AFFINITY
FIRE ENGINEERING

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Frasers Property Ivanhoe Pty Ltd

Level 2, 1C Homebush Bay Drive,
Rhodes NSW 2138 Australia

Attention: Chris Koukoutaris

RE: DA Letter of Support | Ivanhoe Estate – Stage 2 | Lot C3

This advice is provided as support to the Development Application for Lot C3 of the Ivanhoe Estate redevelopment, a State Significant Development (SSD) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). It has been prepared for Aspire Consortium on behalf of NSW Land and Housing Corporation.

In September 2015 the Ivanhoe Estate was rezoned by DPE as part of the Macquarie University Station (Herring Road) Priority Precinct, to transform the area into a vibrant centre that benefits from the available transport infrastructure and the precinct's proximity to jobs, retail and education opportunities within the Macquarie Park corridor.

The Ivanhoe Estate is currently owned by NSW Land and Housing Corporation and comprised 259 social housing dwellings. The redevelopment of the Ivanhoe Estate is part of the NSW Government Communities Plus program, which seeks to deliver new communities where social housing blends with private and affordable housing, with good access to transport, employment, improved community facilities and open space.

The Communities Plus program seeks to leverage the expertise and capacity of the private and non-government sectors. As part of this program, Aspire Consortium, comprising Frasers Property Australia and Mission Australia Housing, were selected as the successful proponent to develop the site in July 2017.

In September 2017, DPE issued the Secretary's Environmental Assessment Requirements for a comprehensive Masterplan application that will establish the framework for the staged redevelopment of the site. This Development Application for Lot C3 of the Ivanhoe Estate redevelopment represents the 2nd stage of detailed works pursuant to the Ivanhoe Estate Masterplan.

The Ivanhoe Estate site is located in Macquarie Park near the corner of Epping Road and Herring Road within the Ryde Local Government Area (LGA). The site is approximately 8.2 hectares and previously comprised 259 social dwellings, comprising a mix of townhouse and four storey apartment buildings set around a cul-de-sac street layout

Immediately to the north of the site are a series of four storey residential apartment buildings. On the north-western boundary, the site fronts Herring Road and an adjacent residential development site. Epping Road runs along the south-western boundary of the site and Shrimptons Creek, an area of public open space, runs along the south-eastern boundary. Vehicle access to the site is via Herring Road.

Ivanhoe Estate comprised of 17 individual lots owned and managed by the NSW Land and Housing Corporation. The Masterplan site also incorporates adjoining land, being a portion of Shrimptons Creek and part of the commercial site at 2-4 Lyonpark Road. This land is included to facilitate a bridge crossing and road connection to Lyonpark Road.

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 Ivanhoe Estate Stage 2 - Lot C3, 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 is afforded street frontages on 3 sides, identified as “Neighbourhood Street 3” to the south, “Neighbourhood Street 2” to the West and Main Street to the East. To the north of the site is a community park. The building design includes two (2) levels of true basement Class 7a carparking (noting that Basement level 01 is deemed a storey as parts are more than 1m above ground), with Basement 01 also used for Class 7a Car parking. The Ground Floor accommodates multiple Class 6 retail tenancies, the retail loading dock and the residential entry lobbies. Above ground a single Class 2 residential tower rises with 2 separate cores defined as Tower A and Tower B. Tower A accommodates 16 storeys above ground floor while Tower B accommodates 15 storeys. Overall, the building has a Rise in Storeys of eighteen (19) when considering the lowest level being Basement 01, and effective height exceeding 50m (approx. 58.9m) and therefore 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 Fox Johnston Architecture (Project: C3 Midtown MacPark, DA Documentation, dated 01/07/2021) and the BCA compliance advice provided by AE&D Pty Ltd (Report Ref: 11067, Revision: 2.0, Dated: 22/06/2021) 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:-

- Assessment of the residential wet are set downs to allow a 20mm setdown (min slab thickness of 180mm) which is identified to reduce the FRL from the required 90/90/90 FRL to 60/60/90 – BCA Clauses C1.1 and addressing Performance Requirements CP2.
- Assessment to reduce the FRL of the Ground floor retail parts from the required 180/180/180 FRL to 180/120/120 – BCA Clauses C1.1 and addressing Performance Requirements CP2.
- Assessment to reduce the FRL of the penetration sealing through the Loading dock 240/240/240 where FRL tested products do not exists– BCA Clauses C1.1 and addressing Performance Requirements CP2.
- Rationalise the external wall separation provided between separate fire compartments at the Ground Floor where separation distances are not compliant. – BCA Clauses C3.3 and addressing Performance Requirements CP2 and CP8.
- Allowance of a single exit from smaller retail tenancies and the Tower Entry lobbies on the Ground floor – BCA Clauses D1.2 and addressing Performance Requirements 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 25m, 45m and 85m respectively)– BCA Clauses D1.4 and D1.5 and addressing Performance Requirements DP4 and EP2.2.
- Rationalising travel distances on the rooftop plant areas to allow a distance of travel of up to 30m in lieu of the prescriptive BCA DtS limitations of 20m to a point of choice – BCA Clauses 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 6m to a point of choice (approx. measurement is up to 10m) – BCA Clause D1.4 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 1/3 open – BCA Clause D1.7 and addressing Performance Requirements DP5 and EP2.2.

- Determining the suitability of the fire-isolated stairs discharge requiring occupants to travel past openings within the same building that are not protected in accordance with BCA Clause C3.4 – BCA Clause D1.7 and addressing Performance Requirements DP5 and EP2.2
- Allowance for the non-required non-fire isolated stairs that are located on the upper levels within the external terrace gardens to connect 3 storeys without one of the storeys being the level of discharge to the road. BCA Clause D1.12 and addressing Performance Requirements EP2.2.
- Assessment to allow drainage openings located within 3m of the path of travel to the road from the fire stairs on the podium roof as open space portions - BCA Clause D2.12 and addressing Performance Requirements DP5 &EP2.2.
- 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, E1.5 and E1.8, and addressing Performance Requirements EP1.3, EP1.4 and EP1.6.
- Through consultation with Fire & Rescue NSW, assess the external fire hydrants that provide protection to the townhouses to be located within 10m of the building and not be protected in accordance with AS2419.1-2005 – BCA Clause E1.3 and E1.5, and addressing Performance Requirements EP1.3 and EP1.4.
- Allow an rationalised zone smoke control to the ground floor loading dock and retail due to the inability to achieve a pressure differential across the car park and residential levels– BCA Clause E2.2a and addressing Performance Requirements EP2.2.

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 residential multi apartment residential development known as Lot C3 within Stage 2 of the Ivanhoe Estate 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 - BDC 0766

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