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Building Code of Australia 2008 Assessment Report

THE IVANHOE HOTEL
25-29 THE CORSO MANLY
S96 MODIFICATIONS AS PROPOSED

Prepared for: Hilrok Properties Pty Ltd

Project No.: 09/0107

Date: 30TH MARCH 2009

Status: FINAL

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1.0 INTRODUCTION

In accordance with the Accredited Certifier's role under clause 145 of the *Environmental Planning & Assessment Regulations 2000*, we have undertaken an assessment of the proposed S.96 modifications to 25-29 the Corso, Manly against the Deemed-to-Satisfy provisions of the Building Code of Australia 2008 (BCA) and a re-assessment of the original BCA Report dated 7th May 2008.

1.1 Referenced Documents

The report is based on the review of the following documents:

- Architectural drawings prepared by Paul Kelly Design, reference AG-100-101, A1-100-101 and A-200-201, Revision A dated February 2009 and emailed correspondance from Paul Kelly Design dated the 13th and 26th March 2009.
- Building Code of Australia 2008.
- Guide to the Building Code of Australia 2008.
- Environmental Planning & Assessment Act 1979
- Environmental Planning & Assessment Regulations 2000
- BCA Report by Dix Gardner Pty Ltd, dated 7th May 2008.

1.2 Limitations

The DA architectural plans generally do not show detailed compliance with all the relevant provisions of the BCA. Accordingly, pursuant to clause 145 of the EP&A Regulation 2000, the proposed building works should be subject to a detailed assessment against the BCA prior to issue of the Construction Certificate. In this regard, the Council or Accredited Certifier should not issue the Construction Certificate unless they are satisfied that sufficient documentation has been submitted detailing compliance with the BCA.

This report comprises an assessment of the proposed changes against the BCA 2008, being the version of the BCA in force at the time of the assessment. Notwithstanding this, the building will be subject to compliance with the version of the BCA in force at the time of the receipt of the application for Construction Certificate, and should be re-assessed against this version of the BCA where necessary.

This report has been prepared on the basis that the existing building complies with the building regulations in force at the time of construction, with the exception of any deficiencies identified within this report. A detailed assessment of the existing building against the current provisions of the BCA has not been undertaken.

No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner should be satisfied that their obligations under the DDA have been addressed. In this instance, further advice should be sought from an access consultant where required.

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1.3 Terminology

Building Code of Australia 2008 - Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Conditioned space - means a space within a building where the environment can be controlled by air-conditioning, but does not include a non-habitable room in which a heater with a capacity of not more than 1.2 kW provides the air-conditioning.

Fire Resistance Level (FRL) - means the grading periods in minutes for the following criteria -

(a) structural adequacy; and
(b) integrity; and
(c) insulation,

and expressed in that order.

Fire Source Feature (FSF) - the far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

Open space - means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

Performance Requirements of the BCA - A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

Compliance with the Performance Requirements can only be achieved by-
(a) complying with the Deemed-to-Satisfy Provisions; or
(b) formulating an Alternative Solution which-
  (i) complies with the Performance Requirements; or
  (ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or
(c) a combination of (a) and (b).

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2.0 BUILDING DESCRIPTION

2.1 Proposal

The subject site is bounded by two street frontages, The Corso to the east of the site, and Market Lane to the west of the site.

The proposed S96 modifications incorporates the extension of the Ivanhoe Hotel into adjoining lots No: 25 & 29 for the proposed bottle shop, coffee shop, pizza kitchen, gaming area, TAB, bar, outdoor bistro and smoking terraces to the existing hotel. We understand No 29 is under separate ownership and will be leased by the Ivanhoe Hotel for the Gaming and TAB area and No. 23 The Corso will be retained as an existing use with no works to be undertaken.

2.2 Building Characteristics

BCA CLASSIFICATION:	**Class 6**: Bistro, Coffee shop/Pizza kitchen/Bottle shop/ (part ground and part 1st floor) **Class 9b**: Assembly Building (POPE) (Basement ancillary use, part ground floor,1st and second floor levels)
RISE IN STOREYS:	3
TYPE OF CONSTRUCTION:	Type A
EFFECTIVE HEIGHT:	7.21m

3.0 BCA ASSESSMENT

CLAUSE	REFERENCE	COMMENT
SECTION A - GENERAL PROVISIONS		
Part A3.2	Classification	Class 6 (Bistro, Bar, Coffee shop, pizza kitchen and bottle shop) Class 9b (Assembly Building) POPE (NSW).
Part A4.1	When buildings are united	The subject building is assessed as a united building where two or more buildings adjoining each other (No. 25 & 27 and 29) are connected through openings in the walls dividing them and will comply with all of the requirements of the BCA as though they are a single building. We understand No. 29 (ground floor) is owned separately and will be leased by the Ivanhoe Hotel for their own use as part of the Hotel facility; this is subject to Leasing agreements between the Owner and tenant should the separate allotment of No 29 be returned to the Owner for use in relation to providing separate buildings.
SECTION B - STRUCTURE		
PART B1	***STRUCTURAL PROVISIONS***	
B1.2	Determination of individual actions	Structural engineering details prepared by an appropriately qualified structural engineer are to be submitted prior to issue of the Construction Certificate.
B1.3	Loads	As above
B1.4	Materials & Forms of Construction	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. (ii) Timber structures: AS 1684 Part 2, Part 3 or Part 4. (iii) Timber used for structural purposes: a species scheduled for the appropriate use in Schedules A, B or C in Queensland Forest Service of the Department of Primary Industries Technical Pamphlet No. 1—Building Timbers, Properties and Recommendations for their Use in Queensland. ▪ 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.

