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ATTN: COLIN ROCKLIFF

Lakes Business Park Rezoning - Aircraft Noise Intrusion - Supplementary Report

This report has been prepared to address comments provided by the Department of Planning in addition to supplementing the original Noise Impact Assessment Prepared for the Lakes Business Park (ref: 20150368.1/1405A/R1/TA)

Department of planning comments are as follows:

> *1. Proposed ANEF noise impacts –provide a clear map of location of the proposal in relation to the ANEF contours (it seems to fall largely within the 25-30 ANEF) and justification in relation to the S117 Direction 3.5 Development Near Licensed Aerodromes as to how the aircraft noise will be dealt with;*

The map presented in Figure 1 presents the current Masterplan for the Lakes Business Park site with the ANEF2 25 contour which divides the site. As stated within the original noise impact assessment, the current ANEF2033 maps indicate that the site is located on the ANEF 25 contour, with the eastern portion of the site within the ANEF 20 – 25 site area and the western portion of the site within the ANEF 25-30 site area. This is in contrast to the superseded ANEF2029 map, where the entire site was contained within the ANEF 25-30 site area. This indicates that the forecast noise level exposure at the site has decreased since the production of ANEF2029 in 2009. This long term trend is likely to continue given Sydney Airport has a cap on aircraft movements, and that new generation aircraft, such as the A380, are quieter than the current generation of aircraft on which the current ANEF contours are based.

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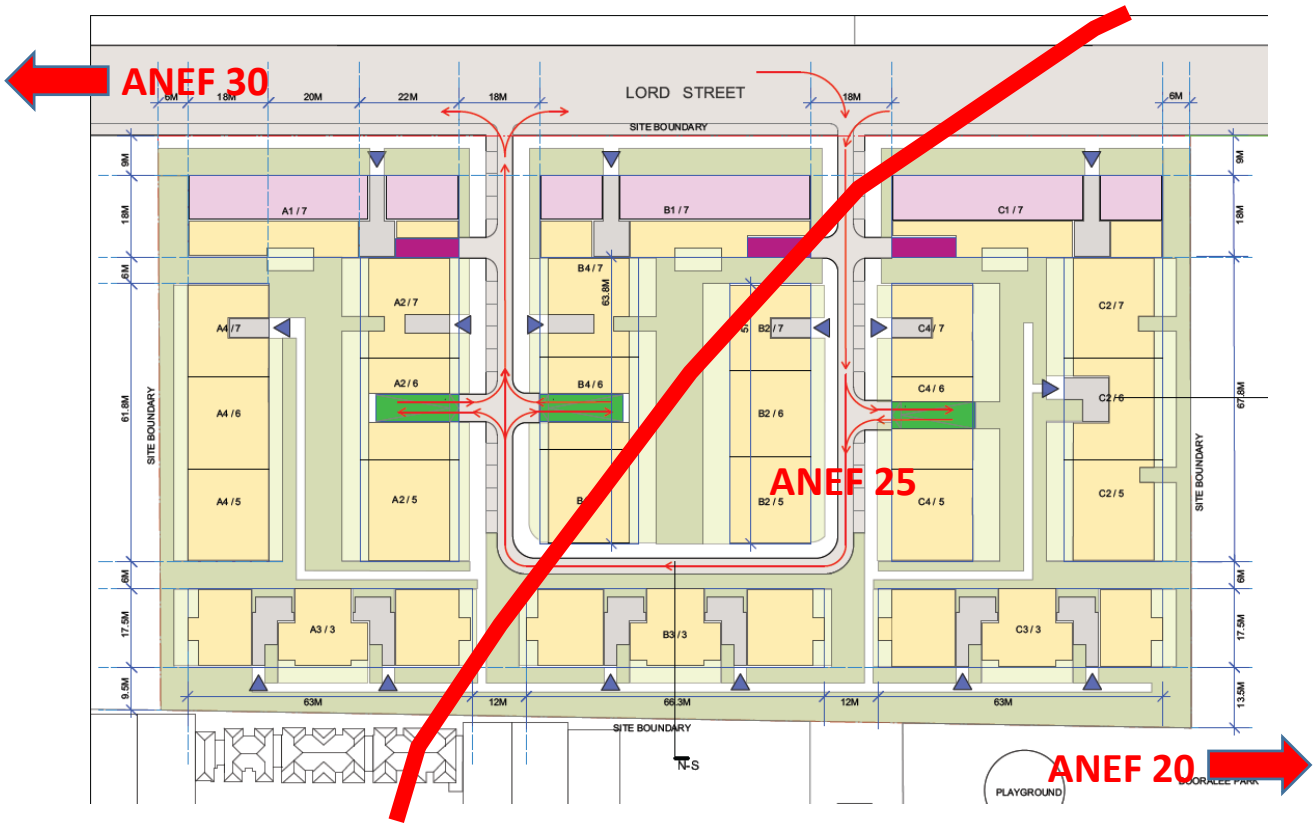

