

DERIVATIVE OF HEIGHT LIMITATION AT CEVA 2'S LUFFING CRANE OPERATION AT BUKIT JELUTONG

We would like to compute the height limitation of the CEVA 2 premises at Bukit Jelutong by way of extrapolation of the data derived from a drawing previously submitted to the aviation authority approved drawing (UPS) and Google Earth.

The basis will be derived from the 2 diagrams below depicting the **OBSTACLE HEIGHT LIMITATIONS** – issued by Malaysia's Civil Aviation Authority CAAM (previously known as DCA).

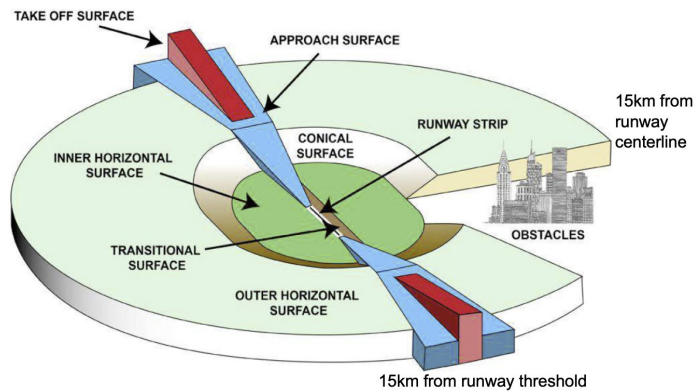


Exhibit 1

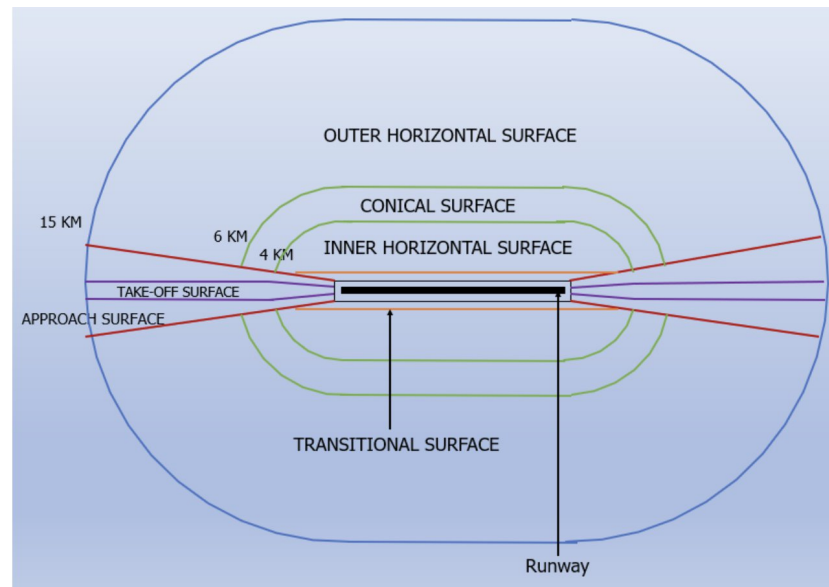


Exhibit 2

The next steps will involve referencing the proximity of UPS premises from RUNWAY 33 (coordinates known as THR 33 obtained from UPS's DCA approved submission) and comparing it with the proximity of CEVA 2 premises using the same data points¹.

¹ Data sourced from Google Earth is known **NOT TO BE 100% ACCURATE**, hence calculations here are all by way of estimations.

From Google Earth we have sourced the respective distances of both premises as below :

