not exceed 8 where there is an aisle at one end only in the row; or 16 where there are aisle on both ends of the row. Some configurations of the Theatre options will result in departures from the prescriptive requirements of Clause 101.11
H101.12	Continental seating	**Not applicable** All seating options in the Wharf Theatres rely on Aisles and Crossovers for access and egress.
H101.13	Provision of guardrails	**Further Information Required** ▪ Guardrails must be provided— (a) along the fascia of each balcony or box; (b) if there is a stepped floor, along the front edge of each cross-over; and (c) where NSW H101.13.2 and NSW H101.13.3 apply. ▪ If seats with fixed backs are provided, guardrails that extend for the full width of the seating, must be provided at least 500 mm above the platform unless— (a) fixed seat backs of the next lower level project at least 500mm above the level of the stepped platform; and (b) there is only one riser between the platform and the next lower cross-over. ▪ If— (a) there is more than one intervening step in an aisle between levels of platforms, a guardrail must be provided (at a vertical height of at least 660mm measured above the nosing of each tread and of the upper platform) to the sides of the aisle adjacent to those steps; and (b) there is more than one intervening step in an aisle between levels of platforms, and that aisle is along a wall, a continuous guardrail must be affixed to that wall at a height of at least 865mm above the nosing of each

		tread; and (c) the end of a platform or the back of the highest platform does not abut a wall that extends at least 660mm above the floor level of the platform, a guard rail not less than 660mm high must be provided— (i) at the ends of the platform, extending from the front of the first riser to the back of the highest platform; and (ii) at the back of the highest platform, extending the full width of the platform; and (d) there is an inclined floor, the raised section of which is not bounded by walls at least 660mm high, a guard rail must be provided that extends around the perimeter of the raised section at a height of at least 660mm above the inclined floor level; and (e) seating at tables is provided on a stepped platform, a guardrail at least 500mm high must be provided along the front edge of the platform.
H101.14	Guardrails	**Further Information Required** **Continental seating** Where a guardrail is provided in front of a row of chairs— (a) the distance between the back of each chair in that row, and the guardrail must be not less than the distance specified in Column 2 of Table H101.12 for the number of chairs in that row; (b) the minimum lateral clearance between the front of each chair in that row and the guardrail must be not less than the clearance specified in Column 3 of Table H101.12 for the number of chairs in that row. **Balconies and boxes** A guardrail provided along the fascia of a balcony or box— (a) if it is located at the foot of a stepped aisle, must have its top surface at least 900mm above the floor of the balcony or box; and (b) if it is not located at the foot of a stepped aisle, must have its top surface at least 750mm above the floor; and (c) if it has a ledge more than 70 mm wide, must have the top surface of the ledge sloping downwards towards the floor of the balcony or box at an angle of at least 30 degrees from the horizontal; and (d) must have an unperforated kerb or toe guard extending for at least 300 mm above the floor. **Cross-overs** A guardrail provided along the front edge of a cross-over on a stepped floor— (a) must be at least 750 mm high; and (b) must extend for the full distance between aisles, or between a wall and an aisle, or for such other distance as considered necessary.
H101.15	Dressing rooms	**CRA / Complies** On the basis that the dressing rooms will be located within the Entertainment Venue part of the building they will need to be separated from the remainder of the building where they exceed 50m^2. Moreover in addition to the above, where part of the entertainment venue they will need to be provided with at least two (2) means of egress as remote from each other as possible with one discharging directly to road or open space, or through a fire isolated exit to road or open space. It is evident that both proposed change rooms have 2 means for independent egress.

