

2 October 2025

Our ref: EWC7301

Ausgrid

51-59 Bridge Road,
Hornsby NSW 2077

295 Cormorant Rd, Kooragang | Overhead Clearance Assessment

Edgewater Connections has been engaged to carry out an overhead clearance assessment of the existing HV conductor at 295 Cormorant Rd. The client is proposing to develop new self-storage units under the DA25/6865 inside lot 1 DP1195449.

This letter will provide a high-level assessment for checking NS220 blow-out & structure-related clearances for Ausgrid to review. The overhead model will be produced in Neara & will make use of the existing overhead survey. The architecture drawings shall provide dimensions of the proposed structural changes & information on the existing conductor type shall be obtained using Ausgrid's network GIS & NS100 Annexure C.

The table below summarises the resources used in this assessment:

Resource	Version/Date	Application
190038_1_Powerline Survey	29.08.2025	Existing pole locations, conductor height & sag.
Site plan drawing BC0497	R09	Building footprint area & Roof height
Ausgrid WebGIS	23.09.2025	Obtaining conductor type & pole numbers.
NS220 'Overhead Design Manual'	07.10.2020	Clearance criteria & environmental conditions.
AS/NZS 7000:2016 Overhead Design Manual	2016	As constructed minimum clearances to powerlines.
Ausgrid Letter TRIM: 202112375/677	25.06.2025	High level details on existing private power lines & owner.

Existing Layout & Proposed Development

The development site is adjacent to Cormorant Road & private access road (**figure 1**). Existing Ausgrid 33kV powerlines run along Cormorant Rd & tee-off into the private road.



Figure 1

As shown in **figure 2**, Ausgrid powerlines continue up to JT-105424 & from there-on, the conductor & poles become private 33kV overhead mains owned by Boral Cement as confirmed in Ausgrid's letter '202112375/677'.



Figure 2

The Ausgrid's GIS confirms that the overhead conductor is a 19/3.75 AAC bare. Combining the proposed site plan 'BC0497' & the existing survey '190038', it can be seen that only 2 bays of overhead conductors (formed by poles JT-91692, JT-105424 & the private pole) cause concern for blow-out checks. The remaining bays are either further from the development site or there is no building/wall proposed near it. The proposed site plans also show the height of the building wall facing the private road (near the powerlines) is 6.0m high. **Figure 3 & 4** show site plan view & section view. The existing poles are roughly 4m away from the proposed building wall (property boundary). The survey drawing confirms the existing conductor tensions of 2.3% CBL @ 14°C between JT-91692 & JT-105424, & 3.1% CBL @ 14°C between JT-105424 & private pole.

