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CONSULTING PTY LTD

Report comparing a

Class 6 hotel bar area

against a

Class 9b bar area with live music or a dance floor

according to the
Deemed-to-Satisfy Provisions
of the
Building Code of Australia

Report prepared by

SKIP Consulting Pty Ltd

for

John Wardle
National Live Music office

Author	Signature*	Date
Stephen Kip Fire Safety Engineer BPB Reg. No: EF-17231		13th February, 2015

* For and on behalf of SKIP Consulting Pty Ltd.

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FIRE SAFETY ENGINEERING AND BUILDING REGULATORY CONSULTING
P: 0438 262 400 F: (03) 5222 5672 E: consulting@skip.net.au W: www.skip.net.au
P.O. Box 397, Geelong, Vic 3220 ABN 97 123 965 079

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1 Introduction

1.1 The project

This project is to assess the differences in application of building regulations prescribed by the National Construction Code, Building Code of Australia Volume One (BCA) for Class 6 retail buildings (specifically hotel bar area) and Class 9b public buildings. In particular the report will consider the implications of a Class 6 hotel bar area also having live music, which is typically considered as a Class 9b use in accordance with the BCA.

1.2 Client

SKIP Consulting Pty Ltd has been appointed by John Wardle of the National Live Music Office.

1.3 Historical background

Building regulations have traditionally used a 'classification' system to separate distinct building types into classes. For example the 1837 Sydney Building Act[1] required (underline added);

> *That the several churches chapels meeting-houses or other places of public worship dwelling-houses and all other buildings whatsoever at any time heretofore begun or built or which shall at any time or times hereafter be begun or built within the said town on new or old foundations or on foundations partly new and partly old shall be distinguished by and divided into the six several rates or classes of building hereinafter described and such six several rates or classes of building shall be under the rules and directions hereinafter contained concerning the same.*

The current BCA has a 16 class system (described in Appendix A) which goes back to at least the 1970's when the first *'Australian Model Uniform Building Code[2] [AMUBC]* was prepared.

The BCA classification approach is essentially unchanged from this period and is therefore at least 40 years old.

1 Page 3 of the *'Act for regulating Buildings and Party-walls and for preventing mischiefs by Fire in the Town of Sydney'. [8th September, 1837]*, available at See http://www5.austlii.edu.au/au/legis/nsw/num_act/sba1837n7204.pdf.

2 Australian Uniform Building Regulations Co-ordinating Council, (1984), Development of the Australian Model Uniform Building Code.

2 Assessment

2.1 Problems of a classification system

Building regulations are typically prescriptive in nature and therefore a method of grouping similar buildings is required so that those prescriptive provisions can be established in legislation, and applied. This process is limited and simplistic by its very nature.

In Australia in 1997 a performance-based BCA was introduced to remove the restrictions of a traditional prescriptive approach and the current National Construction Code[3] states;

> *"All three volumes are drafted in a performance format allowing a choice of Deemed-to-Satisfy Provisions or flexibility to develop Alternative Solutions based on existing or new innovative building, plumbing and drainage products, systems and designs".*

The classification system therefore remains to support the existing prescriptive requirements (Deemed-to-Satisfy Provisions), but continues to be a restriction on the flexibility of application of the BCA.

2.2 The current BCA Classification system

The current BCA Guide[4] states that the intent of the classification system is to; *"categorise buildings of similar risk levels based on use, hazard and occupancy".* This system works very well in most circumstances; however there are some inconsistencies, predominantly caused by a 'technology lag' or change in community standards, behaviours or expectations. For example Clause A3.1 of BCA Volume One, 2015 requires that (underline added);

> *"The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used".*

The BCA intends for buildings to be classified according to use, however the BCA then requires the classification system of only 16 different classes of buildings[5] to be applied. The simplistic nature of this system can be highlighted by the following;

1. It is possible to change the use of a building without changing the classification (a Class 7 or 8 factory or warehouse can easily change its use but still remain a factory or warehouse, for example a concrete panel warehouse might change to a fireworks or explosives warehouse with a very different use but the same classification).

2. It is possible to change the classification of a building without changing the use (for example a Class 3 low-care nursing home is identical to a Class 9c low-care nursing home and a Class 1b hostel can be identical to a Class 3 hostel).