H101.16	Storerooms	**Further Information Required** The various storerooms within the entertainment venue parts must be separated from other parts of the building by construction having an FRL of not less than 60/60/60.
H101.17	Projection suites This clause applies to projection suites. Projection Suites is defined under the BCA as part of the entertainment venue as is designated to accommodate apparatus used for projecting films (being cinematograph film of a size 35mm or greater).	**Not applicable**
H101.18	Basement storeys	**Not Applicable**
H101.19	Electric mains installation	
H101.19.1	Main switchboard	**Further Information Required** The switchboard containing the main isolation switch must: (a) be located in a position that is readily accessible to authorised persons, and to the Fire Brigade in the case of an emergency; and (b) be enclosed by construction having an FRL not less than 60/60/60. ***Note:*** *Refer also comments under C2.13 relating to the main switch board and additional fire separating requirements*
H101.19.2	Circuit protection	**Further Information Required** Protection of a final sub-circuit originating at a switchboard or distribution board must be by means of circuit breakers.
H101.19.3	Separate sub-mains	**Further Information Required** Where the EV areas will have its mains supply in common with that of another building or where it is a part of a building: (a) the EV part must be served by a separate and independent sub-main from the main switchboard; and (b) each such sub-main, the consumer's main and the supply authority's conductors within the building must be protected against fire by means of:- (i) mineral-insulated metal-sheathed cables or other cables that provide at least 2 hours' fire protection; or (ii) heavy-duty PVC conduit or metallic pipe, concrete encased in walls or slabs with a minimum of 50mm cover; or (iii) heavy-duty PVC conduit or metallic pipe, buried at least 500 mm below ground level, for underground cabling.
H101.20	Lighting	
H101.20.1	Lighting switches	**Further Information Required** Any switch controlling the lighting system must not be accessible by the public. Where, during normal use, general lighting may be dimmed or switched off, an override switch to switch on all the general lighting instantaneously must be installed in the auditorium in a position accessible to management.

H101.20.2	Lighting levels	**Further Information Required** Where the lamps utilized in the general lighting are of a type that will not relight immediately after the restoration of the primary electricity supply to those lamps— (a) a time delay or other suitable means must be provided to maintain the emergency lighting for a period not less than that necessary to allow the general lighting lamps to restrike; or (b) lamps of a type that will provide immediate lighting must be installed and:- (i) arranged in such a manner as to ensure visual conditions not inferior to those required to be provided by the emergency lighting; and (ii) capable of being switched in common with the general lighting and of being controlled also by the override switch required by NSW H101.20.1(b).
H101.20.3	Provision of aisle lighting	**Further Information Required** Where general lighting is to be either dimmed or extinguished when the public is in attendance and where the floor is stepped or at an inclination greater than 1 in 12, aisle lights must be provided to illuminate the length of each aisle and the tread of each step therein.
H101.20.4	Aisle lighting power supply	**Further Information Required** Where an aisle light is installed in a seat frame, it must be supplied at a voltage of not more than 32 volts AC or 115 volts DC
H101.20.5	Aisle lighting alternative power supply	**Further Information Required** Aisle lighting must be provided with an alternative electricity supply that— (a) is capable of being automatically energised in the event of failure of the primary lighting electricity supply; and (b) complies with the provisions applying to emergency lighting.
H101.22	Automatic smoke-and-heat vents for stages	**Not Applicable**
H101.23	Solid fuel burning stoves and open fire places	**Not Applicable**
H101.24	Fuel gas cylinders	
H101.24.1	General	**Further Information Required** Where fuel gas cylinders will be housed in an enclosure outside the building in accordance with BCA clause H101.24.1. Fuel gas cylinders must comply with Clause B3.2 of the Australian LP Gas Installation Code.

H101.24.2	Fuel gas cylinder enclosures	**Further Information Required** The fuel gas cylinder enclosure: (a) must be located not less than 3 m from any window, door, vent or other opening; and (b) if located 3 m or more from a building must— i. have a concrete base; and ii. be constructed from heavy-gauge chain-wire mesh or other suitable material; and iii. be at least 1.8 m high; and iv. be so designed as to securely contain the fuel gas cylinders in a single line; and v. must be so designed as to allow cross ventilation; and (c) if located less than 3 m from a building must— i. have a concrete base; and ii. have 3 sides constructed from concrete or masonry; and iii. have a concrete roof; and iv. be so designed as to securely contain the fuel gas cylinders in a single line; and v. have a hinged, heavy-gauge chain-wire door capable of being secured against unauthorised entry; and vi. have its roof at least 600 mm above the uppermost fitting on any fuel gas cylinder housed therein.
H102	Temporary Structures	**Not Applicable**
H103	Drive-in theatres	**Not Applicable**
SECTION I - MAINTENANCE		
I1.1 (NSW)	Safety Measures	**Noted** The provisions of BCA Section I apply following completion of the development. Essential Fire Safety Measures must be maintained in accordance with the provisions of the Environmental Planning & Assessment Regulations 2000.
SECTION J - ENERGY EFFICIENCY		
The new building works will be subject to compliance with the Energy Efficiency Provisions of BCA Section J relating to: - J1: Building Fabric - J2: External Glazing - J3: Building Sealing - J5: Air-conditioning and ventilation systems - J6: Artificial lighting and power - J7: Hot water supply - J8: Access for maintenance The final Construction Certificate documentation from the architect, mechanical, electrical, and hydraulic engineers are to incorporate details demonstrating compliance with the above provisions (as applicable to their respective disciplines). In this instance, we recommend that a 'Section J Energy Efficiency' Report be obtained from an appropriately qualified ESD consultant prior to issue of the Construction Certificate.		

