Modification 14 Planning Submission Engineering Advice

FIRE LIFE SAFETY PRINCIPLES

CONFIDENTIAL

SEPTEMBER 2016

WSP | PARSONS BRINCKERHOFF

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A	15/07/2016	Final Draft for Review
B	09/09/2016	Final Report

AUTHOR, REVIEWER AND APPROVER DETAILS

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EXECUTIVE SUMMARY

The Star Entertainment Group is a leading operator of integrated resorts catering to both local and international visitors and is the operator of The Star Sydney (The Star). Consistent with The Star's licence obligation to operate the site to an international standard, The Star Entertainment Group is proposing to advance a revitalisation of the existing complex.

The Star is embarking on a five year redevelopment journey to create a landmark, exemplar integrated resort within the City of Sydney. This proposed redevelopment will occur through the lodgement of two S75W applications with the Department of Planning and Environment, identified as Modification 13 and Modification 14. All works pertaining to Modification 14 are detailed below. Modification 13 will involve the design of a new Ritz-Carlton Hotel Tower and associated podium treatment and will be detailed at a future time.

The Star is proposing to attain the highest standard of built form outcomes for the site through the proposed redevelopment by encouraging innovation and best practice approaches in order to achieve an environmentally sustainable development that positively contributes to the overall architecture of both Pyrmont and the City of Sydney. This will be done through the implementation of advanced ESD initiatives, improved people and movement connections, upgrades to the external appearance and presentation of the facility and improved integration with the adjacent urban fabric.

1 MODIFICATION 14 PROPOSED WORKS

The key portions of these works which will require significant performance based design are highlighted here for brevity. For full details on the proposed scope of works, please refer to the main Modification 14 architectural documentation.

1. Level 00 – Porte Cochere and Astral Lobby Upgrade

Realignment of Porte Cochere to accommodate expanded and upgraded Astral Lobby, upgraded Astral Lobby Bar and retail expansion and upgrades of the Main Casino Entry, including valet improvements to the Porte Cochere.

2. Level 00 - Astral Luxury Retail Zone

New luxury retail zone connecting from Astral Hotel Lobby out to Jones Bay Road. Change of use from office / back of house to retail.

3. Vertical Transportation Drum

New escalators as part of a vertical transport arrival strategy from Level 00 to Level 05.

4. Level 03 - Sovereign Expansion

Expansion to the existing Sovereign Room at Level 03. This includes refurbishment of existing food, beverage and gaming locations, expansion of food and beverage opportunities and VIP gaming and unenclosed gaming areas.

2 FIRE LIFE SAFETY

2.1 Background on Fire Life Safety at The Star

The design for The Star Casino took place pre-1996, before the development of a performance based building code here in Australia. The building was designed in accordance with the prescriptive requirements of NSW Ordinance 70 and BCA (1990) with minimal fire engineering design incorporated within the building at project completion.

Since that time a considerable amount of redevelopment has taken place on site, which has resulted in numerous fire engineering reports being provided for the site over the last 10-15 years. Such an approach has resulted in a rather piecemeal life safety strategy, created by conflicting approaches and unnecessary complexities in systems operation and building functionality. WSP | Parsons Brinckerhoff believe this can be improved upon considerably as part of the site-wide masterplan works.

2.2 Future Approach to Fire Life Safety at The Star

WSP | Parsons Brinckerhoff are in the process of undertaking a thorough investigation of all fire engineering elements previously performed at The Star complex, which includes a review of the existing fire systems, evacuation management plans and operational procedures on site. This project is referred to internally as the site-wide masterplan works.

Part of this process is to understand exactly how the current essential services systems interface and perform to gain a holistic understanding of the building's fire performance. Following this review, we can then identify which of these systems would offer the greatest most benefit to life safety as part of pinpointing key infrastructure which should be upgraded during this project. This review has identified an upgrade of the fire detection and alarm system as being the primary recommendation in this regard, which is currently in the initial design planning stage at this point in time.

In parallel with this services review process, we have collated copies of all existing Fire Engineering Reports (FERs) applicable to the site for the purposes of understanding the strategies which they propose. We are currently developing a holistic approach to fire life safety for The Star complex which enables an easy transition to the "end game" development. It will include a review and amalgamation of new and old fire engineering approaches in a seamless manner with a focus on maximising operational flexibility.

