Reference: 202011_DA_06

09 July 2021

Deicorp Projects Showground Pty Ltd
Level 3, 161 Redfern Street
Redfern NSW 2016

Attention: Joelle Khnouf

RE: DA Support | Hills Showground Station Precinct| Doran Drive Precinct Castle Hill.

The purpose of this statement is to provide confidence to the Consent Authority that prior to the issue of Development Application (DA) Consent, that the proposed development known as the Doran Drive Precinct in Castle Hill Castle Hill NSW will be formally assessed by an Accredited C10 Fire Safety Engineer and demonstrated to fully comply with the Performance Requirements of the Building Code of Australia (BCA), as applicable within New South Wales.

The proposed site contains street frontages on all sides, namely, Doran Drive, De Clambe Drive, Andalusian Way and Mandala Parade. The building design includes six (6) levels of true basement Class 7a carparking, above ground the land slopes and incorporates part of the site that is under ground and part that is above. At Ground level a retail entrance to a shopping mall that houses a large supermarket space with multiple specialty stores leading to Doran Drive. The upper ground floor provides another entrance to the retail mall and access to the podium level childcare and the car park driveway entrance. The Level 1 is occupied by a large loading dock that provides further access to the retail mall and specialty store and also incorporates a community space facing De Clambe Drive. The podium Level is at Level 1 and is afforded a large open to the sky stair that connects De Clambe Drive to the podium. At level 1 there is a large open to the sky central communal area, a community centre and the childcare facility. On levels 2, the building is separated into 4 towers that are occupied by Class2 residential use.

The building has a Rise in Storeys of twenty two (22) and effective height as per the requirements defined in the BCA that exceeds 50m but is consistent with the permissible building height of 68m or 20 storeys. The development will therefore be built to comply with Type A construction provisions and afforded with the full suite of fire safety provisions for a building of this size and nature.

The building design incorporates design features that do not fully meet the prescriptive Deemed-to-Satisfy (DtS) provisions of the BCA. As a result of the design not conforming to the DtS provisions of the BCA, the building solution applied shall be performance based rather than wholly prescriptively based.

In undertaking this review Affinity Fire Engineering has reviewed the Development Application submission architectural drawings prepared by Turner Architects (Project: 19068, DA Submission plans, dated 25/06/2021) and the BCA compliance advice provided by Mondan Consulting Pty Ltd (Report Ref: M200033_04BCA, Revision: D, Dated: 30/06/2021) and have provided fire safety engineering advice through emails, meetings, mark ups and workshops with recommended design changes to be incorporated in order to achieve a level of safety that enables the design to meet the performance provisions of the BCA.

Based on these documents, Affinity Fire Engineering's review and advice confirms that the proposed design incorporates features that have been identified to not meet the prescriptive Deemed-to-Satisfy (DtS) provisions of the BCA. As a result of the design not conforming to the DtS provisions of the BCA, the building solution applied shall be performance based rather than wholly compliant with the BCA.

In particular, the fire safety strategy and fire engineering design shall focus on the following site critical design issues in order to confirm compliance with the Performance Requirements of the BCA:-

- Occupant egress in the event of a fire emergency and the maintenance of tenable conditions for occupant evacuation and fire brigade intervention;
- Fire and smoke spread throughout the building and its impact on occupant egress;
- Site access and fire services design to facilitate fire brigade intervention.

Amongst other matters which may be established through the full design development stages, the fire safety strategy and associated reports shall incorporate assessment of the following non-conformances with the DtS provisions of the BCA:-

- There are locations in the basement car park levels where the form of fire separation between the Class7a car park and the Class 6 retail shall utilise drencher protected glazing in lieu of a tested system to achieve the required FRL as defined in BCA Clause C1.1. The assessment shall address the Performance Solution CP2.
- Allowances for wet area set downs to achieve 60/60/60 FRL in lieu of the BCA required FRL of 90/90/90 as set out in BCA Clause C1.1.
- Assessment of the corridor lengths that exceed 40m to not be provided with a smoke door as required by BCA Clause C2.14 and addressing Performance solution EP2.2
- Determining a suitable degree of protection to service penetrations in the 240/240/240 FRL firewall separating the Waste Loading Dock compartment – BCA Clause C3.15 and addressing Performance Requirements CP2 and CP8.
- Allowance of a single exit to minor retail, residential entry lobbies and the like at the lower levels, in lieu of the BCA required 2 exits under BCA Clause D1.2 and addressing BCA Clause DP4 and EP2.2.
- Rationalising travel distances within the carpark areas where they exceed the prescriptive BCA DtS limitations of 20m to a point of choice, 40m to the nearest exit and more than 60m between alternative exits (approx. measurement is to 26m, 56m and 100m respectively – Note plenums are to comply with distance to a point of choice)– BCA Clauses D1.4 and D1.5 and addressing Performance Requirements DP4 and EP2.2.