APPENDIX 2: TABLE 3 SPECIFICATION C1.1 (TYPE A CONSTRUCTION)

BUILDING ELEMENT	CLASS OF BUILDING — FRL: (IN MINUTES)	
	CLASS 5, 7A & 9	CLASS 7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is—		
For loadbearing parts—		
less than 1.5 m	120/120/120	240/240/240
1.5 to less than 3 m	120/ 90/ 90	240/240/180
3 m or more	120/ 60/ 30	240/240/90
For non- loadbearing parts—		
less than 1.5 m	–/120/120	–/240/240
1.5 to less than 3 m	–/ 90/ 90	–/240/180
3 m or more	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire-source feature to which it is exposed is—		
less than 3 m	120/–/–	240/–/–
3 m or more	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	120/120/120	240/240/240
INTERNAL WALLS—		
Fire-resisting lift and stair shafts—		
Loadbearing	120/120/120	240/120/120
Non- loadbearing	–/120/120	–/120/120
Bounding public corridors, public lobbies and the like—		
Loadbearing	120/–/–	240/–/–
Non- loadbearing	–/–/–	–/–/–
Between or bounding sole-occupancy units—		
Loadbearing	120/–/–	240/–/–
Non- loadbearing	–/–/–	–/–/–
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion—		
Loadbearing	120/ 90/ 90	240/120/120
Non- loadbearing	–/ 90/ 90	–/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES		
and COLUMNS—	120/–/–	240/–/–
FLOORS	120/120/120	240/240/240
ROOFS	120/ 60/ 30	240/90/60

It is noted that the Fire Safety Strategy from Arup will address FRLs for the new work to the degree necessary to ensure fire fighting operations are managed and egress is facilitated in an appropriate time frame.

APPENDIX 3: FIRE SAFETY SCHEDULE

STATUTORY FIRE SAFETY MEASURE	DESIGN/INSTALLATION STANDARD
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 – 2015
Automatic Fail Safe Devices	BCA Clause D2.21
Alarm Signalling Equipment (TBC)	AS1670.3 – 2015
Automatic Fire Suppression System (Sprinklers) *Throughout the building*	BCA Spec. E1.5 & AS 2118.1-1999
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 - 2005
Sound Systems and Intercom Systems for Emergency Purposes (SSISEP)	BCA Clause E4.9 & AS 1670.4 – 2015
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 - 2005
Fire Control Centre (TBC)	BCA Spec E1.8
Fire Dampers	BCA Clause C3.15, AS 1668.1 - 2015 & AS 1682.1 & 2 - 1990
Fire Doors	BCA Clause C2.12, C2.13, C3.5 & C3.8 and AS 1905.1 – 2015
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 - 2005
Fire Seals	BCA Clause C3.15, AS 1530.4 & AS4072.1 - 2005
Lightweight Construction	BCA Clause C1.8 & AS 1530.3 – 1999
Mechanical Air Handling Systems including automatic shutdown	BCA Clause E2.2, AS/NZS 1668.1 – 2015 & AS 1668.2 – 2012
Paths of Travel	EP&A Regulation Clause 186
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001
Required Exit Doors (power operated)	BCA Clause D2.19(b)
Smoke Exhaust System	BCA Table E2.2b (NSW) and BCA Specification E2.2b and Alternative Solution Report
Warning & operational signs	Section 183 of the EP&A Regulations 2000, AS 1905.1 - 2005, BCA Clauses D2.23, E3.3 & H101.8
Alternative solutions	TBC

NOTE: Additional fire safety measures may be required arising from the required fire engineered Alternative Solutions.