Given the significant nature of the proposed redevelopment, it is considered appropriate that consideration be given to amalgamating the existing fire life safety approaches with the proposed new development to develop a single holistic fire life safety strategy. The aim would be to de-risk the project and the asset as a whole such that the facility operates as a single operation to enable business continuity is seen as one of the primary objectives, in addition to the life safety of occupants and Brigade personnel.

The scale of the works taking place on site adds additional design challenges to the engineering process. It has been agreed that the fire engineering for each portion of works will be undertaken as an individual sub-project design report in the first instance. These reports are written with the existing fire engineering strategies in mind to minimise interruption to site operations as construction works take place. At completion of the works taking place across the site, each of these sub-project FERs will then be amalgamated into a single FER. This approach is discussed further later in this report (refer to Section 2.6).

2.3 National Construction Code: Building Code of Australia

The primary legislation applicable to the development is the EP&A Regulations 2000, which require any new building to comply with the NCC Vol. 1: Building Code of Australia. The BCA provides a set of prescriptive Deemed to Satisfy (DtS) Provisions that, if adhered to, are considered to provide an acceptable level of safety, and achieve compliance with the Performance Requirements of the BCA. Deviations from the DtS Provisions must be shown to comply with the Performance Requirements of the BCA. The analysis of such a deviation is referred to as an Alternative Solution.

2.4 Stakeholder Engagement

2.4.1 Principal Certifying Authority

WSP | Parsons Brinckerhoff have been working closely with the PCA on these works (McKenzie Group) since the site-wide masterplan works commenced in mid-2015. All performance based designs which are developed by our team are first accepted in principle by the PCA prior to submission to FRNSW for review and comment. This level of design collaboration will be continued throughout the Modification 14 works, to enable design outcomes to meet the approval of all stakeholders on the project.

2.4.2 FRNSW

Fire and Rescue NSW (FRNSW) have been involved with these works from a very early stage. This has enabled us to get feedback on specific points which we have pre-empted as providing a challenge to the fire engineering design process. To date we have gained conditional approval for all Alternative Solutions anticipated within the Astral Lobby works, and will be looking to continue in a similar manner on all design projects following this.

2.5 Fire Life Safety Outcomes at The Star

The design(s) developed as part of the Modification 14 works will adhere to the requirements of the NCC in full. Our assessment will incorporate fire compartmentation, evacuation principles and essential services which form part of a holistic assessment of the subject building to ensure life safety is upheld throughout. Compliance will be achieved through a mixture of both prescriptive and performance based design.

2.6 The Fire Engineering Process

In accordance with the International Fire Engineering Guidelines [IFEG], WSP | Parsons Brinckerhoff's fire engineering for The Star will consist of preparing a Fire Engineering Brief (FEB) for every sub-project that is subject to Alternative Solution(s) to the BCA Deemed to Satisfy (DtS) Provisions. The FEB will include the objectives, proposed trial designs, methods of analysis and acceptance criteria for any Alternative Solutions proposed in the scheme.

Following approval of each FEB by project stakeholders, the IFEG stipulates that a detailed Fire Engineering Report (FER) can be prepared. The FER will contain all the relevant design calculations and justification to show that the Alternative Solutions contained within the FER comply with the Performance Requirements of the BCA.

Given the staging of the works on site, it will not be possible to supply an all-encompassing FEB or FER until all the sub-projects are designed and underway. It is therefore proposed that this process will take place on a project by project basis, with all of these reports being amalgamated into a single report as works near completion.

The existing AECOM FERs which are currently applicable to the site will be superseded once the WSP | Parsons Brinckerhoff fire engineering strategy and final FER is complete.

