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To whom it may concern

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Faculty of Arts and Social Sciences and RD Watt - Fire Engineering

This letter considers the fire safety design of the new Faculty of Arts and Social Sciences (FASS) building and refurbishment of the existing RD Watt building, located at the University of Sydney campus. This letter specifically addresses those aspects of the fire safety design that impact upon planning and hence DA issues for the building.

The buildings

The proposed new building will primarily be an educational building with Ground level (titled Level 1) lecture theatre use, assembly spaces and study lounges. The upper levels generally consist of meeting rooms, collaborative spaces and offices. It will be 6 storeys and have an effective height less than 25m. The building features a central atrium and open circulation stair connecting all levels.

The existing RD Watt building is also proposed to be refurbished and used as educational space with Ground level providing a lecture theatre, meeting room and registration space. The upper 4 levels are effectively half levels at each half landing of the central stair and contain research areas, classrooms, offices and common rooms. The building technically has 5 storeys however the 4 upper storeys could be considered as equivalent to 2 typical storeys due to the half landing arrangement. The building has an effective height less than 25m.

The fire safety design for both buildings 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 layouts, and hence the DA, are highlighted below.

FASS - Performance based design

The building has two fire-isolated stairs, one of which serves all upper floors and the other serves all floors above Level 2 as this stair discharges at Level 2 due to the sloping site. The fire stairs are located at either end of the building to provide egress away from the atrium and through smoke sealed walls which separate the ends of the building floor plate from the open atrium.

Any queuing into the stairs or extended travel distances on the floors will be accommodated using performance based fire engineering with the provision of the additional smoke separation and early detection from an AS1670.1 smoke detection system. Fire hydrant coverage will be from a combination of external hydrants, hydrants in the fire stairs and additional hydrant outlet on the floors (if necessary), to meet the operational requirements of Fire and Rescue NSW.

There is a large central atrium through all floors. As egress from the floors is not required to be through the atrium, the atrium smoke control design will be performance based, with a mechanical smoke exhaust system proposed. Occupants are provided with several exit routes from the atrium to a place of relative safety through provision of the smoke separating walls and doors. Therefore if occupants are required to queue for a fire stair, they do so in an area smoke separated from the atrium. The building will be provided with an automatic sprinkler system as a result of the atrium.

The building is within 6m of the heritage listed RD Watt building in some parts. Fire spread between the two buildings will be mitigated to the degree necessary through the use of internal sprinkler protection, rather than the requirement for external wall-wetting sprinklers, with analysis being undertaken to demonstrate the acceptability of such a design. This will be further developed during the design development of the project.

RD Watt - Performance based design

The building has one egress stair which serves all upper levels and discharges internally at Ground floor providing egress to 2 alternative final exits. As the building occupancy on the upper floors is in excess of 50 people, a performance solution will be provided to address the increased number of occupants required to evacuate via a single exit. The stair can be separated from the accommodation by smoke separating walls and doors on all levels to protect the single egress route which will based on the provision of sprinkler protection throughout. Spaces such as toilets, circulation routes, bike storage and the lift can be open to the stair which will be justified as part of a performance solution and demonstrated to be acceptable due to the low fire risk associated with these areas.

Extended travel distances on the floors will be accommodated using performance based fire engineering with the provision of the additional smoke separation and early detection from an AS1670.1 smoke detection system. Final exit door swing in the direction of escape due to heritage constraints will also be demonstrated not to impede evacuation via a performance based solution.

Rationalisation of the structural fire resistance to the bike storage area and for the existing timber floors will be undertaken as part of a performance solution based on the low risk use of the bike storage space and protecting the underside of the floors only to retain their structural stability.

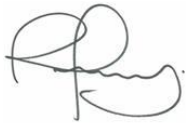
Location of fire-fighting elements including hydrant boosters and the fire control room for both buildings will be based on discussion with Fire and Rescue NSW.

Conclusion

At this stage of the design, other fire safety aspects of the building appear to be compliant with the deemed to satisfy provisions of the BCA. It is anticipated that there will be other non-compliances with the DtS Provisions as the design develops, however it is considered

that there are no issues that would affect the building layout arising from fire safety and hence no impediments to Council issuing development consent.

Yours sincerely



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