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Acoustic Report

- Aircraft Noise –

For the proposed Residence at

No. 8 Owen Rd, Georges Hall

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1.0 INTRODUCTION

The aim of this report is to determine the building materials to be used and the construction methods to be adopted such that the proposed development at No. 8 Owen Rd, Georges Hall is built to achieve the internal noise and vibration levels as specified in AS 2021-2015 "Acoustics-Aircraft Noise Intrusion –Building Siting and Construction" and Canterbury Bankstown Council Conditions/Requirements.

As the acoustic study below shows, we certify that the internal noise attenuation levels for the proposed development at the above address will satisfy the requirements of the AS 2021-2015 and Canterbury Bankstown council requirements, provided that the materials to be used in the construction comply with the specifications presented in this report.

The site is situated on Owen Road, in the suburb of Georges Hall (Figure 1 – Site Location). The architectural plans by Nemco dated December 18th, 2023 are for the proposed construction of secondary dwelling at the rear of an existing dwelling (Figure 2 – Proposed Site Plan).

2.0 ACOUSTICAL STUDY

The site is located north of Bankstown Airport, between the ANEF 20 and ANEF 25 contours (Figure 3 – ANEF Bankstown Airport Map). According to Table 2.1 of *AS 2021:2015 Acoustics – Aircraft noise intrusion – Building siting and construction*, any home unit development is conditional acceptable, provided all building elements are constructed in accordance with the noise mitigation requirements of the above code. The noise attenuation proposed in this report and the building components treatments described below will result in a residence that is more acoustic sound than surrounding houses and existing residence.

All aircraft noise attenuation to be expected from the proposed additions and alteration is determined in accordance with Clause 3.2. Maximum allowable indoor noise level as determined from Table 3.3 is 50dB(A) for relaxing and sleeping areas, 55dB(A) for other habitable areas and 60dB(A) for toilets and kitchen.

DT, DL, DS for the critical runway (Figure 4 – Critical Runway) are determined as per Figure 3.1 page 16 of the above code and presented in the table below:

Critical Runway (metres)	
DS	800
DL	47
DT	1075

The maximum aircraft noise level as determined from Table **3.51(B)** through **3.53(B)** is 65 **dB (A)** for typical general aviation aircraft on take-off, such as BEC58P and CAN182 fixed wing aircrafts.

- The Aircraft Noise Reduction, in sleeping areas and dedicated lounges is **65**-50= **15 dB(A)**
- The Aircraft Noise Reduction in any other habitable spaces is **65** -55= **10 dB(A)**
- The Aircraft Noise Reduction in bathrooms, toilets and laundries **65**-60= **5 dB(A)**

3.0 FAÇADE & ROOF WEIGHTED SOUND REDUCTION INDICES R_W

The building façade and roof weighted sound reduction indices R_w are determined in accordance with Appendix C and Appendix G, Section G3.1 of AS 2021:2015. The most practical façade and roof material specifications and building components to suit the required noise reduction indices for the above project are provided in Table 3.1 below:

3.1 Windows/Sliders, Doors, External Walls and Roof

Building Component	***Rw Rating to be Achieved on Site***
Window, Sliding Doors in all Habitable Areas are to be 6.38mm Laminated with full perimeter Fin Mohair acoustic seals (1)(2)(3)	**32**
Windows and Sliding Doors in all other Non-Habitable Areas (Toilets, laundries, ….) are to be unrestricted in accordance with Australian Standard AS 2047 (Windows in Buildings) (1)(2)(3).	**25**
Entry Doors are to be solid core with acoustic seals fitted around the doors. A drop seal is also required at the base of the doors (2),(3).	**30-33**
External Walls & Facia are to be standard double brick cavity walls or 250/240 mm brick veneer construction with R2, 75mm thick insulation in the stud cavity and 13 mm plasterboard. (2)(3). OR 90mm conventional timber stud-framed walls cladded externally with min. 6.0 mm thick selected cladding and lined internally with 13mm plasterboard, plus cavity filled with 75mm 11kg/m^3 insulation. (2)(3).	**50** **41**
Roof Colorbond Steel Roofing on 13mm plasterboard ceiling with 75mm thick, 11kg/m3 insulation, in ceiling cavity (3)	**43-45**

NB: This report is to be read in conjunction with the BASIX/NatHERS certificate and any other related building specification.

