

AERONAUTICAL ASSESSMENT REPORT

RE PROPOSED
LARGE-SCALE RESIDENTIAL DEVELOPMENT
AT
BELGARD SQUARE EAST, BELGARD ROAD
AND OLD BLESSINGTON ROAD,
TALLAGHT, DUBLIN 24

BY
MIDSAL HOMES LIMITED

AUGUST 2025



O ' D W Y E R & J O N E S D E S I G N P A R T N E R S H I P
A V I A T I O N P L A N N I N G & A R C H I T E C T U R E C O N S U L T A N T S
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WWW.AVIATIONPLANNING.IE

E.: ADMIN@AVIATIONPLANNING.IE / DESIGNPARTNERS@IOL.IE

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Note: In all maps /diagrams /aerial photos in this report which do not contain a North Point, north lies to the top.

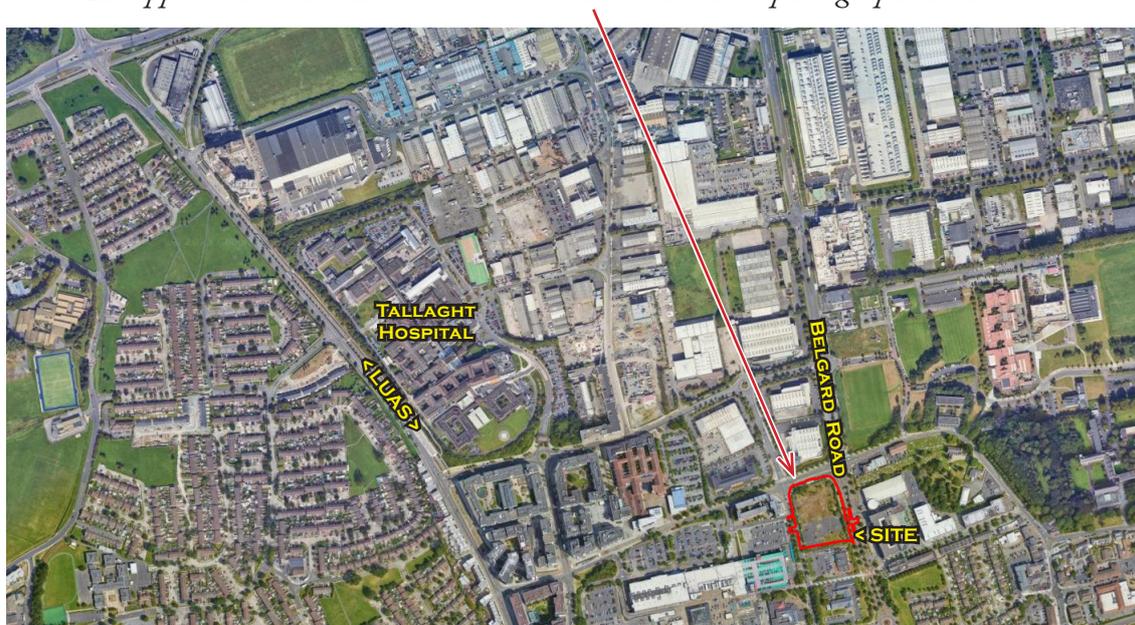
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1. Scope of Report, Description of the Site, and Site Zoning

1.1 Scope of this Report:

This report assesses the aviation impact of a proposed Large-scale Residential Development on a site beside Belgard Road in Tallaght, Dublin 24.

The application site is shown outlined in red in the aerial photograph below.



1.2 Description of the Site:

The proposed development is on a site of 1.19 ha. approx. in Tallaght, surrounded by Belgard Road, Blessington Road, and Belgard Square East. Ground levels on the site vary from 96.2–98.4m OD (with ground floor FFLs at 96.4–97.85m OD).

The proposed buildings are at **5.23 km** from Casement’s Runway 28 threshold, at **4.97 km** from Casement Aerodrome’s Runway 22 threshold, and at **522m** from the centre of the helipad at Tallaght Hospital (*bottom right below*).



