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Dear Chris

UNSW Biological Science Building Section 96 (SSD 6674)

Introduction

This letter considers the fire safety design of the new Biological Sciences Building at the University of NSW Kensington Campus, and specifically regarding the Section 96 in relating to the SSDA.

The Section 96 includes alterations to;

- Rooftop plant enclosure to house additional plant required to service the program. This consists of additional part storeys at Level 8.
- Changes to the facade
- Changes to the awning, which is lowered to high level Ground Floor to provide better weather protection
- The ground floor layout

It is considered that the proposed fire strategy is not significantly impacted on by the Section 96 changes that would result in changes to the SSDA.

The following outlines the key fire safety issues as noted in the original SSDA for completeness.

Proposed Fire Safety Issues

The fire safety design of the building will generally satisfy the Performance Requirements of the Building Code of Australia (BCA) by complying with the Deemed-to-Satisfy (DtS) Provisions. However, there are some aspects of the design that are developed using performance based fire engineering to achieve compliance with the Performance Requirements of the BCA. The main aspects that affect the building layout are highlighted below.

The design includes an atrium that will run through the building from Ground and is to be largely isolated from the floors above Level 1 i.e will have bounding non fire rated glazed construction apart from an open stair and minimal circulation space. The design for fire safety, is to utilise mechanical smoke exhaust from the atrium, with supply or passive

make up air through the ground floor and Level 1. Sprinkler protection will be provided throughout to minimise potential fire sizes. Smoke temperatures will be minimised through the sprinklers and high dilution of the smoke, preventing fire spread to non-fire floors. Smoke ingress onto non-fire floors will be minimised through the large air flows and glass walls. The atrium will have a number of non-compliances with regards to the DtS provision of the BCA and will be addressed on a performance based approach.

The building is expected to have an oversized fire compartment when compared to the DtS provisions of the BCA, This is to be addressed through performance based fire engineering that will demonstrate adequate separation is provided around the atrium that would limit fire spread floor to floor. The oversized compartment of Ground and Level 1 will be addressed as a separate Performance Solution.

Egress from the floors appears to comply with the deemed to satisfy provisions, however to provide future flexibility, extended travel distances will be allowed for in the design, through the use of AS1670 smoke detection and possible enhanced warning systems. Due to the level of separation from the atrium it may not be necessary to exit all levels of the new building simultaneously. This will be assessed in more detail as the design progresses but if possible the evacuation would be staged to minimise disruption from nuisance alarms.

At this stage of the design, other fire safety aspects of the building appear to be DtS compliant. It is anticipated that there will be other non-compliances with the DtS Provisions of the BCA as the design develops, however it is considered that there are no issues that would affect the building layout arising from fire safety.

Conclusion

The Section 96 works proposed will not affect the current approved fire engineered design solutions to address specific non-compliances with regard to the DtS provisions of the BCA.

Yours sincerely



Neil McPhail
Senior Engineer