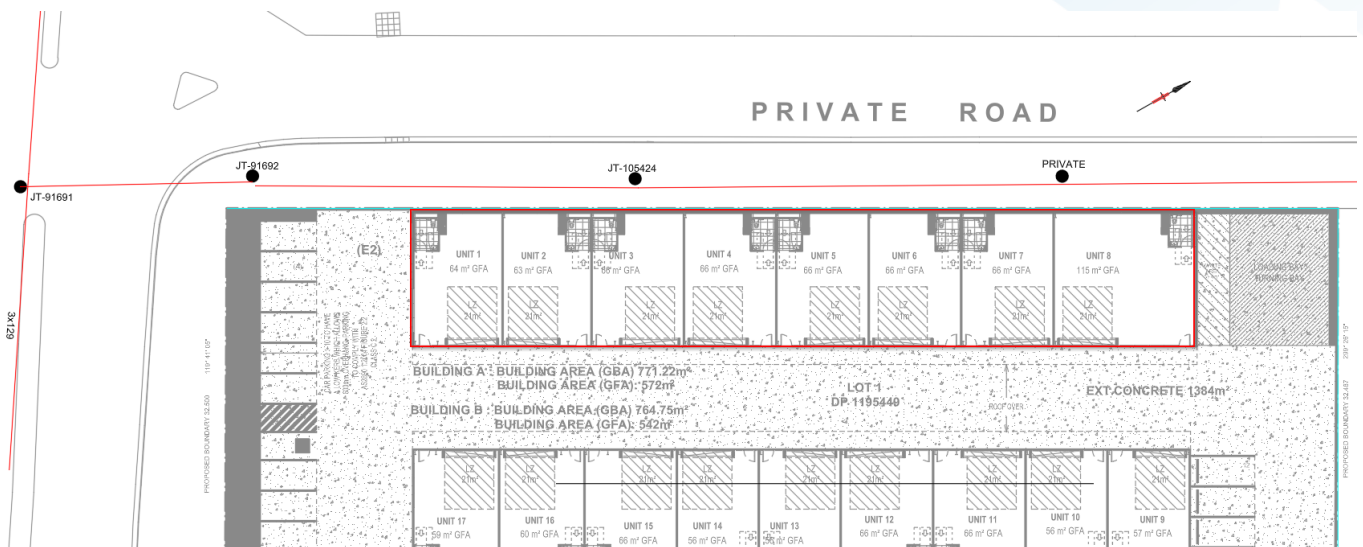


Figure 3

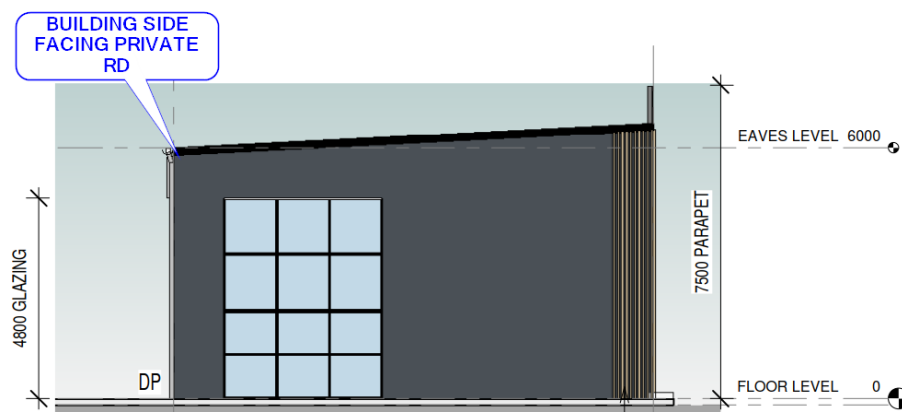


Figure 4

Neara Model & Assessment

Using the information provided in the survey drawing, the existing overhead line & proposed building edge is modelled in Nera (figure 5).

For simplicity, only the single AAC conductor closest to the boundary is modelled & will be used to carry out conductor clearance checks during blowout conditions.

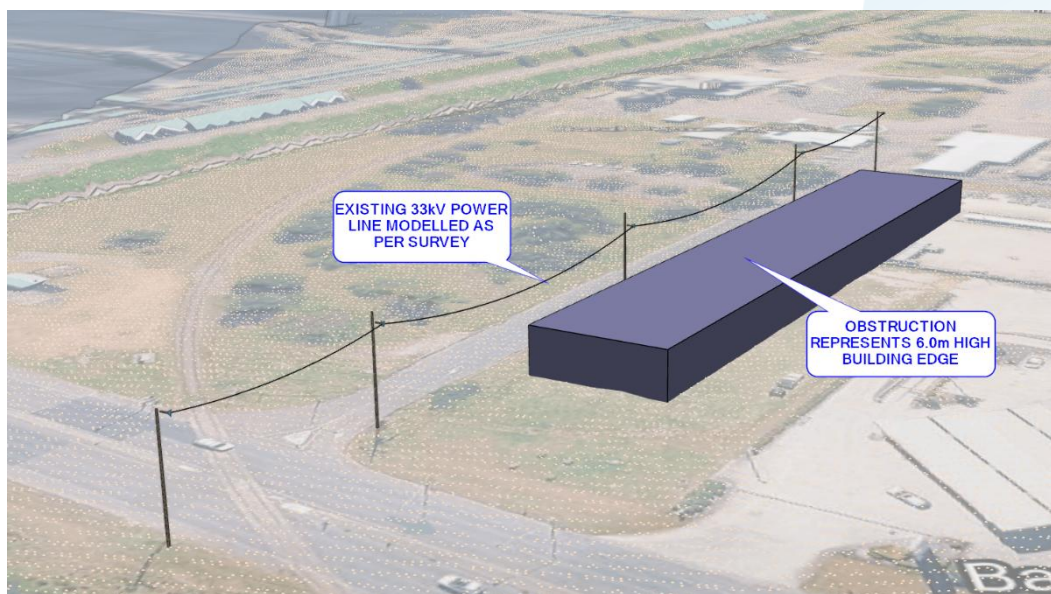


Figure 5

The environmental conditions are set as per NS220 Table 5. For conductor blowout checks, the temperature shall be 40 degrees C. & wind pressure shall be 500Pa.

For the proposed development to go ahead without any alteration to the existing overhead structure, the clearances in NS220 Table 28 (or AS/NZS7000 Table 3.7) shall be met & the conductor blow-out shall not encroach the lot boundary. **Figure 6** shows that the minimum clearance from the building roof to the bare conductor shall be 3.7m.