These inconsistencies highlight the often simplistic and potentially flawed nature of a classification system. This is reinforced by the New South Wales BCA variation to the definition of assembly building[6] which deletes the reference to *'bar area of a hotel or motel providing live entertainment or a dance floor'* and introduces a new BCA Part H101 for entertainment venues, as defined.

This definition does not include a bar area of hotel or motel providing live entertainment or containing a dance floor, and therefore these areas can be classified as Class 6 buildings in NSW.

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3 Page 7 of the National Construction Code, *Building Code of Australia Volume One 2015*, published by the Australian Building Codes Board (2015).

4 Page 55 of the *Guide to the BCA Volume One 2015*, published by the Australian Building Codes Board (2015).

5 There are 10 classifications, numbered from 1 to 10, however Classes 1a, 1b, 7a, 7b, 9a, 9b, 9c, 10a, 10b & 10c are separate classes and therefore the total number of different classes of buildings is 16, see Clause A1.7(d) of BCA Volume One.

6 Page 509 of the *BCA Volume One 2015*, published by the Australian Building Codes Board (2015).

Victoria also introduced the *Building Amendment (Live Music) Regulations 2014* (S.R. No. 197/2014) on 29 October 2014 which defines a 'small live music venue' as a Class 6 building of less than 500 m^2. This amendment remains problematic as it does not apply to a Class 6 building that has a dance floor, but no live music, or is more than 500m^2 in floor area, or more than 2 storeys in height. These uses would still be Class 9b under the classification system of the BCA, and classifying use based on floor areas, for example, is inconsistent in relation to use and hazard.

2.3 Class 6 hotels and Class 9b public buildings

The current BCA (excluding State or Territory variations) specifies that a Class 6 building includes;

> *"a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel[7]".*

Class 9b buildings include assembly buildings, which are defined as[8];

> *"Assembly building means a building where people may assemble for—*
> *(c) entertainment, recreational or sporting purposes including—*
> *(i) a discotheque, nightclub or a bar area of a hotel or motel providing live entertainment or containing a dance floor; or*

By way of comparison, the assessment criteria intended in the BCA[5] of; "*risk levels based on use, hazard and occupancy",* would be very similar for these two BCA classifications. For example, the hazard from providing live entertainment or containing a dance floor is independent of occupancy (i.e. the same population with the same conditions of alcohol consumption should not necessarily be adversely effected by introduction of live entertainment or a dance floor).

Whilst the hazard may be different, modern technology has substantially reduced the hazards in live entertainment (electrical overload from lighting, amplification, pyro-technics etc.) and other uses such as electronic gaming (including poker machines) for example, in Class 6 buildings, can also change the hazard in a building.

A review of the main parts of the BCA Deemed-to-Satisfy Provisions that apply to a Class 6 bar area of a hotel, or a Class 9b live entertainment or dance floor area are described in Appendix B and highlights the more stringent approach adopted for Class 9b bar areas with live entertainment or a dance floor compared to Class 6 bar areas generally.

7 Page 35 of the *BCA Volume One 2015*, published by the Australian Building Codes Board (2015).

8 Page 17 of the *BCA Volume One 2015*, published by the Australian Building Codes Board (2015).

3 Discussion of outcomes

3.1 Conclusion

The BCA classification system determines that where live music or a dance floor is introduced to a Class 6 hotel, it becomes a Class 9b building. There does not appear to be any strong evidence for this difference, particularly given improved technological changes to live music performance, and this current approach does not accurately reflect the risk (i.e. use, hazard or occupancy).

The following recommendations are therefore made;

Short to medium term solutions:

1. A clearer definition of 'use' should be included in the BCA to adopt a more risk-based approach.

2. An improved definition or consolidation of what is *'live entertainment or dance floor'* in comparison to *'nightclubs, discotheques and the like'* should be considered so that no ambiguity is made between these similar uses and that the relevant risk of each use is considered in the BCA (if any different risk exists)

Long term solution.

3. It would be worthwhile to develop a risk-based classification system for the BCA, or remove the classification system and allow performance-based design based on clear definitions of use and risk. This will allow a truly performance-based approach to building regulations to be adopted.

3.2 Qualifications and experience of the author

The qualifications and experience of the author of this report is set out in Appendix D.

Appendix A: Extract of BCA classification system

A3.1 Principles of classification

The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.

