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ARUP

Dear Ian

Project Star Fire Engineering in Support of Environmental Assessment

Our understanding of this project is that Sydney Harbour Casino Properties Pty Ltd proposes to upgrade and extend the existing Star City Casino to provide additional function areas, meeting rooms, gaming, parking and retail space. This upgrade will also include a new hotel, which will link into the casino at the lower levels. The full works are as described in other parts of the Environmental Assessment submission.

Arup Fire has a good understanding of the fire safety standard achieved in the existing casino building. This has been gained by:

- detailed review of the previous fire safety strategy (dated 1994);
- site inspection to review layout, usage and installed fire safety measures;
- review of supporting documentation including and not limited to the BCA report for the proposed works, architectural drawings and existing PoPE licence.

Arup Fire's approach to the fire safety design for the completed, upgraded complex will be consistent with the aims of the Building Code of Australia's (BCA) Objectives by complying with the Performance Requirements for fire safety.

Arup Fire will aim to develop a fire strategy that achieves the following:

- new works that meet the fire safety Performance Requirements of the current BCA;
- no adverse impact on the existing and retained parts of the building as a result of the new works;
- maintaining or improving the standard of fire safety in the existing parts of the casino building.

Specifically, the fire safety assessment and design to date has focussed on the major issues of egress, smoke control and the three-storey void at the lower levels of the new hotel.

Egress

Egress from the Main Gaming Floor and Mezzanine will be affected by the removal of the 'Spanish Steps' from the north-eastern façade of the building. It is proposed to provide new exits from these levels along the Pirrama Road side of the building in place of the 'Spanish Steps', although the new exits will not be as wide as the existing 'Spanish Steps'. Preliminary analysis has been conducted on the proposed egress provisions and feedback provided to the design team with a view to minimising queuing times at the exits. These queuing times are in line with international practices such as those given within the Guide to Safety at Sports Grounds (Green Guide) by the Department of National Heritage whose recommendations will be considered in

achieving compliance with DP4 of the BCA. It is recommended in the Green Guide that sufficient exit width is to be provided to prevent queuing times of over 8 minutes. Arup Fire believes the egress strategy for Project Star to be acceptable based on the architectural layouts presented as part of this Project Application, subject to some relatively minor amendments during the detailed design phase of this project.

The remaining levels of the casino and hotel will be assessed in a similar manner and preliminary reviews indicate appropriate exit widths can be achieved.

Smoke Control

The smoke management system for the building has been reviewed. The current system divides the Main Gaming Floor into smoke compartments not larger than 3500m², each provided with smoke exhaust at a rate of 40m³/s in order to prevent the smoke layer dropping below the downstands that form the smoke reservoirs (at approximately 7m above the floor level). The other floors of the building are designed using a similar approach. It is proposed to maintain the current approved smoke exhaust strategy for the Main Gaming Floor and levels above, extending the coverage to encompass the new works. Additional smoke zones will need to be created to provide exhaust to these new areas, with similar capacities to the existing zones. These smoke zones may need to be refined in the process of further design and analysis.

For the retail level, enclosure of the street will create a mall and this can be dealt with using smoke control measures that are standard practice in such environments.

Additional Fire Safety Issues for Consideration

Additional issues that will need to be considered in the fire safety design for the completed development will include the incorporation of a three-storey void in the new hotel and the provision of glazed stairs in a path of egress. As the hotel will link with the casino, those lower levels that are open to the casino will need to be addressed with regards to fire separation, egress and smoke management strategies.

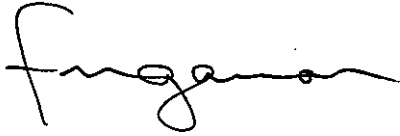
The entire fire safety strategy will be refined and documented over the coming months. In accordance with the International Fire Engineering Guidelines, this refining process will take the structure of the development of a fire engineering brief (FEB) to outline the scope of works for the fire engineering analysis and methods used to address these issues. Consultation with stakeholders will be required in the determination of acceptance criteria to be included in the fire engineering assessment (FEA). This document will elaborate on the FEB and include all analysis, comparing results with the previously determined acceptance criteria and the Performance Requirements of the BCA.

In order to achieve these fire safety aims whilst preserving the functional and aesthetic requirements of the project, performance based fire engineering will be required. It is our belief that performance based fire engineering can deliver a building design that meets the Performance Requirements of the BCA and we commend this project to the Department of Planning.

We trust that the above information is sufficient for Department of Planning's needs, with respect to fire safety design, in addressing the approval of the Environmental Assessment submission for Project Star.

If any further information is required for a determination to be made, we would be happy to assist in providing that information.

Yours sincerely

A handwritten signature in black ink, appearing to read 'F. Gamon', with a long horizontal flourish extending to the right.

Felix Gamon
Associate

cc Peter Lee, APP
 Owen Martin, APP
 Catherine Lee, APP
 Thomas Lay, APP