- Rationalising travel distances within the retail and loading dock parts where they exceed the prescriptive BCA DtS limitations of 20m to a point of choice, 40m to the nearest exit and more than 60m between alternative exits (approx. measurement is to 30m, 48m and 93m respectively)– BCA Clauses D1.4 and D1.5 and addressing Performance Requirements DP4 and EP2.2.
- Assessing travel distances within the residential levels that exceed the prescriptive BCA DtS limitation of 6m to a point of choice (approx. measurement is up to 12m) – BCA Clause D1.4 and addressing Performance Requirements DP4 and EP2.2.
- Assessing travel distances within the Level communal external terrace to exceed 20m to a point of choice. (Maximum of 30m allowed for) – BCA Clause D1.4 and addressing Performance Requirements DP4 and EP2.2.
- Assessing travel distances within the residential levels that exceed the prescriptive BCA DtS limitation of 9m between exits (approx. measurement of 4.5m) – BCA Clause D1.5 and addressing Performance Requirements DP4 and EP2.2.
- Assessing travel distances within the residential Level 2 that exceed the prescriptive BCA DtS limitation of 45m between exits (approx. measurement of 50m) – BCA Clause D1.5 and addressing Performance Requirements DP4 and EP2.2.
- Determining the suitability of the fire-isolated stairs discharge location into a covered area that are not open 2/3 of its permitter or that require travel past openings in the same building – BCA Clause D1.7 and addressing Performance Requirements DP5.
- The Level 2 external communal rooftop acts a 'roof as open space' associated with the fire stair discharge and there are a number of drainage openings that are located within 3m of the egress path to a road from the fire stairs which are to be allowed in lieu of the requirements of BCA Clause D1.12. The assessment shall address DP5 and DP6.
- Through consultation with Fire & Rescue NSW, determine suitable location and access provisions for the combined fire hydrant and sprinkler system infrastructure, valve room, the booster assembly and the Fire Control Room – BCA Clause E1.3 and E1.5, and addressing Performance Requirements EP1.3 and EP1.4.
- Allow the use of the combined sprinkler system in accordance with AS2118.1-6 which references an old Sprinkler standard. _BCA Clause E1.5
- The retail mall and associated supermarket shall be afforded with a performance-based smoke exhaust system that is commensurate with eth occupant egress provisions of the spaces in lieu of the strict smoke exhaust system outlined in BCA Clause E2.2b. The assessment shall address DP4 and EP2.2.
- Assessment of the atrium conditions within the retail mall in order to achieve a suitable level of protection and separation – BCA Clause G3.
- Due to the basement carpark levels forming one fire compartment and the difficulty in achieving an airflow of 1m/s across the doorways without increasing the force for door operation past 110N a rationalised stair pressurisation system is proposed through fire engineering – BCA Clause E2.2a and addressing Performance Requirements EP2.2.

Unless identified above all other matters are expected to achieve compliance with the BCA. Design change may be required to achieve this.

The identified list of deviations from the prescriptive BCA provisions is a non-exhaustive list as result of the limited services design input at this concept design phase, which may be increased once full services design input is received.

The subject design for the mixed use retail and multi apartment residential development known as Doran Drive Precinct in Castle Hill NSW is considered by Affinity Fire Engineering to not compromise the expected fire safety strategy, fire brigade intervention or conformance with the building regulations. Hence, Affinity Fire Engineering anticipate that the fire safety engineering assessment to be conducted as part of the Construction Certificate stage will achieve compliance with the Performance Requirements of the BCA.

It is noted that this document should not be used for Construction Documentation as the formal fire engineering process and assessment is required to be completed prior.

We trust that the above information is sufficient for Consent Authority's needs with respect to fire safety design and compliance with the relevant building regulations in this regard. Should any further information be required for a determination to be made please contact the undersigned on 02 9194 0590.

Yours faithfully

Thomas O'Dwyer

Director,

Affinity Fire Engineering

Fire Safety Engineer - BPB 0766

M: 0499 977 202