A3.2 Classifications

A3.2 amended by BCA 2011

Buildings are classified as follows:

Class 1:

one or more buildings which in association constitute—

(a) **Class 1a** — a single dwelling being—

(i) a detached house; or

(ii) one of a group of two or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, town house or villa unit; or

(b) **Class 1b** —

(i) a boarding house, guest house, hostel or the like—

(A) with a total area of all floors not exceeding 300 m^2 measured over the enclosing walls of the Class 1b; and

(B) in which not more than 12 persons would ordinarily be resident; or

(ii) 4 or more single dwellings located on one allotment and used for short-term holiday accommodation,

which are not located above or below another dwelling or another Class of building other than a private garage.

Class 2:

a building containing 2 or more sole-occupancy units each being a separate dwelling.

Class 3:

a residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons, including—

(a) a boarding house, guest house, hostel, lodging house or backpackers accommodation; or

(b) a residential part of a hotel or motel; or

(c) a residential part of a school; or

(d) accommodation for the aged, children or people with disabilities; or

(e) a residential part of a health-care building which accommodates members of staff; or

(f) a residential part of a detention centre.

Class 4:

a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

Class 5:

an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.

NSW Class 6

Class 6:

a shop or other building for the sale of goods by retail or the supply of services direct to the public, including—

(a) an eating room, café, restaurant, milk or soft-drink bar; or

(b) a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel; or

(c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or

(d) market or sale room, showroom, or service station.

Class 7:
a building which is—
(a) **Class 7a** — a carpark; or
(b) **Class 7b** — for storage, or display of goods or produce for sale by wholesale.

Class 8:
a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain.

Class 9:
a building of a public nature—
(a) **Class 9a** — a health-care building, including those parts of the building set aside as a laboratory; or
(b) **Class 9b** — an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class; or
(c) **Class 9c** — an aged care building.

Class 10:
a non-habitable building or structure—
(a) **Class 10a** — a non-habitable building being a private garage, carport, shed, or the like; or
(b) **Class 10b** — a structure being a fence, mast, antenna, retaining or free-standing wall, swimming pool, or the like; or
(c) **Class 10c** — a private bushfire shelter.

A3.3 Multiple classification

A3.3 amended by BCA 2011

Each part of a building must be classified separately, and—
(a)
(i) where parts have different purposes — if not more than 10% of the floor area of a storey, being the minor use, is used for a purpose which is a different classification, the classification applying to the major use may apply to the whole storey; and
(ii) the provisions of (i) do not apply when the minor use is a laboratory or Class 2, 3 or 4 part; and

(b) Classes 1a, 1b, 7a, 7b, 9a, 9b, 9c, 10a, 10b and 10c are separate classifications; and

(c) a reference to—
(i) Class 1 — is to Class 1a and 1b; and
(ii) Class 7 — is to Class 7a and 7b; and
(iii) Class 9 — is to Class 9a, 9b and 9c; and
(iv) Class 10 — is to Class 10a, 10b and 10c; and

(d) A plant room, machinery room, lift motor room, boiler room or the like must have the same classification as the part of the building in which it is situated.

A3.4 Parts with more than one classification

A3.4 amended by Amdt No. 9

(a) Notwithstanding A3.3, a building or part of a building may have more than one classification applying to the whole building or to the whole of that part of the building.

(b) If a building or part of a building has more than one classification applying to the whole building or part in accordance with (a), that building or part must comply with all the relevant provisions of the BCA for each classification.

Appendix B: comparison of BCA requirements for Class 6 hotel bar areas and Class 9b live entertainment or dance floor