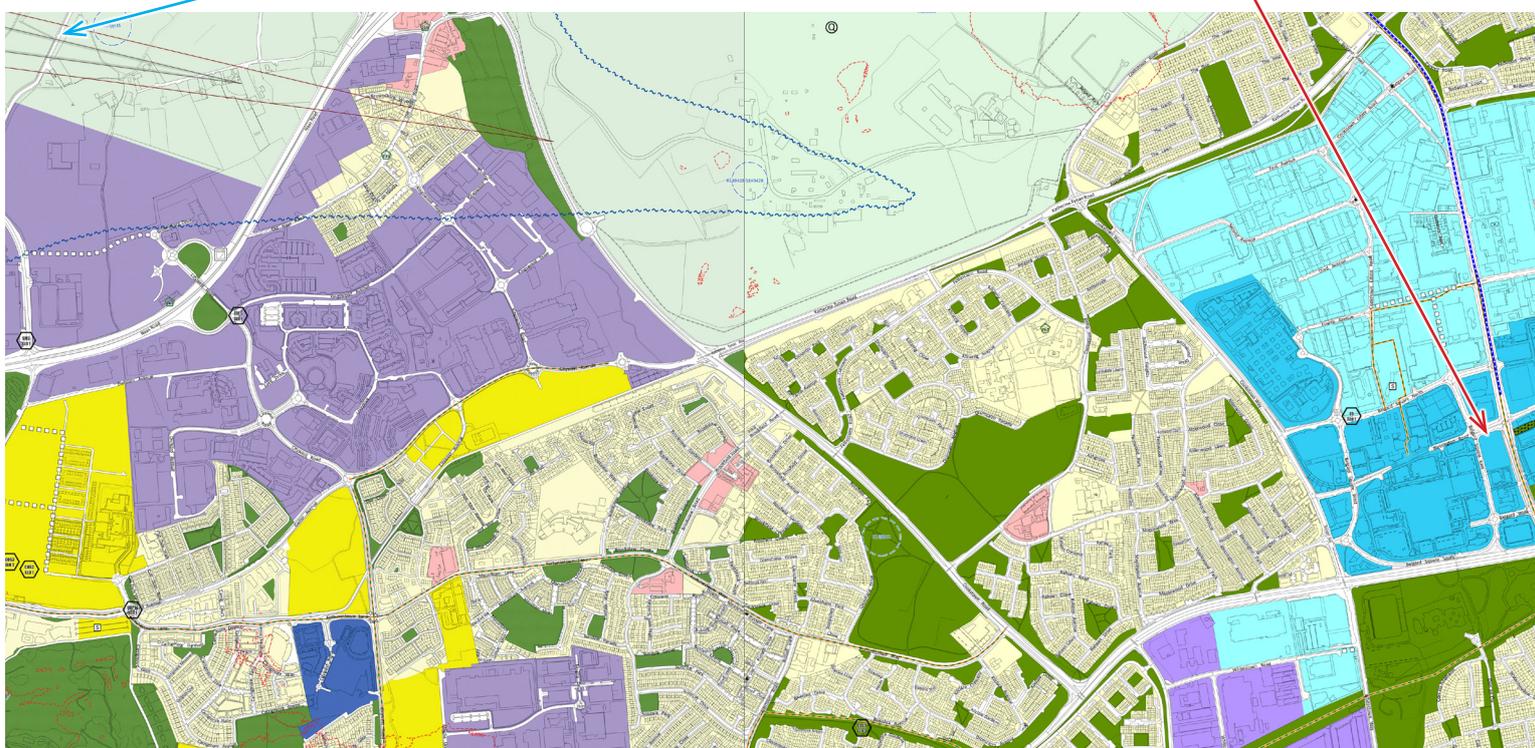
1.3 Site Zoning:

In the SDCC Development Plan 2022-28, the Belgard Road site (coloured a mid-blue on the Development Plan maps below) is zoned ‘Objective TC: To protect, improve and provide for the future development of Town Centres.’

Extracts from two of the South Dublin Development Plan Maps 2022-2028 are shown below. On the right side, the site is indicated by the red arrow on an extract from SDCC **Map 9**; and on the left side the boundary of Casement Aerodrome appears (at top left) on an extract from SDCC **Map 8**.

CASEMENT'S BOUNDARY

BELGARD ROAD SITE



1.4 Recent Aviation Developments:

Recent aviation developments, including –

- the re-designation in 2019 of Casement’s Runways (now named 10/28 & 04/22, in lieu of 11/29 & 05/23) – due to changes in magnetic variation, and
 - changes made by ICAO to its “Annex 14” dimensions etc. in 2018, and
 - new extended Public Safety Zones at Casement Aerodrome,
- are all taken into account in the new 2022-28 Development Plan.