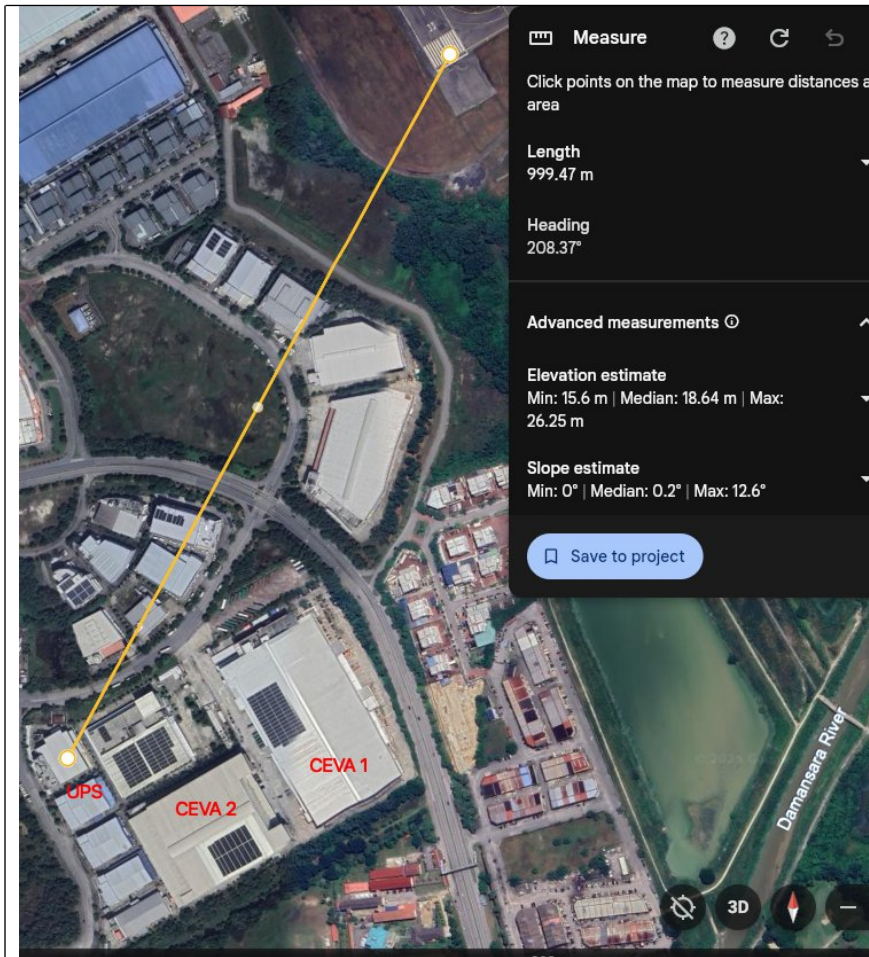


Exhibit 3

UPS Distance from RUNWAY 33 : Est 999.47m

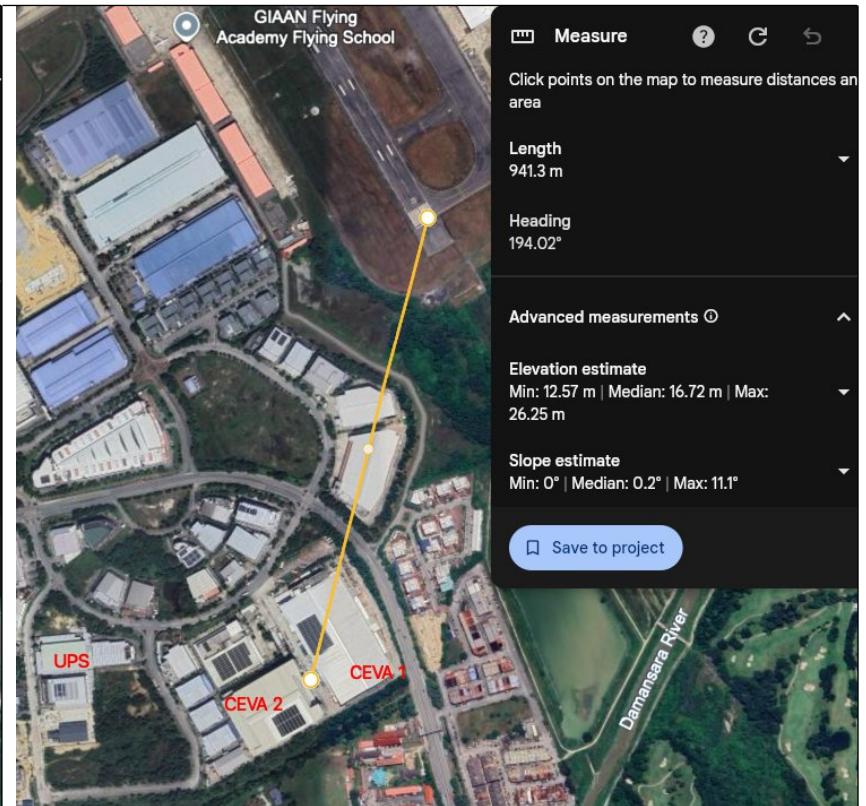


Exhibit 4

CEVA 2 Distance from RUNWAY 33² : Est. 941.3m

² Estimated parking location of mobile luffing crane

Both premises has distances of approximately 1km from the reference coordinates of RUNWAY 33 and from Exhibits 1 & 2 we can conclude that the two premises are **located within the INNER HORIZONTAL SURFACE** (specified as 4km from the perimeter of the whole runway). We can further conclude that both premises **does not encroach into the take-off and approach surfaces** based on 15° / % angle limit of transitional surface indicated in Exhibit 5 below (extracted) from the submitted drawing and comparing with Exhibits 3 & 4.

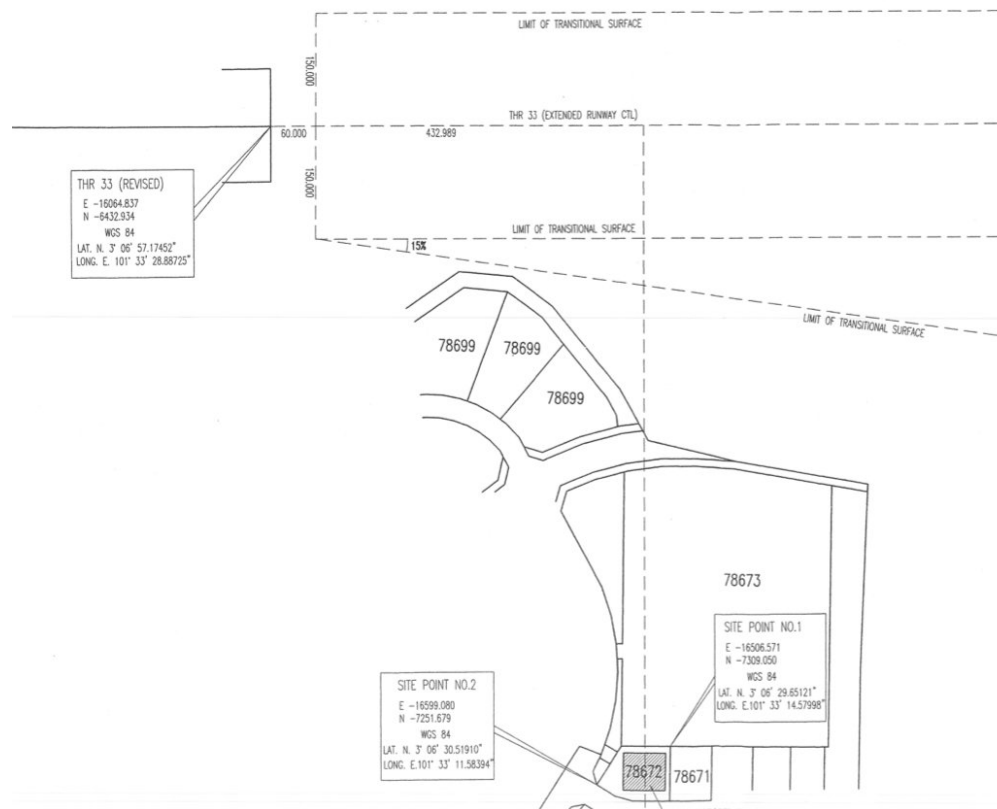


Exhibit 5

FOR THE SAKE OF FURTHER ACCURACY :

We compute that the difference in the approximated distance between the two properties as :

$$999.47\text{m} - 941.3\text{m} = \mathbf{58.17\text{m}}$$

By using the distance of the building line indicated in the submitted drawing (Exhibit 6 below), we can then calculate the distance of the luffing crane parked location at CEVA 2 to the reference point in RUNWAY 33 as :

$$834.118 - 58.17\text{m} = \mathbf{775.95\text{m}}$$

From the above we can deduce that the crane's location still falls within the INNER HORIZONTAL SURFACE (distance range between 527.713m to 900m as indicated in Exhibit 6) with a height **LIMIT OF TRANSITIONAL SURFACE OF 80.66m** (imposed height limit). The crane's position is superimposed in Exhibit 6 for easier understanding.