APPENDIX 3: EXIT LOCATIONS

See separate attachment titled BMG mark up 160927 – BCA

APPENDIX 4: PRELIMINARY SANITARY FACILITY CALCULATIONS

Note: Where sanitary facilities have not been designated m/f they have been assigned evenly between m/f
(Refer to the plans below for identification of the zones 1-4)

	CLASS	AREA	POPULATION
Zone 1	9b Patrons & 6 Bar area	Theatre 1 & 2	650
		Theatre bar	200
		Function Space	200
		Atrium	20
		Total	***1070***

SANITARY FACILITIES

Sanitary Facilities Required

		Closet Pans	Urinals	Washbasins
Males =	535	3	3	3
Females =	535	4		3

Sanitary Facilities Provided

		Closet Pans	Urinals	Washbasins
Males =	535	6 (+3)	5 (+2)	7 (+4)
Females =	535	11 (+7)		7 (+4)

	CLASS	AREA	POPULATION
Zone 2	5 Admin & 7/8 Back of house	Admin Levels 1 & 2	*100*
		Production offices	15
		Production meeting	30
		Rehearsal Support	20
		Scenic Art	6
		Costume/ robe	20
		Kitchen	30
		Archive	3
		Techworld	10
		Props store	5
		The Walk	20
		Plant room	3
		Multimedia suite	10
		Store	4
		Total	***276***

SANITARY FACILITIES

Sanitary Facilities Required

		Closet Pans	Urinals	Washbasins
Males =	138	7	4	7
Females =	138	10		7

Sanitary Facilities Provided

		Closet Pans	Urinals	Washbasins
Males =	138	8 (+1)	2 (-2)	8 (+1)
Females =	138	9 (-1)		8 (+1)

	CLASS	AREA	POPULATION
Zone 3	9b Participants	Dressing Rooms	50
		Rehearsal Room 1	35
		Rehearsal Room 2	35
		The Loft rehearsal space	40
		Total	***160***

SANITARY FACILITIES

Sanitary Facilities Required

		Closet Pans	Urinals	Washbasins
Males =	80	4	8	8
Females =	80	8		8

Sanitary Facilities Provided

		Closet Pans	Urinals	Washbasins
Males =	80	7 (+3)	0 (-8)	7 (-1)
Females =	80	7 (-1)		7 (-1)

Showers Required

1 shower for each 10 participants = 8*

Showers Provided

6 + 2 from back of house = 8

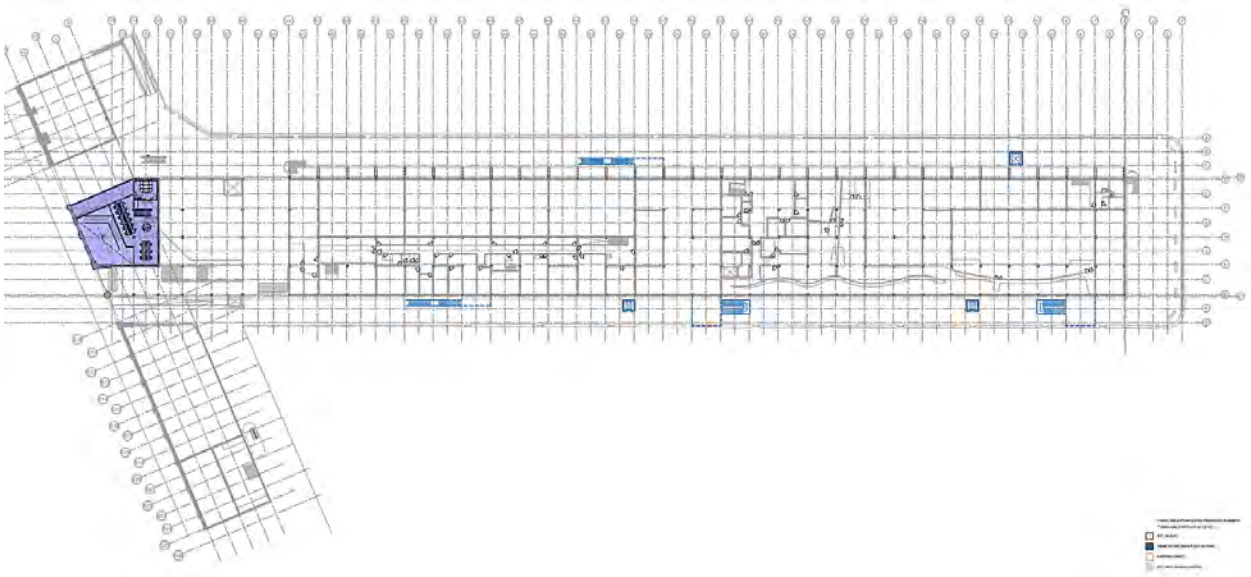
Total Population	1506				
Combined Zones	1506	**Sanitary Facilities Required**			
			Closet Pans	Urinals	Washbasins
		Males =	14	15	18
		Females =	23		18
		Sanitary Facilities Provided			
			Closet Pans	Urinals	Washbasins
		Males =	21 (+7)	7 (-8)	22 (+4)
		Females = 82	27 (+4)		23 (+5)
		Showers Required			
		1 shower for each 10 participants = 8*			
		Showers Provided			
		6 + 2 from back of house = 8			