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CLAUSE	REFERENCE	COMMENT
		(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. ▪ Lift *shafts* which are not *required* to have an FRL: AS 1735.2 Clause 11.1.2.
SECTION C - FIRE RESISTANCE		
PART C1	***FIRE RESISTANCE & STABILITY***	
C1.1	Type of Construction	Type A Construction (*Refer to Appendix 1).*
C1.2	Calculation of Rise In Storeys	The building has a Rise in Storeys of 3
C1.3	Buildings of Multiple Classification	Noted. Type A Construction applies.
C1.4	Mixed Types of Construction	Not applicable to the proposed works
C1.5	Two Storey Class 2, 3 or 9c Buildings	Not applicable to the proposed works
C1.6	Class 4 Parts of Buildings	Not applicable to the proposed works
C1.7	Open Spectator Stands & Indoor Sports Stadiums	Not applicable to the proposed works
C1.8	Lightweight Construction	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 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.
C1.9	*Repealed*	-

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CLAUSE	REFERENCE	COMMENT
C1.10 (NSW)	Early Fire Hazard Properties	The fire hazard properties of any material or assemblies, and sarking material to comply with Specification C1.10 or C1.10a. Closed back upholstered chairs used in a class 9b (POPE) building where exposed to the preparation of meals or smoking are required to have a spread of flame index of not more than 6 and a smoke developed index of not more than 5. We note the use of weather protection awnings and coverings to the 2nd floor level within a Class 9 (POPE) area where public access is provided, the coverings are required to have a flammability index no greater than 6. Details or design certification are to be submitted prior to issue of the Construction Certificate to the satisfaction of the Accredited Certifier.
C1.11	Performance of External Walls	N/A as the subject building has a Rise in Stories of more than 2.
C1.12	Non-Combustible Material	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	The floor area and volume of the fire compartments do not exceed the limitations prescribed by BCA Table C2.2. This is based on separate fire compartments between No 23 and No 25 & 29 (ground floor) with a firewall separation in accordance with C2.7 as below. Please note the comments in relation to Clause A4.1 United Buildings, where the proposed fire compartment of No 25 & 29 comply with the provisions of this clause, however should No.29 be returned to the owner for separate use a firewall construction is required between the allotments constructed in accordance with Clause C2.7. We have calculated the whole building to No 25 &27 and the ground floor area of No 29 as the fire compartment area. It is assumed the remainder of No 29 is separated by existing firewalls with no connections to any other levels.
C2.3	Large Isolated Buildings	Not applicable to the proposed works
C2.4	Requirements for open space	Not applicable to the proposed works
C2.5 (NSW)	Class 9a & 9c Buildings	Not applicable to the proposed works
C2.6	Vertical separation of openings in external Walls	Not applicable as we understand the building is served with a sprinkler system throughout.

CLAUSE	REFERENCE	COMMENT
C2.7	Separation by fire walls	The existing party wall between No 23 and No 25 & 29 is to achieve the required fire wall provisions which will divide the buildings into complying fire compartments is required to be designed in accordance with C2.7(a) and (b). The fire wall is required to be vertical, an independent structural adequacy report will be required to confirm that the fire wall will be designed as to separate the two buildings from each other, no penetrations (particularly roof purlins) extending from the floor level to the underside of the roof sheeting are allowed to penetrate the fire wall. The roof of each compartment must be separate so if the roof fails, the fire wall in not compromised. Details of the proposed design are to be included in the Construction Certificate Application. Having regard to the above, the FRL's applicable the fire wall building elements would need to comply with those required for the Class 6 part of the building. In this instance, the following is required: - Fire Wall: 180/180/180 FRL Please note the comments in relation to Clause A4.1 and C2.2 above.
C2.8	Separation of classifications in the same storey	The higher FRL for the Class 6 component will apply to the ground and first floor of the building as it is the higher FRL for that storey. ➢ The ground floor loadbearing elements are to achieve an FRL of 180/180/180 ➢ The first floor loadbearing elements are to achieve an FRL of 180/180/180 ➢ The second floor loadbearing elements are to achieve an FRL of 120/120/120 We note the proposed change of use at Ground floor for the bottle shop , this and other Class 6 and 9b areas require the higher FRL of 180/180/180 to all building elements or separation to all Class 6 areas with a fire wall achieving an FRL of 180/180/180. Confirmation of the current FRL's of the building would be required prior to the Construction Certificate.
C2.9	Separation of classifications in different storeys	➢ The ceiling of the basement is to achieve an FRL of 180/180/180 ➢ The ceiling of the ground floor is to achieve an FRL of 180/180/180 ➢ The ceiling of the first floor is to achieve an FRL of 180/180/180 ➢ The ceiling/roof of the second floor is to achieve an incipient spread of fire of 60 minutes Confirmation of the current FRL's of the building would be required prior to the Construction Certificate. (See Spec C1.1 for concessions)
C2.10	Separation of lift shafts	The existing lift connects 4 storeys and is required to be contained within a shaft achieving 180/120/120 FRL.
C2.11	Stairways and lifts in one shaft	Not applicable to the proposed works
C2.12	Separation of equipment	Not applicable to the proposed works, unless further essential services are installed for smoke exhaust systems or on site fire pumps