Table 28 - Minimum clearance from structures, buildings and easement boundaries

DIMENSION	LOCATION	LV			11kV to 33kV			66kV to 132kV
		Insulated (LV ABC)	Bare or covered neutral	Bare or covered active	Insulated with earthed screen	Insulated without earthed screen	Bare or covered	Bare
		m	m	m	m	m	m	m
D	Vertically above those parts of any structure normally accessible to persons	2.7	2.7	3.7	2.7	3.7	4.5	5.0
E	Vertically above those parts of any structure not normally accessible to persons but on which a person can stand	2.0	2.7	2.7	2.7	2.7	3.7	4.5
F	In any direction (other than vertically above) from those parts of any structure normally accessible to persons, or from any part not normally accessible to persons but on which a person can stand	1.0	0.9	1.5	1.5	1.5	2.1	3.0
G	In any direction from those parts of any structure not normally accessible to persons	0.1	0.3	0.6	0.1	0.6	1.5	2.5

Figure 6

Assessment Results

The blowout results from Neara is exported & overlaid with the survey drawing. The results in **figure 7** confirm that the 33kV bare conductor clears the lot boundary by ~0.7m.

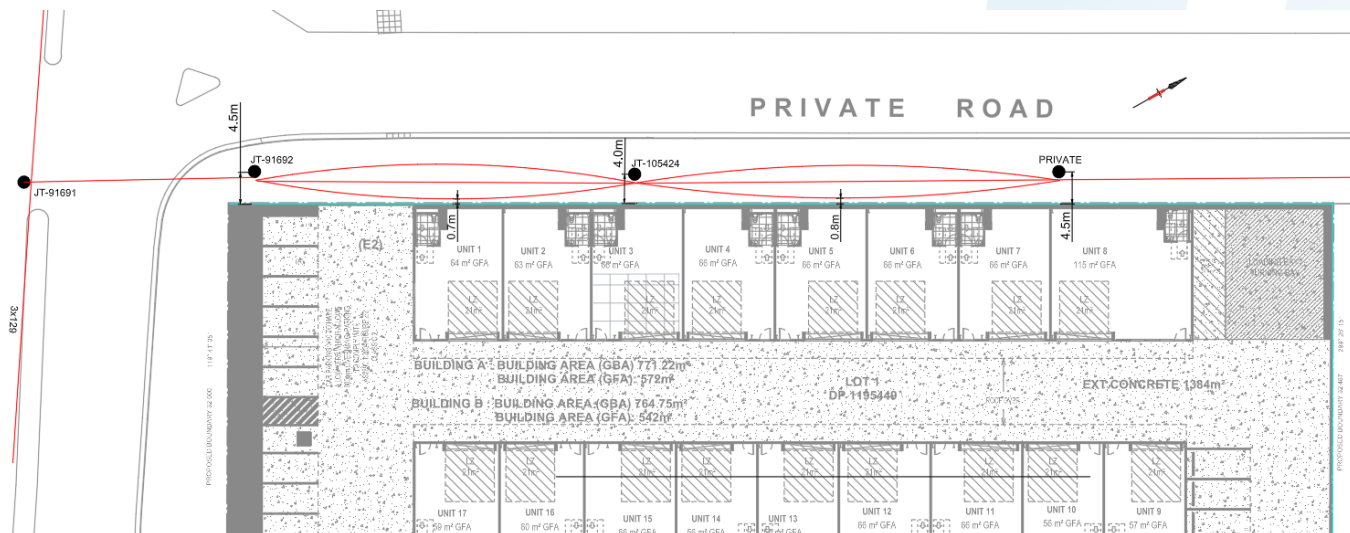


Figure 7

Using the clearance tool in Nera, the minimum distance from the AAC conductor to the structure roof top-edge is 4.02m & 4.27m as shown in **Figures 8 & 9** respectively at the NS220 blow-out condition. This shows that the conductor remains outside the minimum distance of 3.7m.