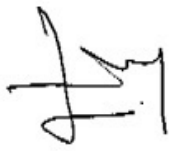
(1). No see- through weep holes in windows/sliders. (2) All gaps between window & door frames and the masonry walls are to be sealed using acoustic foam Hilti CP620 or similar (Bostic/Parfix/Sika). Glass wool batts should be applied prior to the application of the foam to seal larger gaps. (3) All gaps are to be acoustically sealed.

4.0 Conclusion

As the acoustical study above shows, we certify that the internal noise attenuation levels for the proposed development at No. 8 Owen Rd, Georges Hall will satisfy the requirements of the AS 2021-2015 "Acoustics-Aircraft Noise Intrusion –Building Siting and Construction" and Canterbury Bankstown requirements, provided that the above recommended materials are used in construction. The internal noise levels in the proposed home units will enable reasonable amenity for the occupants.

We hope this report meets your requirements. Should you require further explanations, please do not hesitate to contact us.

Yours sincerely,



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5.0 APPENDIX

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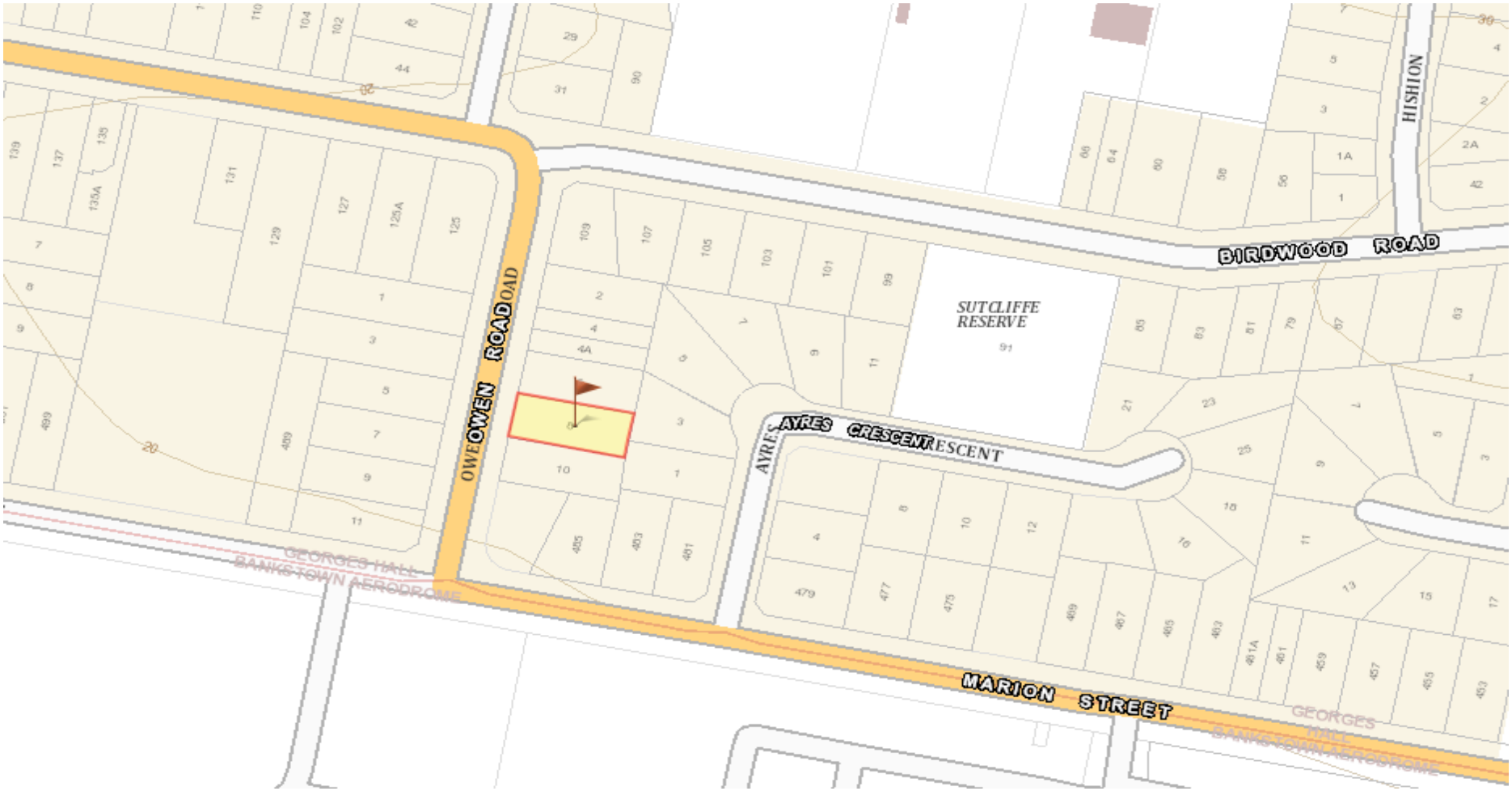