BCA Section or Part	BCA DtS Provisions		
	Class 6 hotel bar area	**Class 9b live entertainment or dance floor**	**Comments**
Part A; General Provisions	No substantial difference		
Part B; Structure	Both importance level 3 buildings.		
Part C1; Fire-resistance and stability	Single storey; Type C Two storey; Type C Three storeys; Type B Four storeys or more; Type A	Single storey; Type C Two storey; Type B Three storeys; Type A Four storeys or more; Type A	Substantial difference for two and three storey buildings with much more onerous requirements for Class 9b.
Part C2; Compartmentation and separation	Type C limited to 2,000m^2 Type B limited to 3,500m^2 Type A limited to 5,000m^2	Type C limited to 3,000 m^2 Type B limited to 5,500m^2 Type A limited to 8,000m^2	Moderate difference for two and three storey buildings with more onerous requirements for Class 6.
Part C3; Protection of openings	No difference		
Part D1; Provision for escape	One exit required for each 100 persons	Two exits required if more than 50 persons	Substantial difference for two or more storey buildings with much more onerous requirements for Class 9b.
Part D2; Construction of exits	No difference		
Part D3; Access for people with a disability	Access, tactile indicators, hearing augmentation, wheelchair seating spaces	Access, tactile indicators, hearing augmentation, wheelchair seating spaces	Slight difference with more onerous requirements for Class 9b.
Part E1; Fire-fighting equipment (fire hose-reels, hydrants and extinguishers)	No difference		
Part E1; Fire-fighting equipment (fire sprinklers)	Where floor area exceeds 3,500m^2.	If stage provided and backstage area exceeds 200m^2	Slight difference with more onerous requirements for Class 9b if stage provided and backstage area exceeds 200m^2.
Part E2; Smoke hazard management	Where floor area exceeds 3,500m^2.	Smoke detection, mechanical shutdown and smoke exhaust or fire sprinklers (applies to *'nightclubs, discotheques and the like')*	Substantial difference *'nightclubs, discotheques and the like'* with much more onerous requirements for Class 9b.

BCA Section or Part	BCA DtS Provisions		
	Class 6 hotel bar area	**Class 9b live entertainment or dance floor**	**Comments**
Part E4; Emergency lighting, exit signs and warning systems	Emergency lighting and exit signs required.	Emergency lighting and exit signs required.	
Part F; Health and Amenity	No applicable fire safety provisions.		
Part G; Ancillary provisions	No applicable fire safety provisions.		
Part H; Special use buildings	No applicable fire safety provisions.		
Part I; Maintenance	Essential safety measures maintenance in accordance with State laws	Essential safety measures maintenance in accordance with State laws	No substantial difference.
Part J; Energy Efficiency	No substantial difference		

Appendix C: Qualifications and experience of the report author

Statement of Qualifications and Experience

Stephen Kip

Director, SKIP Consulting Pty Ltd

Academic qualifications	▪ Master of Engineering (Victoria University, 1996) ▪ Graduate Diploma of Building Fire Safety & Risk Engineering (Victoria University, 1993) ▪ Graduate Diploma of Engineering in Building Project Management (Footscray Institute of Technology, now Victoria University,1989) ▪ Bachelor of Building (Deakin University, 1991) ▪ Certificate of Technology, Building Surveying (Footscray TAFE, 1986)
Professional qualifications & memberships	▪ Registered building practitioner (Vic), Fire Safety Engineer ▪ Registered building practitioner (Vic), Building Inspector ▪ Registered building practitioner (Vic), Building Surveyor ▪ Registered building practitioner (Vic), (currently voluntarily lapsed), Domestic Builder (unlimited) ▪ Fellow of the Institution of Engineers (Australia) ▪ Immediate Past National President of the Society of Fire Safety of Engineers Australia ▪ Honorary Fellow of the academic staff of the University of Melbourne, Faculty of Architecture, Building and Planning ▪ Associate of the academic staff of the Victoria University Centre for Environmental Safety and Risk Engineering ▪ Former Member of the Victorian Building Appeals Board (2007-2014)
Principal experience	▪ April 2007 - present, Director SKIP Consulting Pty Ltd (Fire Safety Engineering & Building Regulatory Consultancy) ▪ December 2002 - March 2007, Senior Fire Safety Engineer, Warrington Fire Research (Aust) P/L ▪ November 2000 - November 2002, Senior Fire Safety Engineer, Building Research Association of New Zealand (BRANZ) ▪ January 1999 - October 2000, Deputy to the Building Commissioner, Building Control Commission, Victoria ▪ December 1995 - January 1999, Principal Research & Development Officer, Building Control Commission, Victoria ▪ April 1988 - November 1995, Building Surveyor, Gardner Group P/L (Building Surveyors) ▪ January 1988 - April 1990, Principal of building company, KB Constructions ▪ November 1984 - December 1987, Building Surveyor, City of Geelong
Other related experience	▪ 1987 to present, part time lecturing positions in building and fire safety engineering related subjects at several universities including; the University of Melbourne, Victoria University, Deakin University and RMIT University.
Awards	▪ Australian Institute of Building (AIB), best final year student, Deakin University, 1991

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P: 0438 262 400 F: (03) 5222 5672 E: stephen@skip.net.au W: www.skip.net.au

P.O. Box 397, Geelong, Vic, 3220 ABN 97 123 965 079