The fire engineering process for each sub-project shall be undertaken as follows (subject to the scale of the sub-project in question):

TABLE 1: FIRE ENGINEERING PROCESS STATUS

Stage	Approximate Programme Schedule
Phase 1 – Concept design development	Week 1 - 2
Phase 2 – Draft Fire Engineering Brief Questionnaire (FEBQ) issued to team for comment	Week 3 - 4
Phase 2 – FEBQ revised and issued to FRNSW	Week 5
Phase 3 – Computational Fluid Dynamics (CFD) modelling undertaken (where applicable)	Week 6 - 10
Phase 3 – Evacuation modelling undertaken (where applicable)	Week 6 - 10
Phase 3 – Draft FER issued to team for comment	Week 11
Phase 3 – FER revised and submitted as part of Construction Certificate (CC) application	Week 12
Phase 3 – FRNSW comments received back on FEBQ	Week 17
Phase 3 – FER revised to suit FEBQ review comments	Week 18 (subject to FRNSW workload)
Phase 4 – Mid-works inspection	Week 24
Phase 4 – Final Section 153a inspection and sign-off Section ion and	Week 30

2.7 Fire Engineering Methodology

2.7.1 ASET vs. RSET Assessment Methodology

For large and complex buildings, it is at times difficult to design the building against the prescriptive requirements of the Building Code of Australia. Performance based fire engineering design is adopted where complex scenarios are required to be addressed, which impact upon occupant evacuation. Such techniques make use of the life safety systems installed within a building, as well as taking into consideration its occupant behaviour, layout of the building, egress provisions and fire hazards to ensure occupants can evacuate safely.

By evaluating these systems and the level of safety and early warning afforded to occupants evacuating, it is possible to carry out a time based comparison of the time available for occupants to escape (the Available Safe Egress Time – ASET) against the required time for occupants to escape (Required Safe Escape Time – RSET).

2.7.2 FRL Reduction Assessment Methodology

Fire Resistance Level (FRL) reduction assessments will be undertaken using equivalent fire severity calculations. This should demonstrate that even with sprinkler failure within the subject area, the ventilation afforded to this space from glazing failure and other ventilation openings will keep temperatures below the level at which structural failure may occur. This assessment will be used as a sensitivity analysis, with the base case being a sprinkler controlled fire which will not reach the temperatures at which structural failure may ensue. This will be reviewed on a case by case basis.

2.7.3 Evacuation Principles

Egress provisions on site will achieve compliance through either a prescriptive DtS compliant design (20 m to a point of choice and 40 m to the nearest exit in public areas), or through performance based design. Where performance based design is used, the smoke exhaust system will be designed to maintain tenable

conditions for the duration of the evacuation period including a 1.5 safety factor (as per IFEG). The key principles behind the design (in terms of life safety) shall be as follows:

- → Strategy shall be based upon the BCA's guiding principles: protection of life, protection of Brigade, protection of property.
- → Egress philosophy will provide flexibility by utilising horizontal evac strategies to adjacent quasi-safe zones.
- → Rationalised egress points shall be quantified holistically.
- → Fire strategy will utilise qualitative and quantitative studies to determine most pragmatic approach
- → Management of staging works crucial as transition from AECOM (existing) to WSP | Parsons Brinckerhoff (proposed) FER takes place

Any rationalisation of egress routes, while maximising population numbers, will be subject to the outcomes of Computational Fluid Dynamics (CFD) and egress modelling that is undertaken. Full details on evacuation principles and occupant loading for each area will be determined once detailed design plans are available for each sub-project within the building, as these are only in concept form at this time.

Based on the current Modification 14 plans (dated 8th July 2016), WSP | Parsons Brinckerhoff can confirm that egress from the existing building will not be unduly impacted by the proposed changes on site. New portions of the site will be reviewed holistically to minimise the impacts these will have on the existing egress strategies in place. Wherever prescriptive egress requirements cannot be adhered to, we will use performance based fire engineering design to enable an equivalent or greater level of life safety to be achieved. The anticipated population loads for each type of area can be found as follows:

TABLE 2: OCCUPANT DENSITY PER AREA (AS PROVIDED BY THE STAR)

Area usage	Occupant density (persons per m²)
Function / bar space	1 : 1
Main gaming space	1 : 2
Food and beverage	1 : 2.5
VIP gaming space	1 : 3

2.7.4 CFD Assessment

Given the complexity of the casino site and the high population numbers within, it is deemed beneficial to conduct detailed fire and smoke modelling to quantify the level of life safety which the proposed design(s) will provide. Computational Fluid Dynamic (CFD) will be used to simulate fire development and smoke spread, with these results then used in an ASET/RSET analysis.