CLAUSE	REFERENCE	COMMENT
C2.13	Electricity supply system	Details to accompany Construction Certificate A main switchboard located within the building which sustains emergency equipment operating in the emergency mode must— (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (ii) have any doorway in that construction protected with a self-closing fire door having an FRL of not less than –/120/30. Electrical conductors located within a building that supply— (i) a substation located within the building which supplies a main switchboard covered by (b); or (ii) a main switchboard covered by (b),must— (iii) have a classification in accordance with AS/NZS 3013 of not less than— (A) if located in a position that could be subject to damage by motor vehicles — WS53W; or (B) otherwise — WS52W; or (iv) be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120. Where emergency equipment is required in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault from the non-emergency equipment switchgear.
C2.14	Public corridors in Class 2 & 3 buildings	Not applicable to the proposed works
PART C3	***PROTECTION OF OPENINGS***	
C3.1	Application of Part	Noted
C3.2	Protection of openings in external walls	Not applicable to the proposed works to the front and rear glazing, we note the provision of curved glazing to the ground floor cafe which is within 3m of the side boundary however this is not exposed to a fire source feature as defined under Spec C1.1,Clause 2.1 (a) where this faces a wall with an FRL of 30/-/- Please note, separate allotments (boundaries) are provided between No 27 & 29, a fire source feature as defined under the BCA is a side boundary of an allotment. This clause however relates to openings in an external wall, the wall between the separate allotments is defined as a common wall and not an external wall.
C3.3	Separation of external walls and openings in different fire compartments	Not applicable to the proposed works
C3.4	Acceptable methods of protection	Not applicable to the proposed works
C3.5	Doorways in fire walls	Not applicable to the proposed works
C3.6	Sliding fire doors	Not applicable to the proposed works
C3. 7	Protection of doorways in horizontal exits	Not applicable to the proposed works

CLAUSE	REFERENCE	COMMENT
C3.8	Openings in fire isolated exits	Doorways to the existing fire isolated staircase are required to be protected by self-closing fire doors with a minimum FRL of -/60/30. We understand the existing fire isolated staircase to the rear of the building is separated at each level by self closing -/60/30 fire doors.
C3.9	Service penetrations in fire Isolated exits	Fire-isolated exits must only be penetrated by the following services: i) Electrical wiring permitted under Clause D2.7(e) within the exit; or ii) Ducting associated with a pressurisation system if it incorporates construction having an FRL not less than --/120/60 where it passes through another part of the building, and does not open into any other part of the building.
C3.10	Openings in fire isolated lift shafts	The lift shaft doors are required to achieve an FRL of -/60/- that comply with AS1735.11
C3.11	Bounding construction Class 2, 3 and 4 buildings	Not applicable to the proposed works
C3.12	Openings in floors and ceilings for services	Where a service passes through the floor separating the ground and first floor levels, the service must be protected by a shaft that will not reduce the fire performance of the building elements it penetrates or in accordance with C3.15.
C3.13	Openings in shafts	Where access to a ventilating, pipe, garbage or other service shaft is provided within a wall, protection must be provided as follows: i) In a sanitary compartment – a door or panel having an FRL not less than --/30/30; or ii) A self-closing --/60/30 fire door or hopper; or iii) An access panel with an FRL not less than --/60/30; or iv) If a garbage shaft – a door or hopper construction.
C3.14	Repealed	-
C3.15	Openings for service installations	Where an electrical, electronic, 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.
C3.16	Construction Joints	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	Not applicable to the proposed works
SPEC C1.1 FIRE RESISTANCE CONSTRUCTION		
3	Type A Construction	The FRL's of new building elements to comply with Specification C1.1 (Refer to Appendix 1)
4	Type B Construction	Not applicable
5	Type C Construction	Not applicable

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CLAUSE	REFERENCE	COMMENT
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 with this clause for two exits required to all levels for basements and class 9b assembly buildings
D1.3	When Fire isolated exits are required	The existing stair to the rear of the building is required to be a fire isolated exit where connecting 4 stories. The curved stair is not required to be fire isolated where this stair connects 3 storeys, as we understand the building is provided with a sprinkler system.
D1.4	Exit Travel Distances	The exit travel distances comply with the provisions of this clause to all levels.
D1.5	Distances between alternative exits.	Complies with this clause.
D1.6 (NSW)	Dimensions of exits	A minimum 1m clear width must be provided to all stairways and paths of travel to exits including all door openings in a required exit and on a path of travel to an exit. The aggregate width must not be less than 2m + 500mm for every 50 persons above 200 persons for each floor. Note: Population numbers have been provided by the Owner for each floor level for Licencing requirements: • **Basement: 12 persons proposed for the storage area (based on Table D1.13) the WC area is considered as part of the total occupancy assessment.** ➢ Required egress width is 1m ▪ Provided = 2.5m total aggregate exit width (Complies) • **Ground Floor: 450 persons proposed** ➢ Required egress width is 4.5m ▪ Provided = 10m total aggregate exit width, excluding the bottle shop (Complies) • **First Floor: 280 persons proposed** ➢ Required egress width is 3m ▪ Provided = 3.5m total aggregate exit width (Complies) • **Second Floor: 170 persons proposed** ➢ Required egress width is 1.75m ▪ Provided = 2.5m (Complies) *Half of the occupants are required to discharge other than through the main entry to each storey. (See NSW D1.10 below)
D1.7	Travel via fire isolated exits	Complies with this clause
D1.8	External stairways in lieu of fire-isolated exits	Not applicable to the proposed works