Figure 1 - Site Location

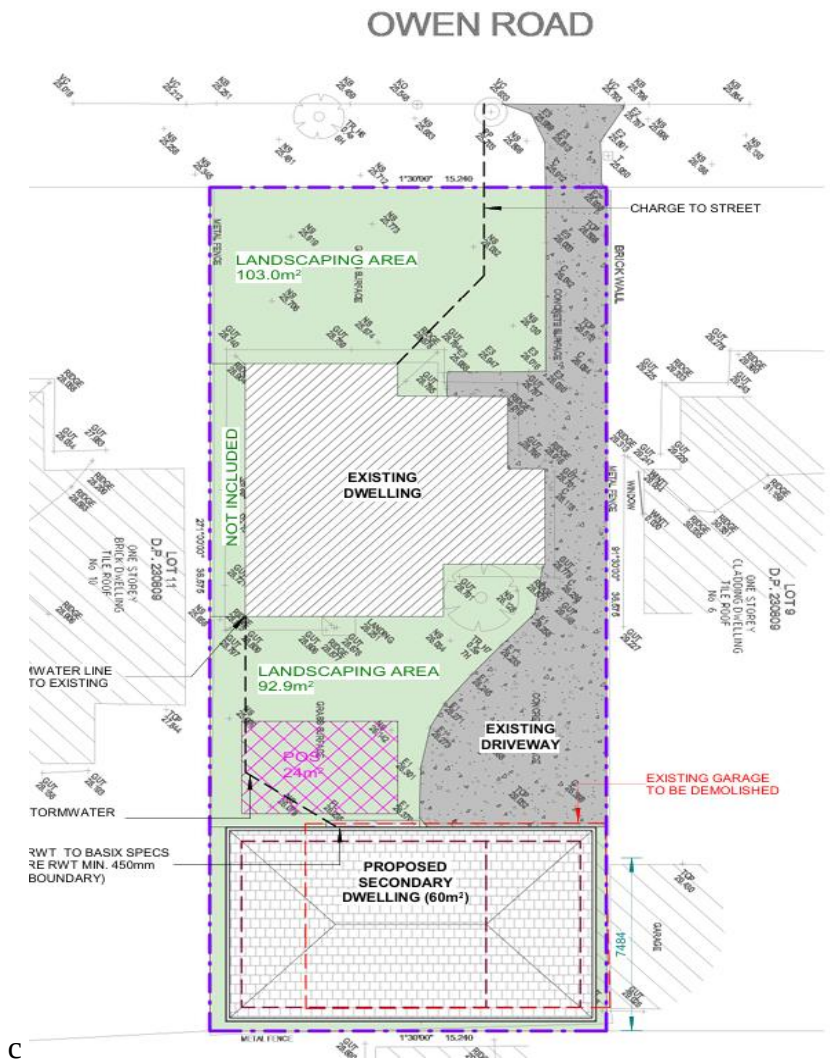

Figure 2 – Proposed Site Plan

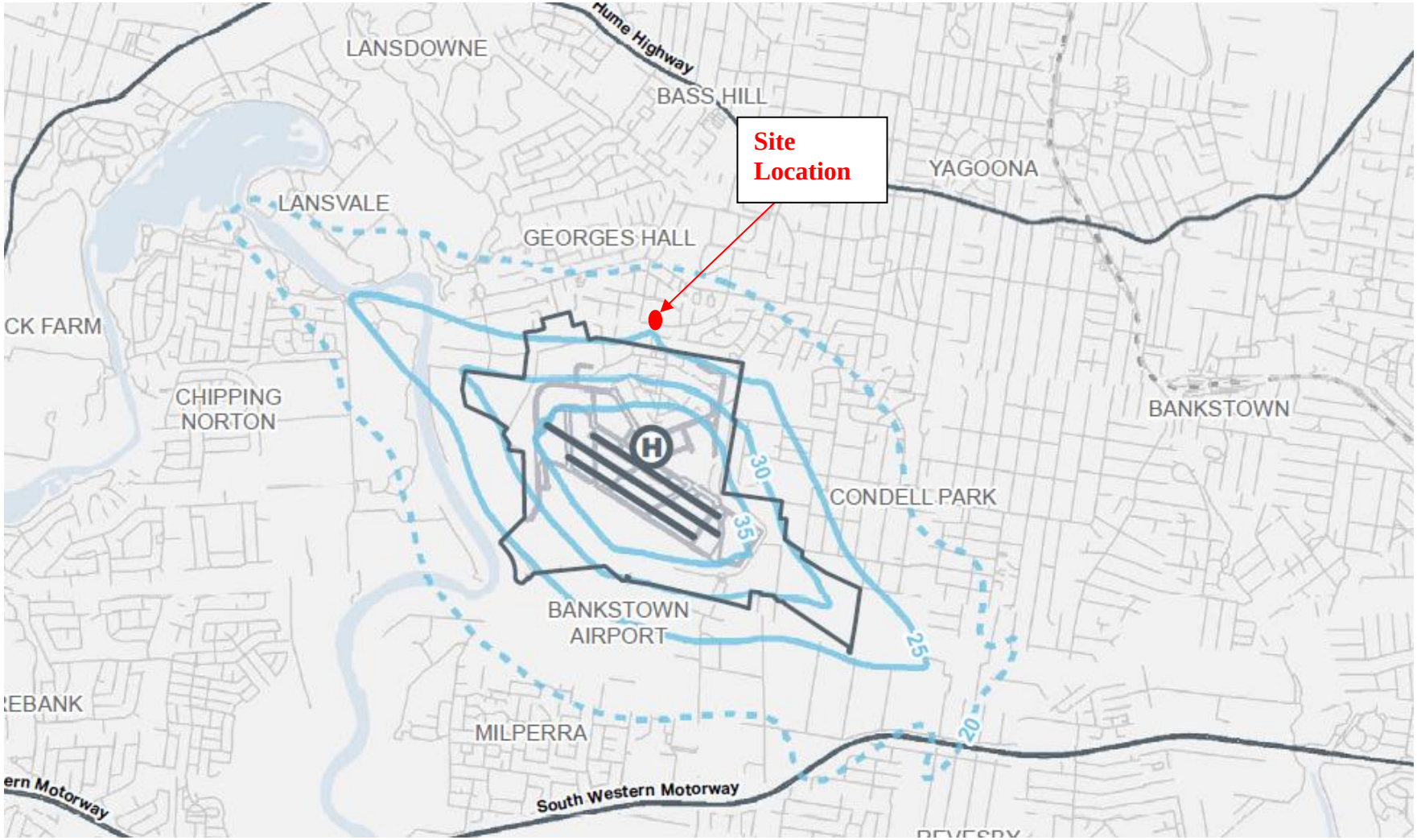

Figure 3- ANEF Bankstown