2.8 Standards of Construction and Maintenance

The required standards of construction, commissioning, management, use and maintenance requirements are presented below. It is vital that all stakeholders review and agree to this information in the early stages of works to prevent issues arising during final handover. Information on construction staging is not available at this time.

All building work must comply with the prescriptive requirements of the BCA unless specifically varied through performance based fire engineering assessment by WSP | Parsons Brinckerhoff and approved by the Principal Certifying Authority (PCA). A general overview of the standards of construction and maintenance are tabulated below for ease of reference. Standards referenced are those mandated by the BCA 2015, or in place at the time of this report being written.

TABLE 3: STANDARDS OF CONSTRUCTION AND MAINTENANCE

Fire Safety Provision	Standard of Construction	Standard of Maintenance
Construction	Comply with BCA Spec C1.1 and Fire Engineering Requirements	Comply with [AS 1851]
Penetrations in Fire Rated Construction	Comply with BCA Spec C3.15 – Penetrations of walls, floors and ceilings by services	Comply with [AS 1851]
Emergency Vehicular Access	Comply with BCA Clause C2.4 and Fire Engineering Requirements	Comply with Fire Engineering Requirements.
Air Handling Systems	Comply with [AS 1668.1] and Fire Engineering Requirements	Comply with [AS 1851]
Emergency Lifts	Comply with BCA Part E3 and Fire Engineering Requirements	EN 81.1 Annexure D
Exit and Emergency Lighting	Comply with BCA Part E4, [AS 2293.1]	Comply with [AS 2293.2]
Fire and Smoke Doors	Comply with BCA Spec. C3.4, [AS 1905.1] and Fire Engineering Requirements	Comply with [AS 1851]
Smoke Exhaust Systems	Comply with AS 1668.1 and Fire Engineering Requirements	Comply with [AS 1851]

2.9 References

[AS 1530.1] AS 1530.1 (1994), *Methods for fire tests on building materials, components and structures: Combustibility tests for materials,* Standards Australia

[AS 1530.3] AS 1530.3 (1999), *Methods for fire tests on building materials, components and structures: Simultaneous determination of ignitability, flame propagation, heat release and smoke release,* Standards Australia

[AS 1530.4] AS 1530.4 (2004), *Methods for fire tests on building materials, components and structures: Fire-resistance tests on elements of construction, Standards Australia*

[AS1668.1] AS 1668.1 (1998), *The use of ventilation and air-conditioning in buildings; Fire and smoke control in multi-compartment buildings,* Standards Australia

[AS 1670.1] AS 1670.1 (2004), *Fire detection, warning, control and intercom systems, system design, installation and commissioning – Fire,* Standards Australia

[AS 1670.3] AS 1670.3 (2004), *Fire detection, warning, control and intercom systems, system design, installation and commissioning – Fire alarm monitoring,* Standards Australia

[AS 1670.4] AS 1670.4 (2004), *Fire detection, warning, control and intercom systems, system design, installation and commissioning – Sound Systems and intercom systems for emergency purposes,* Standards Australia

[AS1851] AS 1851 (2012), *Routine Service of Fire Protection Systems and Equipment,* Standards Australia

[AS1905.1] AS1905.1 (2005), *Components for the protection of openings in fire-resistant walls: Fire-resistant doorsets,* Standards Australia

[AS1905.2] AS1905.2 (2005), *Components for the protection of openings in fire-resistant walls: Fire-resistant roller shutters,* Standards Australia

[AS2118.1] AS 2118.1 (1999), *Automatic fire sprinkler systems: General requirements,* Standards Australia

[AS2293.1] AS 2293.1 (2005), *Emergency escape lighting and exit signs for buildings - System design, installation and commissioning, Standards Australia*

[AS2293.2] AS 2293.2 (1995), *Emergency escape lighting and exit signs for buildings - System design, installation and commissioning,* Standards Australia

[AS2419.1] AS 2419.1 (2005), *Fire hydrant installations - System design, installation and commissioning,* Standards Australia

[AS2441] AS 2441 (2005), *Installation of hose reels,* Standards Australia

[AS2444] AS 2444 (2001), *Portable fire extinguishers and fire blankets – Selection and location,* Standards Australia

[AS 3745] AS 3745 (2010), *Planning for emergencies in facilities,* Standards Australia

[BCA] ABCB (2015), *National Construction Code Series, Volume 1, Building Code of Australia 2015, Class 2 to Class 9 Buildings,* Australian Building Codes Board, Canberra.