CLAUSE	REFERENCE	COMMENT
D1.9	Travel by non fire isolated stairways or ramps	Complies with this clause
D1.10 (NSW)	Discharge from exits	In a class 9b assembly (POPE) at least half of the required number of exits and half of the total aggregate exit width is required to discharge other than through the main entrance, this will comply with this clause to each floor level. Where it is possible for a vehicle to block the exit doors to the exits, a suitable barrier such as a bollard must be provided to prevent vehicles from blocking the exit, or access to it.
D1.11	Horizontal exits	Not applicable to the proposed works
D1.12	Non-Required stairways ramps or escalators	Not applicable to the proposed works
D1.13 (NSW)	Number of persons accommodated	Population for each floor provided by owner: Basement: 12 Ground Floor: 450 First Floor: 280 Second Floor: 170 **TOTAL: 912 persons.** **Note: See comments under D1.6 for population limits.*
D1.14	Measurement of distances	Noted
D1.15	Method of measurement	Noted
D1.16	Plant rooms & lift motor rooms: Concession	Noted
PART D2	***CONSTRUCTION OF EXITS***	
D2.1	Application of Part	Noted.
D2.2	Fire-Isolated stairways & ramps	Not applicable to the proposed works as the staircase is existing, although clarification would be required that the shaft is constructed with non-combustible materials.
D2.3	Non-Fire-Isolated stairways and ramps	The stairways must be constructed of: a) Reinforced or pre-stressed concrete; or b) Steel in no part less than 6 mm thick; or c) Timber that has a finished thickness of not less than 44 mm; and has an average density of not less than 800 kg/m3 at a moisture content of 12%; and 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	The existing fire isolated staircase would appear to be separated at ground floor level.
D2.5	Open access ramps and balconies	Not applicable to the proposed works
D2.6	Smoke lobbies	Not applicable to the proposed works
D2.7	Installations in exits and paths of travel	Not applicable to the proposed works however clarification is required that the existing fire stairs are free from services apart from essential fire services.

CLAUSE	REFERENCE	COMMENT
D2.8	Enclosure of space under stairs and ramps	Not applicable to the proposed works
D2.9	Width of stairways	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 2 m vertically above a line along the nosings of the treads or the floor of the landing.
D2.10	Pedestrian ramps	Not applicable to the proposed works
D2.11	Fire isolated passageways	Not applicable to the proposed works
D2.12	Roof as open space	Not applicable to the proposed works
D2.13 (NSW)	Treads and risers	Going & Riser dimensions to comply with D2.13. Each stairway must have not more than 18 risers in each flight. Conspicuous edges are required to each tread and the curved stairs where serving as a required exit must have an internal radius of not less than twice the width of the stair. Confirmation of construction details is required prior to the Construction Certificate.
D2.14	Landings	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. Confirmation of construction details is required prior to the Construction Certificate.
D2.15 (NSW)	Thresholds	In a class 9b building, doorways leading to an open space and external balconies must not have a floor level difference of more than 50mm. Confirmation of construction details is required prior to the Construction Certificate.
D2.16 (NSW)	Balustrades	Balustrades located internally are to be a minimum 1m above FFL with a maximum opening of 125mm. For floors more than 4 m above the surface beneath, any horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing. As this building is considered a POPE, all external balconies are required to have a balustrade height of 1.2m Confirmation of construction details is required prior to the Construction Certificate.
D2.17	Handrails	Handrails are required to one side of all staircases fixed at a height of 865mm minimum above the stair treads. Confirmation of construction details is required prior to the Construction Certificate.
D2.18	Fixed platforms, walkways stairways and ladders	Not applicable to the proposed works