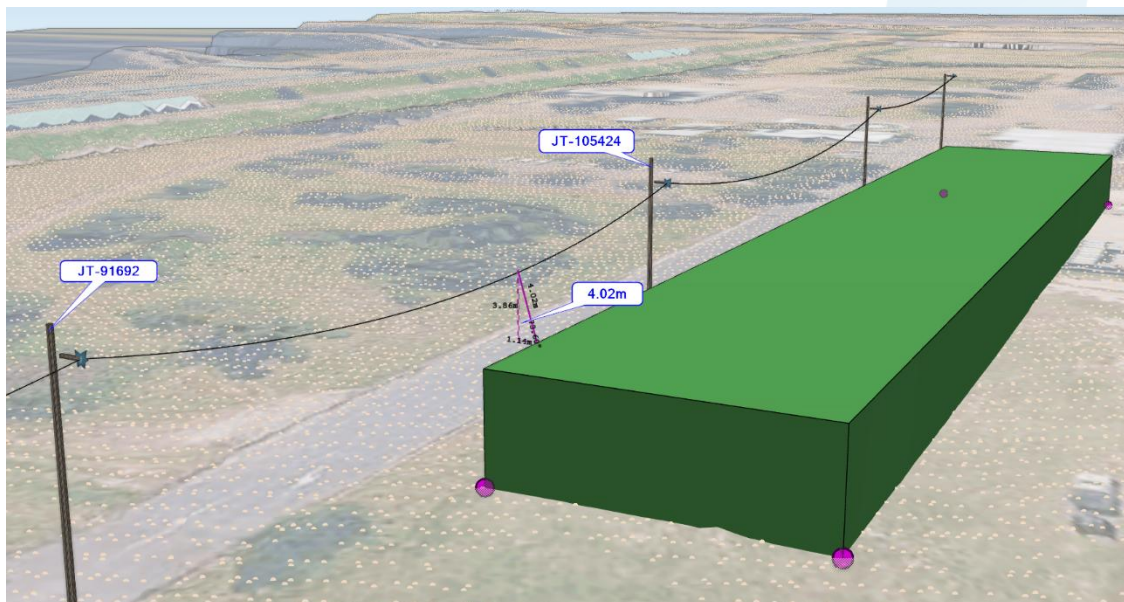


Figure 8

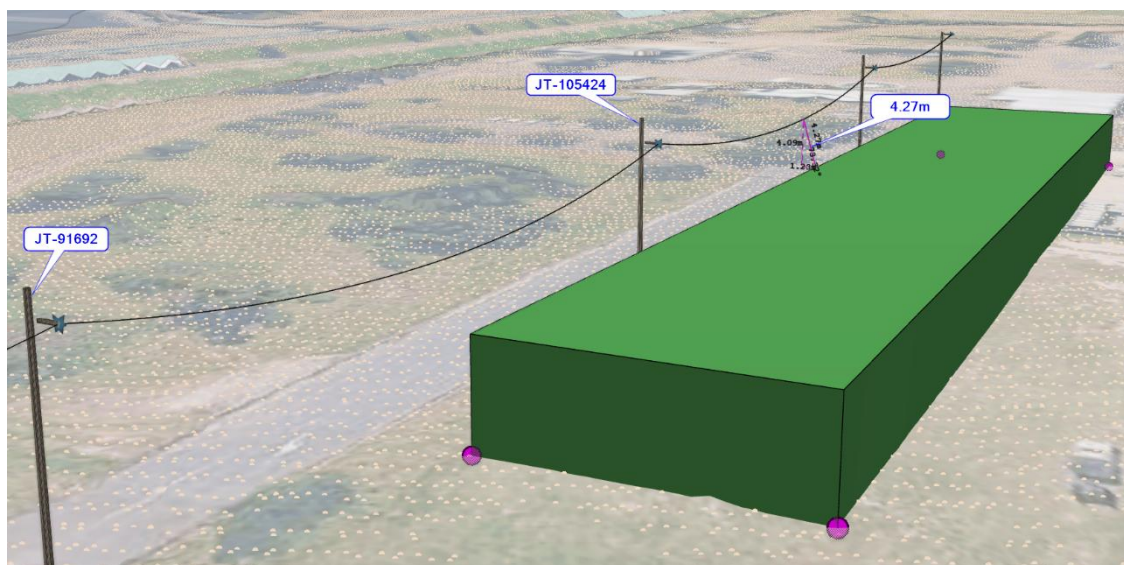


Figure 9

Conclusion

A Neara model was created using the existing survey data, Ausgrid GIS, & the architecture drawings to carry out a blow-out & clearance assessment. The NS220 provided the environmental conditions for checking the clearances & also provided the minimum required clearance that an HV conductor should be from the structure. The blow-out results show that the 33kV conductor is ~0.7m outside the boundary. The conductor remains clear from the minimum required distances from the 6.0m building roof-edge. This means that the proposed development meets relevant clearance requirements as per NS220 & AS/NZS7000.

Haseeb Naveed



Electrical Engineer

Edgewater Connections