[BCA Guide] ABCB (2015), *Guide to the Building Code of Australia,* Australian Building Codes Board.

[BRE] Annable, K (2006), *Effectiveness of sprinklers in residential premises – an evaluation of concealed and recessed pattern sprinkler products,* Building Research Establishment Ltd, United Kingdom

[BS 7346-4] BS 7346-4, Components for smoke and heat control systems. Functional recommendations and calculation methods for smoke and heat exhaust ventilation systems, employing steady-state design fires, British Standards

[FBIM] AFAC, Fire Brigade Intervention Model, Australasian Fire and Emergency Services Authorities Council August 2008.

[IFEG] ABCB (2005), *International Fire Engineering Guidelines,* Australian Building Codes Board, Canberra

[PD 7974-6] PD7974-6 (2004), *The application of fire safety engineering principles to fire safety design of buildings – Part 6: Human factors: Life safety strategies – Occupant evacuation, behaviour and condition (Sub-system 6),* BSI British Standards.

Modification 14 Planning Submission Engineering Advice

FIRE LIFE SAFETY - CONSULTATION TO DATE

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FIRE LIFE SAFETY - CONSULTATION TO DATE

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Project no: 160916-The Star-Modification 14-Consultation to date_Rev A
Date: September 2016

REV	DATE	DETAILS
A	16/09/2016	Initial draft for information
B		

AUTHOR, REVIEWER AND APPROVER DETAILS

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1 CONSULTATION TO DATE

This document has been created for the purposes of collating all previous and future correspondence which takes place between the design team and Fire & Rescue NSW (FRNSW) regarding Modification 14 at The Star. This information is to be read in conjunction with the Fire Life Safety Principles report (rev. B dated 9th September 2016). Section 2.4.2 of this document currently makes reference to the meetings having taken place to this date (September 2016).

This report is to be treated as a live document moving forward, with updates taking place as and when discussions / meetings take place between relevant stakeholders.

Table 1: Summary of consultation with FRNSW

Date	Topic of discussion	Attendees
21.04.16	Fire and Life Safety Masterplan for The Star (refer Appendix A-2 for full details on topics covered)	Refer Appendix A-1

APPENDIX A-1 FRNSW MEETING ATTENDEES

Kirk, Dan

Subject:	The Star Casino - Site walkthrough and fire strategy meeting
Location:	Meet outside Fire Control Room entry, Jones Bay Road
Start:	Thu 21/04/2016 1:00 PM
End:	Thu 21/04/2016 5:00 PM
Recurrence:	(none)
Meeting Status:	Meeting organizer
Organizer:	Kirk, Dan
Required Attendees:	Daire Fleming; Mark Reilly (Mark.Reilly@fire.nsw.gov.au); Chris Brown; John Inifer; Bretherton, Wayne; Stephen Natilli; Felice, Sally; Philippou, Tinoulla; Bottrill, Daniel; Dedman, Ben

Afternoon all,

As discussed over the last few days; we would like to invite FRNSW to attend The Star from 1pm on Thursday 21st April. This is to enable the Brigade to understand the scale of works taking place, and seek feedback from them on the guiding principles set out in the site masterplan as it stands. This meeting will be split into two distinct parts as follows:

1. Walkthrough of site to understand existing life safety systems and for site familiarisation purposes
2. Presentation of the proposed development works to enable feedback to be sought from FRNSW

The plan is to meet outside the Fire Control Room entry doorway on Jones Bay Road at 1pm, with the location of this being marked with a pin on the Google Maps screenshot below for ease of reference. The presentation part of this will likely take place at The Star project office at 60 Union St (TBC on the day of the meeting).

Any issues with the above, please let me know.