*Notwithstanding the fact that Zone 3 has a population of 160, it is understood that only 72 of the 160 occupants in this area will be participants. Accordingly, the 8 showers provided are sufficient.

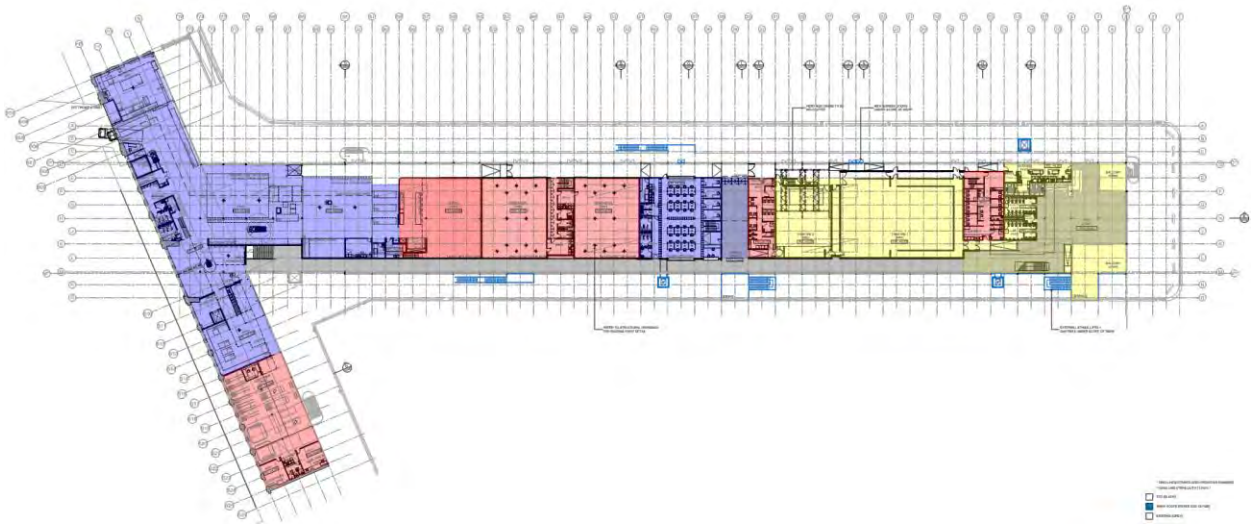
IDENTIFICATION OF SANITARY FACILITY ZONES

Zone 1 Class 9b (Patrons) + Class 6 (Bar)	Zone 2 Class 5 (Admin) + Class 7/8 (Back of House)	Zone 3 Class 9b (Participants)

