

To Whom It May Concern

Ross Street Teaching and Learning Hub - Fire Engineering SSDA Letter

16 August 2024

Dear Sir / Madam,

Mott MacDonald has been engaged by The University of Sydney to provide fire engineering services for the Ross Street Teaching and Learning Hub. This letter has been prepared on behalf of the University of Sydney to support a State Significant Development Application (SSDA) to the Department of Planning.

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The Development

The proposed Ross Street Teaching & Learning Hub is designed to maximise the accommodation of large flat floor teaching spaces. The facility will adopt a teaching at scale methodology that allows the University to transition to an increased ratio of face-to-face teaching (from online teaching) in accordance with its strategic plan and recent foreign legislation.

Within the University of Sydney Camperdown campus, the proposed development comprises of approximately 6,200m² of GFA over five floors. The floor area is primarily formal teaching areas and informal learning areas, with ancillary meeting rooms, amenities, a food and beverage tenancy and plant areas.

The proposed development includes public domain upgrades and landscaping surrounding the new building to integrate the Ross Street Teaching & Learning Hub with its setting.

Proposed Fire Safety Design

The objective of the fire safety design of the development is to achieve compliance with the Performance Requirements of the Building Code of Australia (BCA) 2022. The primary objectives of the BCA are to protect life safety, prevent fire spread to adjacent buildings and facilitate fire brigade operations. Primarily the building will achieve compliance with BCA Performance Requirements through compliance with the Deemed to Satisfy (DtS) Provisions of the BCA. Where the DtS Provisions are found to be unsuitable for the development, Performance Solutions will be developed to demonstrate that the Performance Requirements of the BCA are met.

The building generally consists of two fire isolated stairs located at opposing ends of the building and an open stair between Levels 1 and 2 to the south. Egress from Level 1 will be via the open stair to the south and the fire isolated stair to the north of the floorplate. Level 2 serves as the ground floor, providing direct egress to the outside via perimeter doors. Egress from the upper Levels 3-5 of the building will be via the two internal fire isolated stairs. These two stairs will also support day to day communication between the floors. The stairs will provide occupants with a protected path of egress to outside the building.

A sprinkler system will be provided throughout the building to limit the potential fire size. The sprinkler system will be combined with the fire hydrant system. Smoke detection and EWIS systems will be provided to detect and alert occupants in the event of a fire. To provide flexibility in the design, enhanced detector spacing is being implemented to offset extended distances to a point of choice. A fire hose reel system will be provided to enable first response firefighting.

Fire brigade intervention will be integrated into the site wide strategy at the university. A combined fire hydrant and sprinkler system will be provided throughout the building to facilitate FRNSW activities in the event of a fire. The system will use the existing fire pumps in the neighbouring FASS building.

A number of Performance Solutions have been identified by the project BCA consultant and design team which are likely to be required in the next phase of the project, these relate to the following:

- Areas with extended travel distance to a point of choice
- Omission of smoke exhaust from fire compartments over 2000m²
- Use of a combination of solid, glazed and potentially operable elements to achieve a two hour fire resistance level
- Use of the existing FASS building fire pump room which:
 - contains other equipment not related to the fire system
 - does not provide direct access, or access through an airlock to a fire stair leading, to a road or open space
- Location of fire booster not at the site boundary
- Integration into campus wide Fire Management System
- Use of non-fire rated fire stair discharge door

These Performance Solutions are considered likely to demonstrate compliance with the BCA Performance Requirements. The approach adopted by Mott MacDonald generally follows the Australian Fire Engineering Guidelines. By demonstrating compliance with the BCA Performance Requirements, an acceptable level of safety is considered to be achieved by the design.

There may be additional BCA non-compliances as the design develops, at this stage it is not anticipated that there will be significant issues relating to fire safety impacting on the SSDA submission.

Best regards,



Andrew Addinsell
Technical Director - Fire