Exhibit 6

Assuming the crane's parking spot has the same elevation estimate of Original Ground Level in Exhibit 6, the expected height limit of the crane (derived from Exhibit 7 below) during pick-up (height of 115m) will exceed the abovementioned imposed height limit and max lowered boom operation (78m) has only 2.66m clearance from the imposed height limit.

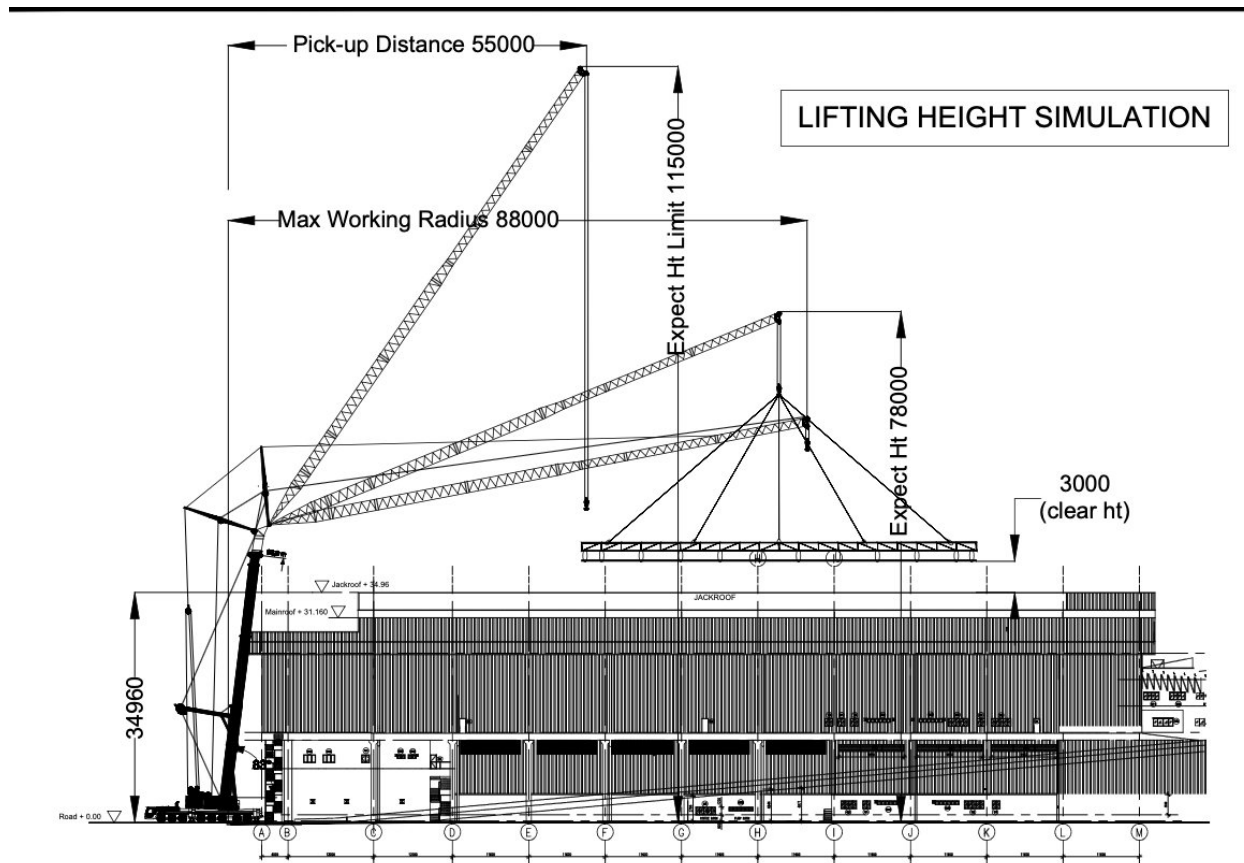


Exhibit 7

CONCLUSION :

It is **NOT RECOMMENDED** to have the luffing crane in operation as it poses a danger to the in and out flights and is extremely risky due to the height of the boom during the pick-up operation. Even though its location is not directly in the take-off and approach surface zones, the crane operation **WILL STILL VIOLATE** CAAM's requirements and will very unlikely to be approved even with a formal submission for approval.