APPENDIX A-2 **PRESENTATION TO FRNSW**

The Star Casino

Fire & Life Safety Masterplan Overview

Apr. 2016

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PRESENTATION OUTLINE

- Intent of FLS Masterplan document
- Fire engineering methodology
- Benefits offered by current masterplan design
- Overview of current works
- Alternative solutions to discuss
- Approval authority status

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INTENT OF MASTERPLAN DOCUMENT

- → Fire and Life Safety (FLS) Masterplan provides a roadmap for how site is to be designed and managed.
- → Fire Engineering Reports (FERs) will be supplied for each sub-project, and shall dovetail into FLS Masterplan in terms of the agreed fire & life safety principles
- → Building already has ~30 existing FERs in place at present.
- → At completion of all sub-projects, these individual FERs (both new and existing) will be combined into a single site-wide FER as a final deliverable

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FIRE ENGINEERING METHODOLOGY

- → Strategy shall be based upon the BCA's guiding principles: protection of life, protection of Brigade, protection of property.
- → Egress philosophy will provide flexibility by utilising horizontal evac strategies to adjacent quasi-safe zones.
- → Rationalised egress points shall be quantified holistically.
- → Fire strategy will utilise qualitative and quantitative studies to determine most pragmatic approach
- → Management of staging works crucial as transition from AECOM (existing) to WSP | Parsons Brinckerhoff (proposed) FER takes place

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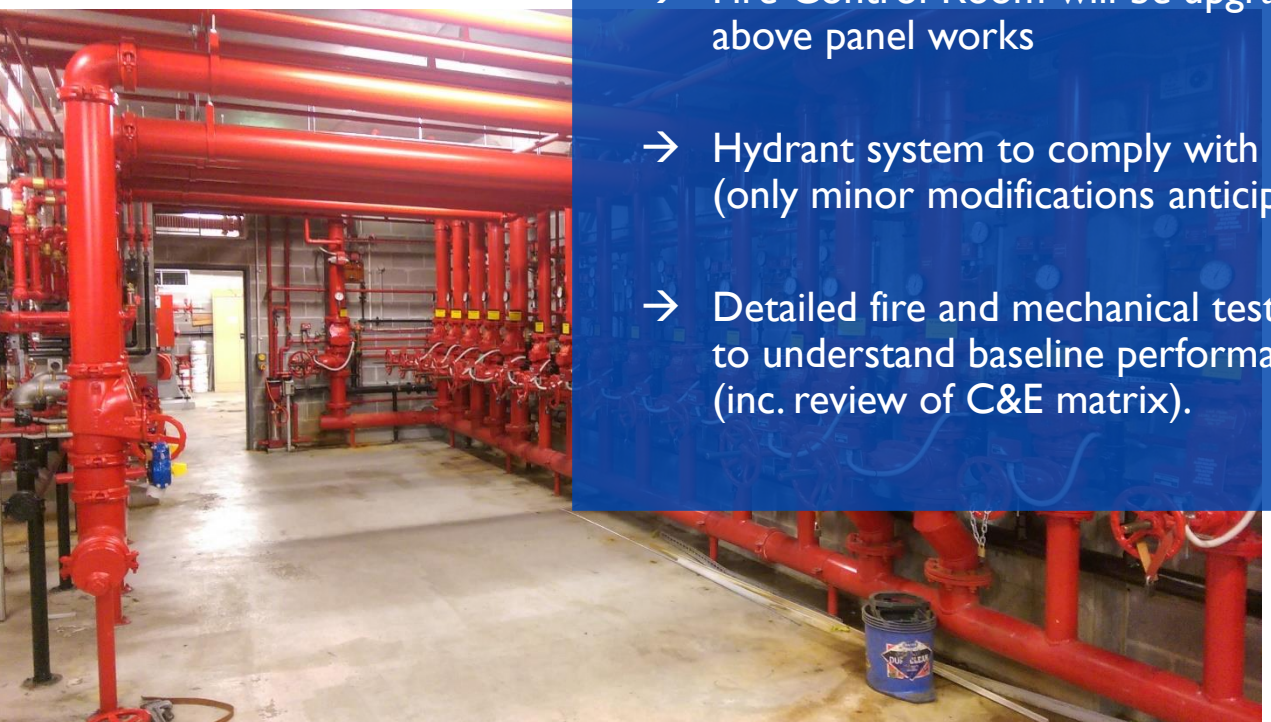
BENEFITS OFFERED BY CURRENT MASTERPLAN DESIGN

- → Replacement of sprinkler heads with new throughout site
- → Fire Indicator Panel (FIP) and Fire Fan Control Panel (FFCP) upgrade / consolidation package
- → Reduction in spurious alarms as a result of FIP works
- → Sound System And Intercom Systems For Emergency Purposes (SSISEP) upgrade package
- → Fire Control Room will be upgraded considerably based on the above panel works
- → Hydrant system to comply with current code where not already (only minor modifications anticipated)
- → Detailed fire and mechanical testing due to take place June 2016 to understand baseline performance levels of existing systems (inc. review of C&E matrix).