CLAUSE	REFERENCE	COMMENT
D2.19 (NSW) D2.101(NSW) (Additional requirement for doors on a path of travel to comply with D2.19 (b) (v)	Doorways and doors	The sliding door from the balcony at 1st floor level is not a required exit, the existing swinging doors adjacent are to be the designated exits forming part of a required exit within a POPE area. The sliding doors to the cafe is also not a required exit, as sufficient required exits are located close by, which are to be designated exits.
D2.20	Swinging doors	All required exit doors swing in the direction of egress, the inward opening swinging cafe door is not a required exit and must not be designated as one. There are sufficient required exits close by which are to be designated exits.
D2.21 (NSW)	Operation of latch	Panic bars are required to all exit doors serving the POPE area that are required to be locked for security. A door 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 900 mm and 1200m from the floor. (including sliding doors). Confirmation of construction details is required prior to the Construction Certificate.
D2.22	Re-entry from fire isolated exits	Not applicable to the proposed works
D2.23	Signs on doors	Are required to the existing fire isolated staircase on or adjacent the fire door providing direct access and externally to the door leading to open space, signage to be in accordance with this clause.
PART D3	***ACCESS FOR PEOPLE WITH DISABILITIES***	
D3.1	Application of part	Noted
D3.2	Access to building	Access for people with disabilities is required to and within the whole building. Confirmation of construction details is required prior to the Construction Certificate.
D3.3	Parts of building to be accessible	The proposed disabled WC, existing lift, circulation areas, stairs, finishes and fittings, including ramps, signs, doorways and other parts of the building must comply with the provisions of AS 1428.1.
D3.4	Concessions	Noted
D3.5	Car Parking	Not applicable to the proposed works
D3.6	Identification of access facilities	Clear and legible Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access or deafness or other symbol as appropriate, in accordance with AS 1428.1 must identify each accessible toilet. Details to be submitted with the application for Construction Certificate.
D3.7	Hearing augmentation-listening system	Where an inbuilt amplification system, other than one used for emergency warning purposes only, is installed, a hearing augmentation system complying with AS 1428.1 must be provided in any conference room, meeting room or the like with a floor area of more than 100m^2.
D3.8	Tactile Indicators	Required to all stairways and ramps (as defined under AS 1428.1)

CLAUSE	REFERENCE	COMMENT
SECTION E	***SERVICES AND EQUIPMENT***	
PART E1	***FIRE FIGHTING EQUIPMENT***	
E1.1	Repealed	-
E1.2	Repealed	-
E1.3	Fire Hydrants	Coverage required to the whole building. Design and installation to comply with BCA clause E1.3 & AS 2419.1. Confirmation of construction details is required prior to the Construction Certificate.
E1.4	Hose Reels	Coverage required to the whole building. Design and installation to comply with BCA clause E1.4 & AS 2441. Confirmation of construction details is required prior to the Construction Certificate.
E1.5	Sprinklers	It is understood that the current Ivanhoe Hotel is protected by a sprinkler system throughout the building. The expansion of the hotel will require the existing sprinkler system to be upgraded and extended throughout the whole building. Any changes to the current design and installation are to comply with BCA specification E1.5.
E1.6	Portable Extinguishers	Coverage Required To comply with clause E1.6 and AS 2444.
E1.7	Repealed	-
E1.8	Fire Control Centres	Not applicable to the proposed works
E1.9	Fire precautions during construction	Portable fire extinguishers to be provided during construction in accordance with clause E1.9.
E1.10	Provision for special hazards	Not applicable to the proposed works

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CLAUSE	REFERENCE	COMMENT
PART E2	***SMOKE HAZARD MANAGEMENT***	
E2.1	Application of Part	Noted
E2.2	General requirements (including Tables E2.2a & NSW E2.2 b)	▪ It is noted that the building will be provided with a sprinkler system which will comply with one of the provisions for Table E2.2a for class 5, 6 and 9b buildings and Table E2.2b for Class 9b Buildings. ▪ The building must also 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. ▪ As the building and fire compartment area is less than 2000m² to a licensed premises the building is also required to incorporate one of the following smoke hazard management measures to all levels under table E2.2b: ○ An automatic smoke exhaust system complying with Specification E2.2b, or; ○ Roof mounted automatic smoke-and-heat vents complying with Specification E2.2c, in a single storey building or the top storey of a multi storey building or, ○ Sprinkler system complying with Specification E1.5 with **fast response sprinkler heads** or, ○ Automatic alarm and smoke detection system complying with AS1670.
E2.3	Provision for special hazard	Not applicable to the proposed works
PART E3	***LIFT INSTALLATIONS***	
E3.1	Repealed	-
E3.2	Stretcher facility in lifts	Not applicable to the proposed works
E3.3	Warning against use of lifts in fire	Signage is required to the lift in accordance with this clause near every call button
E3.4	Emergency lifts	Not applicable to the proposed works.
E3.5	Landings	Not applicable to the proposed works
E3.6	Facilities for people with disabilities	The following considerations should be made for every passenger lift in accordance with AS 1735.12: 1) Handrails; 2) Minimum internal floor dimensions; 3) Doors with a minimum clear opening as stipulated; 4) Door opening sensory devices which will detect a 75mm diameter rod across the door opening between 50mm and 1550mm above the floor level; 5) Car control device buttons in accordance with Section 7.
E3.7	Fire Service Controls	Not applicable to the proposed works
E3.8	Aged Care Buildings	Not applicable to the proposed works

