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Confidential

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Dear Chris

Ivanhoe Estate Stage One Development Approval Air Quality Assessment - Response to Stakeholder Comment

WSP Australia was appointed by Frasers Property Australia to undertake a qualitative air quality assessment (Appendix ZA Air Quality Report, October 2018) for Stage 1 of the Ivanhoe Estate mixed-use residential development, a State Significant Development (WSP, 2018). Stage 1 of the Ivanhoe Estate development consists of two multi-storey mixed use buildings with underground carparks and an internal road network. Activities that have the potential to impact air quality include traffic from adjacent (Epping and Herring roads) and internal roads, vehicle exhaust discharge from the underground car parks and emissions from commercial kitchens associated with cafes and/or restaurants.

The following comment on the air quality assessment report was received during the stakeholder engagement process:

'The Air Quality Report states that there may be potential air quality impacts from the location of the basement exhaust in Building A1 adjacent to the child care centre afternoon play area and recommends monitoring prior to operation to confirm the play area is not impacted. Confirm what options would be available if the recommended future monitoring confirms the play area is impacted?'

The air quality assessment identified the potential for air quality impacts from the basement car park discharge points in buildings A1 and C1. It was recommended (where possible) that the basement car park exhaust discharge points should be located as far as practicable from outdoor areas where people are likely to be present for extended periods of time (e.g. the child care centre's afternoon outdoor play area and residential balconies). WSP also recommended that ambient air quality monitoring be undertaken in the childcare centre's outdoor play areas prior to commencement of child care centre operations to ensure that the site is not being impacted by vehicle exhaust from the nearby basement car park discharge point.

The following measures would be implemented at the design and operation stages of development.

The car park discharge points would be designed in accordance with Australian Standard AS1668.2-2002 *'The use of ventilation and air conditioning in building, Part 2: Ventilation design for indoor air*

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contaminant control' which sets design requirements for mechanical ventilation systems. Section 5 of the Australian Standard states the following:


- 5.22 Exhaust Locations: As far as practicable, exhaust-air intakes used for general exhaust-air collection shall be located on the opposite sides of the enclosure from the sources of make-up air, to ensure that the effluents are effectively removed from all parts of the enclosure.
- 5.3.2.1 General requirements: The effluent shall be collected as it is being produced, as close as practicable to the source.
- 5.10.1 Air discharges: Where discharges are deemed to be objectionable (i.e. nuisance related), discharges shall:
 - Be emitted vertically with discharge velocities not less than 5 m/s.
 - Be situated at least 3 m above the roof at point of discharge.
 - Treated to reduce the concentration of contaminants were required.
 - Be emitted to the outside of velocities and in a direction that will ensure, to the extent practicable, a danger to health or nuisance will not occur.
 - Be situated a minimum separation distance of 6 m (where the airflow rate is $\geq 1,000$ L/s) from any outdoor air intake opening, natural ventilation device or opening, and boundary to an adjacent allotment, except that where the dimensions of the allotment make this impossible, then the greatest possible distance shall apply.

Other measures at the design stage could include increasing the natural airflow / ventilation (where possible) in the basement car parks to assist with the dispersion and dilution of pollutants. The height and velocity of the discharge points could also be increased to increase pollutant dispersion.

A Traffic Management Plan which outlines on-site management measures could be prepared and implemented to reduce emissions e.g. These may include preventing the queuing and idling of cars in the basement car parks and avoiding queues at the entrance / exit of the car parks. The Traffic Management Plan may be issued to the child care centre for comment.

Given the intermittent and temporary nature of pollutants generated in the car parks, it is not anticipated that ambient pollutant concentrations at the child care centre's outdoor play area would exceed the applicable ambient air quality criteria.

Yours sincerely



Nicola Enslin
Associate