Airport Map

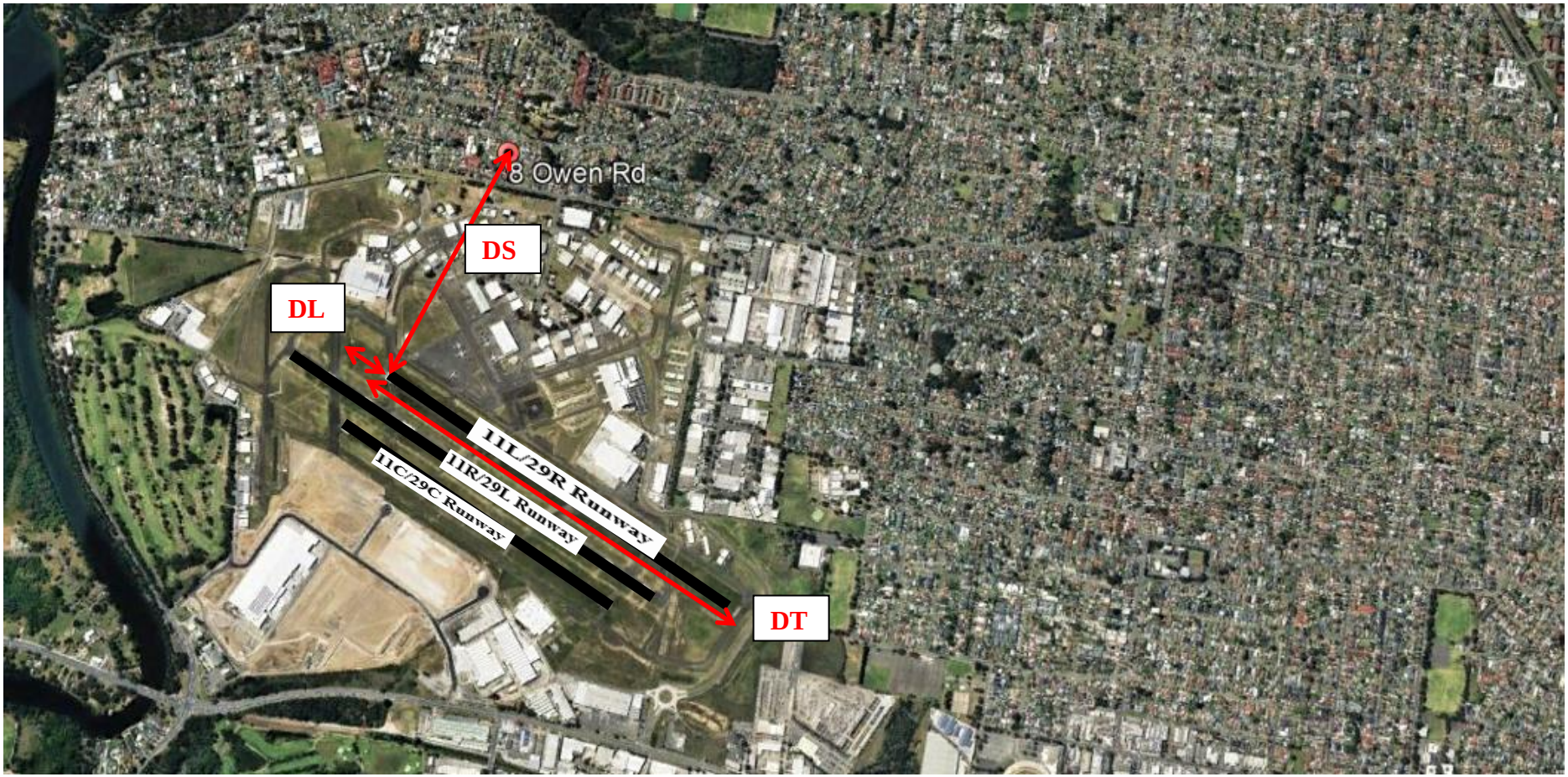

Figure 4 - Critical Runway