CLAUSE	REFERENCE	COMMENT
PART E4	***EMERGENCY LIGHTING, EXIT SIGNS AND WARNING SYSTEMS***	
E4.1	Repealed	-
E4.2	Emergency Lighting	Required throughout the whole building.
E4.3	Measurement of distances	Noted.
E4.4	Design and operation of emergency lighting	Design and installation to comply with E4.2 & AS/NZS 2293.1.
E4.5	Exit signs	Exit signs to be provided to identify exit locations in accordance with E4.5.
E4.6 (NSW)	Direction signs	Directional signage is required to the ground and 1st floor smoking terraces where egress is required by either sliding door to the nearest required exit
E4.7	Class 2 and 3 Buildings and Class 4 parts exemptions	Not applicable to the proposed works
E4.8	Design and operation of exit signs	Design and installation to comply with E4.2 & AS/NZS 2293.1.
E4.9	Sound and Intercom Systems for emergency purposes	Required to be installed, to serve the Class 9b POPE building.
SECTION F - HEALTH AND AMENITY		
PART F1	***DAMP & WEATHERPROOFING***	
F1.1	Stormwater drainage	Not applicable to the proposed works
F1.2	Repealed	-
F1.3	Repealed	-
F1.4	Repealed	-
F1.5	Roof coverings	Not applicable to the proposed works
F1.6	Sarking	Not applicable to the proposed works
F1.7	Waterproofing of wet areas in buildings	Water proofing of wet areas to comply with the relevant parts of AS 3740.
F1.8	Repealed	-
F1.9	Damp-proofing	Damp-proofing to be provided in accordance with clause F1.9.
F1.10	Damp-proofing of floors on the ground.	Not applicable to the proposed works
F1.11	Provision of floor wastes	Not applicable to the proposed works
F1.12	Sub-floor ventilation	Not applicable to the proposed works
F1.13	Glazed assemblies	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 to the proposed works

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<table>
<tr><th>CLAUSE</th><th>REFERENCE</th><th>COMMENT</th></tr>
<tr><td>F2.2</td><td>Calculation of number of occupants and fixtures

Based on class 9b assembly use for public areas and the like.</td><td>Population 912
50/50 Male/Female split
Therefore: 456 Males & 456 Females

<table>
<tr><th>REQUIRED</th><th>PROPOSED</th><th>CLOSET PANS</th><th></th><th>URINALS</th><th></th><th>WASHBASINS</th><th></th></tr>
<tr><td colspan="2">MALE</td><td>3</td><td></td><td>7</td><td></td><td>4</td><td></td></tr>
<tr><td colspan="2">FEMALE</td><td>8</td><td></td><td colspan="2">N/A</td><td>4</td><td></td></tr>
</table>
Confirmation of facilities details is required prior to the Construction Certificate.

Note: The proposed unisex accessible toilet facility to the Basement and 1st floor level can be counted once for each sex in accordance with BCA clause F2.2.</td></tr>
<tr><td>F2.3</td><td>Facilities in Class 3 to 9 Buildings, Table F2.3</td><td>Complies with this clause</td></tr>
<tr><td>F2.4</td><td>Facilities for people with disabilities</td><td>The disabled toilet facility provided to the Basement and 1st floor level is required to comply with AS 1428.1. Details to be submitted with the Construction certificate.</td></tr>
<tr><td>F2.5</td><td>Construction of sanitary compartments</td><td>Complies with this clause
Note: Where sanitary doors swing within 1.2m of the closet pan, the door must be removed from the out side.</td></tr>
<tr><td>F2.6</td><td>Interpretation: urinals and wash basins</td><td>Noted</td></tr>
<tr><td>F2.7</td><td>Microbial control</td><td>Clause F2.7 does not apply in NSW.</td></tr>
<tr><td>F2.8</td><td>Waste management</td><td>Not applicable to the proposed works</td></tr>
<tr><td>PART F3</td><td>ROOM SIZES</td><td></td></tr>
<tr><td>F3.1</td><td>Height of rooms</td><td>Complies with this clause
Note: Class 9b building requires a clear ceiling heights of 2.7m</td></tr>
<tr><td>PART F4</td><td>LIGHT & VENTILATION</td><td></td></tr>
<tr><td>F4.1</td><td>Provision of Natural light</td><td>Not applicable to the proposed works</td></tr>
<tr><td>F4.2</td><td>Methods and extent of natural lighting</td><td>Not applicable to the proposed works</td></tr>
<tr><td>F4.3</td><td>Natural light borrowed from adjoining room</td><td>Not applicable to the proposed works</td></tr>
<tr><td>F4.4</td><td>Artificial lighting</td><td>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.</td></tr>
<tr><td>F4.5</td><td>Ventilation of rooms</td><td>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.

Details to be submitted prior to issue of the Construction Certificate.</td></tr>
<tr><td>F4.6</td><td>Natural ventilation</td><td>Noted</td></tr>
</table>