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OVERVIEW OF CURRENT WORKS

→ Sub-projects underway at present include:

- North West Gaming
- North Tower And Ribbon (concept design only)
- Astral Lobby and Bar
- Astral Level 5 Club Lounge and Business Centre
- Heart of House Redevelopment

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ALTERNATIVE SOLUTIONS TO DISCUSS

1. Use of two hydrant hoses for compliant coverage in gaming areas
2. Removal of hose reels in Class 2, 3 and 9b areas
3. Smoke hazard management strategy
4. Omission of emergency strobes in gaming areas (TBC)
5. Use of escalators for evacuation purposes
6. Omission of stair pressurisation in North Tower

Justification for each discussed on following pages.

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1. Use of two hydrant hoses for compliant coverage in gaming areas

- → Only applies to lower portions of building (such as MGF)
- → Limited stairs for FRNSW to carry extra equipment up as a result
- → Design will enable firefighting setup from fire stairs alone which promotes firefighter safety
- → Design will be based on 50 m hose plus 10 m hose stream to allow for potentially reduced lengths of hydrant hose being used

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2. Removal of hose reels in Class 2, 3 and 9b areas

- → Beneficial to life safety in Class 9b areas as removes trip hazard in densely populated space
- → Occupants trained to use hose reels will be limited and may pose more of a risk than a benefit
- → Omission in Class 2 and 3 is DtS compliant in current BCA
- → ABCB currently reviewing removal of hose reels in other building classifications at present
- → Fire extinguisher quantities will be increased for first aid firefighting purposes

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3. Smoke hazard management strategy

- → 1.5 safety factor to be used as per IFEG for ASET/RSET analysis
- → Performance design will be based on CFD modelling for each sub-project
- → ASET shall be determined using Pathfinder evac modelling (where necessary)
- → Population density shall be based on the following:

Area usage	Occupant density (persons per m^2)
Function / bar space	1 : 1
Main gaming space	1 : 2
Food and beverage	1 : 2.5
VIP gaming space	1 : 3

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4. Omission of emergency strobes in gaming areas

- → Under review by design team at present re feasibility
- → Design needs to account for non-English speaking occupants
- → Justification based on utilising TV and gaming screens for automated evac messages/diagrams across site in event of fire
- → Design subject to feasibility of screens being on essential services/generator power supply

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5. Use of escalators for evacuation purposes

- → Escalators will be transferred to essential services/ generator supply as part of works
- → Escalators will expedite egress times from densely populated areas on Level 00 – 03
- → Design around whether direction of escalators may be modified by fire signal under review

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6. Omission of stair pressurisation in North Tower

- → Corridor exhaust system will be provided in lieu
- → N+1 redundancy to be provided for exhaust and supply air fans serving this system
- → Auto-opening vents in stair will allow air to be drawn across exit threshold as occupants escape
- → CFD modelling will be used to demonstrate effectiveness of proposed system

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7. Use of emergency lifts for evacuation of disabled persons

- → Emergency lifts within the North Tower will be on the emergency services electrical supply with generator backup.
- → Voice alerts will notify occupants on the fire affected floor that lifts are available for evacuation purposes in early stages of alarm.
- → Site management to provide additional verbal instructions over SSISEP to reduce pre-movement times.
- → Occupants able to call emergency lifts from lobby to fire affected floor.
- → Lifts can only be called to fire affected floor when detection system has been activated. Will not operate after sprinkler activation.
- → Detailed Management in Use (MIU) procedures to be developed as part of this strategy.

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APPROVAL AUTHORITY STATUS

FRNSW review input requirements:

- Brigade review to take place per sub-project via FEBQ process
- FRNSW site familiarisation and presentation taking place Thursday 21st April

PCA feedback and design input (McKenzie Group) taking place throughout design process

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Questions?

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