Figure 1 – Aircraft Noise Exposure Study Area

S117 Direction 3.5 Development Near Licensed Aerodromes states in Section 6:

> *"A planning proposal that rezones land …. must include a provision to ensure that development meets AS 2021 regarding interior noise levels."*

AS2021 states that a full evaluation of internal noise levels should be carried out for locations with an aircraft noise exposure close to or exceeding ANEF 20. This full evaluation requires an examination of likely levels of internal noise from aircraft flyovers. AS2021 stipulates the internal noise levels listed in Table 1 for residential buildings. These levels will be used to assess aircraft noise intrusion into the residential levels of the development.

Achieving the internal noise levels of AS2021 within the apartments though façade treatments (windows, external wall treatments, etc) results in occupants of the development within ANEF 25-30 achieving the same level of internal amenity as occupants located within ANEF20-25.

Table 1 - Indoor Design Sound Levels for Aircraft Noise Reduction Assessment

ACTIVITY	INDOOR DESIGN SOUND LEVEL FROM AIRCRAFT FLYOVER, dB (A)
Sleeping areas	50 dB (A)
Other habitable spaces	55 dB (A)
Bathrooms, toilets, laundries	60 dB (A)

Based on the distance from the site to the runways, and an assessment of all the aircraft listed in AS 2021:2000, the Standard predicts that the highest typical aircraft movements will be from Boeing-767s landing on the East/West Runway and taking off from the Third Runway. The noise level at the site as indicated by the standard is 72dB(A) for landing aircraft and 78dB(A) from aircraft taking off. It is noted that the 78dB(A) noise level is consistent across the entire site, as the flight path generally runs parallel within the northern boundary of the site. These noise levels have been used to predict the internal noise levels and specify indicative façade constructions.

It is noted that the façade recommendations are indicative only as window sizes and room layouts are not available at this stage.

Glazing

Assuming typical bedroom and living room size, 10.38mm laminated glazing with an STC of 35 with full perimeter acoustic seals would result in AS2021:2000 compliant internal noise levels.

External Walls

All external walls are proved to be of masonry construction (concrete or brick veneer); no acoustic upgrade is required for AS2021:2000 compliance. Indicative compliant constructions subject to the final design are as follows:

162mm AFS (with internal finishes to architect's detail)

150mm Precast (with internal finishes to architect's detail)

140mm Brick (with internal finishes to architect's detail)

Roof Construction

The proposed 200mm thick concrete slab roof does not require any acoustic upgrade for compliance with AS2021 internal noise goals.

It is therefore concluded that:

- It would be appropriate to permit residential development on the basis that the buildings would be constructed to meet the internal noise level recommendations contained in AS2021:2000; and

- Typical building and façade constructions will result in internal aircraft noise levels that are compliant with the requirements of AS2021:2000.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Consultancy Pty Ltd
Thomas Aubusson