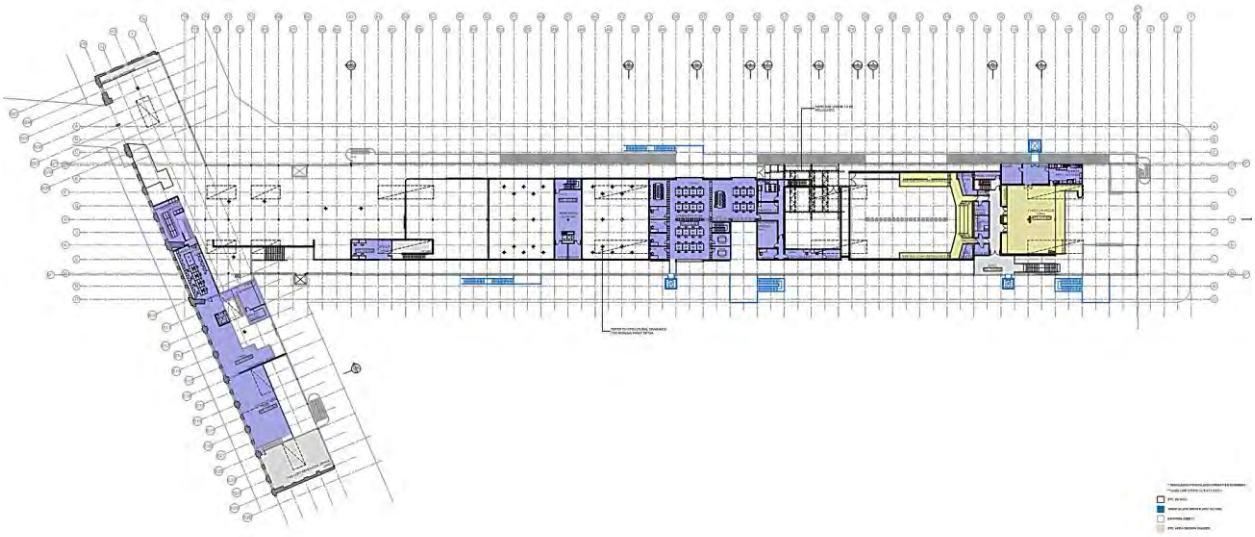
Legend



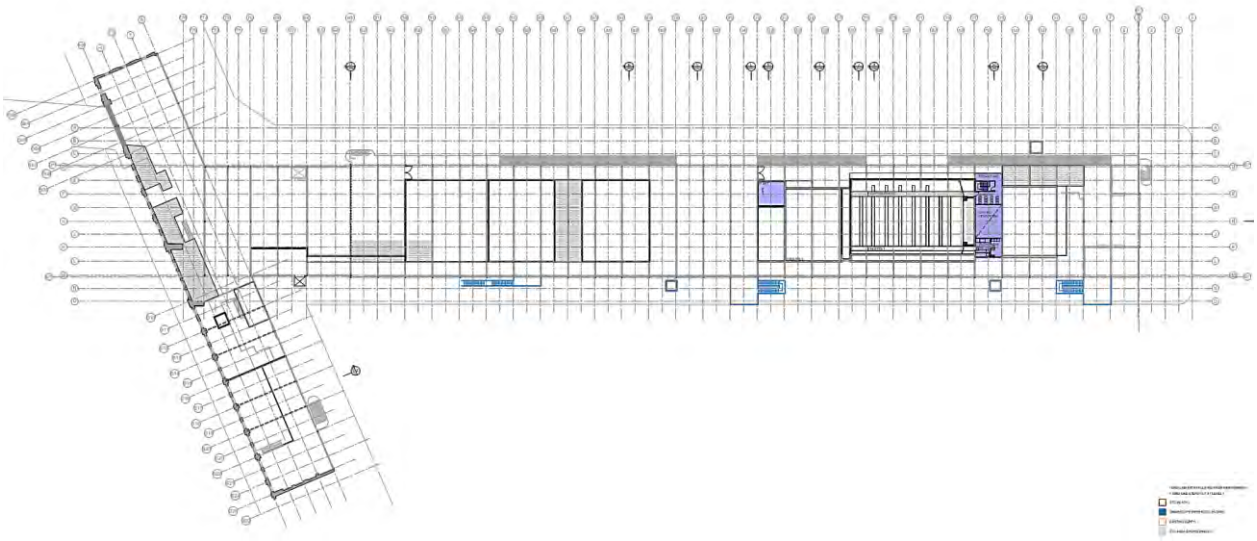
Mezzanine Level Plan



Level 1 Floor Plan



Level 2 Floor Plan



Level 3 Floor Plan