CLAUSE	REFERENCE	COMMENT
F4.7	Ventilation borrowed from adjoining rooms	Noted
F4.8	Restriction on position of water closets and urinals	Complies with this clause
F4.9	Airlocks	Complies with this clause
F4.10	Repealed	-
F4.11	Carparks	Not applicable to the proposed works
F4.12	Kitchen local exhaust ventilation	Details to accompany the Construction Certificate application
PART F5	***SOUND TRANSMISSION & INSTALLATION***	
F5.1	Application of Part	Noted
F5.2	Determination of airborne sound insulation ratings	Not applicable to the proposed works
F5.3	Determination of impact sound insulation ratings	Not applicable to the proposed works
F5.4	Sound insulation ratings of floors	Not applicable to the proposed works
F5.5	Sound insulation ratings of walls	Not applicable to the proposed works
F5.6	Sound insulation rating of services	Not applicable to the proposed works
F5.7	Sound isolation of pumps	Not applicable to the proposed works
SECTION G	***ANCILLARY PROVISIONS***	
G1.1	Swimming pools	Not applicable to the proposed works
G1.2	Coolrooms, strongrooms etc.	Noted
G1.101	Provision for cleaning of windows	Not applicable to the proposed works
G2	Heating Appliances	Not applicable to the proposed works
G3	Atriums	Not applicable to the proposed works
SECTION H	***SPECIAL USE BUILDINGS***	
H101.1	Application of Part	We note that part of the ground floor level and the first and second floor level is to be used as a Place of Public Entertainment (POPE), to which the provisions of NSW Part H101 apply.
H101.2	Fire separation	Where places of Public Entertainment form only part of a building, this is required to be fire separated from the adjoining non POPE area with construction achieving an FRL of not less than 60/60/60. This will not be achieved due to the different classification at Ground Floor level to the Bottle shop, café and pizza kitchen (class 6), the whole building could be designated as a POPE to eliminate this clause requirement or the preparation of an alternative solution to address this non compliance for Fire Separation requirements.

CLAUSE	REFERENCE	COMMENT
H101.3	Foyer space	We understand that the use of the proposed POPE area will not be used principally for live stage productions or the exhibiting of films, and therefore the provisions of H101.3 are not applicable.
H101.4	Sprinkler system for common foyers	Not applicable.
H101.5	Conventional stages	Not applicable. (The stage at ground floor level is less than 50m$^{2)}$
H101.6	Non-conventional stages	Not applicable.
H101.7	Flying Scenery	Not applicable.
H101.8	Load notice	A load notice is required to the DJ platform/stage area indicating the concentrated maximum loading.
H101.10	Safety curtains	Not applicable.
H101.11	Seating in rows	Not applicable.
H101.12	Continental seating	Not applicable.
H101.13	Provision of guardrails	Not applicable
H101.14	Guardrails	Not applicable
H101.15	Dressing rooms	Not applicable
H101.16	Storerooms	The basement store rooms are required to be fire separated from the adjoining POPE areas having an FRL of not less than 60/60/60.
H101.17	Projection suites	Not applicable
H101.18	Basement storeys	The existing required exits from the basement storey would appear to be enclosed in non-combustible construction to each staircase.
H101.19	Electric mains installation	
H101.19.1	Main switchboard	The main switchboard that contains the main isolation switch is required to be located in a position readily accessible by the Fire Brigade and enclosed by a construction achieving an FRL of 60/60/60.
H101.20	Lighting	
H101.20.1	Lighting switches	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	Where the lamps utilised 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).

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CLAUSE	REFERENCE	COMMENT
H101.20.3	Provision of aisle lighting	Not applicable
H101.20.4	Aisle lighting power supply	Not applicable
H101.20.5	Aisle lighting alternative power supply	Not applicable
H101.22	Automatic smoke-and-heat vents for stages	Not applicable, as there is no proposal to install or construct a stage within the building. (stage is under 50m2)
H101.23	Solid fuel burning stoves and open fire places	Not applicable
H101.24	Fuel gas cylinders	
H101.24.1	General	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. Certification of compliance in this instance should be provided to the PCA prior to the issue of an Occupation Certificate.
H101.24.2	Fuel gas cylinder enclosures	Fuel gas cylinder enclosures: (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.

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SECTION I	***MAINTENANCE***	***ESSENTIAL FIRE SAFETY MEASURES MUST BE MAINTAINED IN ACCORDANCE WITH THE PROVISIONS OF THE ENVIRONMENTAL PLANNING & ASSESSMENT REGULATIONS 2000. BUILDING OWNER/S TO NOTE POST CONSTRUCTION.***
SECTION J	***ENERGY EFFICIENCY***	
NSW J(A)	Energy Efficiency – Class 2 & 4 parts	N/A
NSW J(B)	Energy Efficiency – Class 3 Buildings	Sub-section J(B) is not applicable to the proposed development.
J1.2	Thermal construction general	New construction and insulation must be constructed in accordance with AS/NZS 4859.1.
J2.4	External Glazing	The glazing of a Class 6 and 9b building is required to be designed and installed in accordance with clause J2.4.
J3.2	Chimneys and flues	Not applicable
J3.3	Roof lights	If proposed, (a) A roof light must be sealed, or capable of being sealed, in accordance with (b) to minimise air leakage when serving a conditioned space. (b) A roof light required by (a) to be sealed or capable of being sealed must be constructed with— (i) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or (ii) a weatherproof seal if it is a roof window; or (iii) a shutter system readily operated either manually, mechanically or electronically by the occupant.
J3.4	External windows and doors	(a) A seal to restrict air infiltration must be fitted to each edge of an external door, openable external window or the like when serving a conditioned space. (b) The requirements of (a) do not apply to— (i) a window complying with AS 2047; or (ii) an external louvre door, louvre window, or other such opening; or (iii) a fire door. (c) A seal required by (a) may be a foam or rubber compressible strip, fibrous seal or the like. (d) An external door at the main point of entry to the building, if leading to a conditioned space with a floor area of more than 50 m2, must have a means of minimising the loss of conditioned air such as an airlock, self-closing door, revolving door or the like.
J3.5	Exhaust fans	An exhaust fan must be fitted with a sealing device when serving an air-conditioned space, or a habitable room in climate zone 4, 6, 7 or 8.
J3.6	Construction of roofs, walls and floors	(a) Roofs, external walls, external floors and any opening such as a window, door or the like must be constructed to minimise air leakage in accordance with (b) when forming part of the external fabric of a conditioned space (b) Construction required by (a) must be— (i) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or (ii) sealed by caulking, skirting, architraves, cornices or the like.

J5.2	Air-conditioning and ventilating systems	Details to be provided with the Construction Certificate Application.
J5.3	Time switch	Power supply to: (a) an *air-conditioning* system of more than 10 kWr; or (b) a ventilation system with an air flow rate of more than 1000 L/s; or (c) heating systems of more than 10 kWheating, must be controlled by a time switch in accordance with Specification J6.
J5.4	Heating and cooling systems	Details to be provided with the Construction Certificate Application.
J5.5	Ancillary exhaust systems	Details to be provided with the Construction Certificate Application.
J6.2	Interior Artificial lighting	Artificial lighting is required to be designed in accordance with table J2.6b excluding emergency lighting and signage display lighting.
J7.2	Hot water supply	Details to be provided with the Construction Certificate Application.
JA5.2	Access for maintenance	Access must be provided to all services and their components including: i) Time switches and motion detectors; and ii) Room temperature thermostats; and iii) Plant thermostats such as on boilers or refrigeration units; and iv) Outside air dampers; and v) Reflectors, lenses and diffusers of light fittings; and vi) Heat transfer equipment; and Adjusted or motorised shading devices.

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4.0 SUMMARY OF KEY COMPLIANCE ISSUES

The assessment of the referenced architectural plans has revealed the following key issues or non-compliances:

1. BCA Clause C2.7: Separation by fire walls:

   The existing party wall between No 23 and No 25 & 29 is required to achieve the fire wall provisions which will divide the buildings into complying fire compartments in accordance with C2.7(a) and (b), achieving an FRL of 180/180/180.

   Note the comments in Clause A4.1 and C2.2 in relation to the boundary allotment wall between No 27 & 29 due to separate ownership for future considerations and the calculated size of the fire compartment regarding the whole building to No 25 & 27 and the ground floor of No 29.

2. BCA Clause C2.8: Separation of classifications in the same storey:

   The higher FRL for the Class 6 component will apply to the ground and first floor of the building as it is the higher FRL for that storey against the Class 9b provisions.

- The ground floor loadbearing elements are to achieve an FRL of 180/180/180
- The first floor loadbearing elements are to achieve an FRL of 180/180/180
- The second floor loadbearing elements are to achieve an FRL of 120/120/120

3. BCA Clause NSW D2.21 Operation of latch

   A door 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 900 mm and 1200m from the floor, this may be an issue for sliding doors as proposed.

4. BCA NSW Table E2.2b: Smoke hazard management

   Please see the requirements of this table within the BCA report for essential services requirements, we understand the building is sprinkler protected, this will be required to be extended to all areas with the provision of fast response sprinkler heads in accordance with specification E1.5 of the BCA.

5. BCA NSW H101.2: Fire separation

   Where places of Public Entertainment form only part of a building, this is required to be fire separated from the adjoining non POPE area with construction achieving an FRL of not less than 60/60/60.

   This will not be achieved, the whole building could be designated as a POPE to eliminate this clause requirement or the preparation of an alternative solution to address this.

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5.0 CONCLUSION

This report contains an assessment of the S96 modifications for the Ivanhoe Hotel redevelopment, against the deemed-to-satisfy provisions of the Building Code of Australia 2008 (BCA).

Arising from the assessment, it is considered that the architectural documentation reviewed generally complies, or can readily comply with the BCA, upon resolution of the compliance issues summarised under Section 4.0 of this report and general BCA commentary within this assessment. Further details are to be provided within the final Construction Certificate application.

Prepared by: Carl Parkinson
Building Surveyor

Dated: 30th March 2009

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Appendix 1 - FRL's of Building Elements

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS				
Building element	Class of building - FRL: (in minutes) Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 7a or 9	6	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 1.5m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-loadbearing parts-				
less than 1.5 m	- / 90/ 90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	- / 60/ 60	- / 90/ 90	- /180/120	- /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	90/ - / -	120/ - / -	180/ - / -	240/ - / -
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS and FIRE WALLS-	90/ 90/ 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS-				
Fire-resisting lift and stair shafts-				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Non-loadbearing	- / 90/ 90	- /120/120	- /120/120	- /120/120
Bounding public corridors, public lobbies and the like-				
Loadbearing	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- / 60/ 60	- / - / -	- / - / -	- / - / -
Between or bounding sole-occupancy units-				
Loadbearing	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- / 60/ 60	- / - / -	- / - / -	- / - / -
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion-				
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-loadbearing	- / 90/ 90	- / 90/ 90	- /120/120	- /120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES				
and COLUMNS-	90/ - / -	120/ - / -	180/ - / -	240/ - / -
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240

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