Aviation items affecting the South Dublin area are indicated on the 2022-28 Development Plan Index Map, (an extract of which – including this Belgard Road site – is shown in Section 3 on page 6).

2. Relevant Paragraphs in the S.D.C.C. Development Plan 2022-28

2.1 Of particular relevance to the aeronautical assessment of the Belgard Road site are the paragraphs reproduced below from the current South Dublin County Council Development Plan 2022-2028, which include —

2.2 Section 11.8, re ‘Airports and Aerodromes’ in general, on page 417 of the Plan:

11.8 Airports and Aerodromes

This section sets out the general restrictions and requirements on development within the County for Dublin Airport, Casement Aerodrome and Weston Airport. The safeguarding requirements in the vicinity of civil aerodromes located in South Dublin (Dublin Airport and Weston Airport) are set out in:

- a. International Standards and Recommended Practices’ within *Annex 14* to the *Convention on International Civil Aviation*, which is published by the International Civil Aviation Organisation (ICAO) and the Irish Aviation Authority Guidance Material on Aerodrome Annex 14 Surfaces (2015);
- b. Certification Specifications & Guidance Material for Aerodromes Design published in 2017 by the European Aviation Safety Agency (EASA).

Safeguarding is dealt with in more detail in Chapter 12: *Implementation and Monitoring*.

Casement Aerodrome is a fully equipped military base and includes the main centre for Air Corps Operations. Its operations and requirements are dealt with by the Department of Defence.

2.3 Paragraphs 11.8.1 & 11.8.2, re ‘Casement Aerodrome,’ on page 418 of the Plan:

Casement Aerodrome, being a military aerodrome, does not come under the control of the Irish Aviation Authority but the ICAO Standards and Recommended Practices are applied as policy by the Department of Defence. Additionally, the Department of Defence applies a ‘Security Zone’ closely aligned with the areas around the runways known as flight strips.

11.8.2 Casement Aerodrome

Casement Aerodrome is in continuous aviation use and is the only fully equipped military airbase in the State serving as the main centre of Air Corps operations. The aerodrome has two runways:

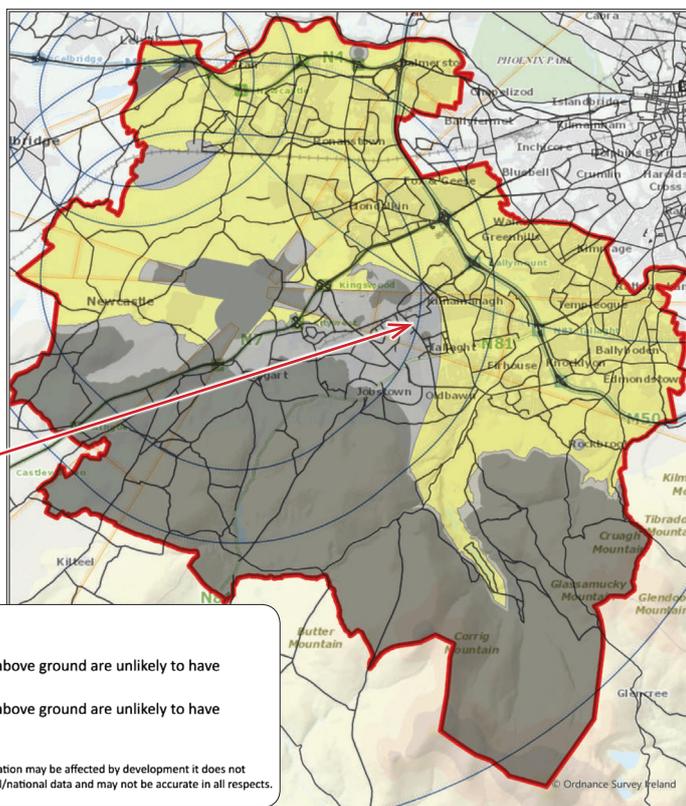
- 1 Runway 10 / 28: The existing main runway with east to west orientation (north of Newcastle and over Kingswood);
- 2 Runway 04 / 22: Existing secondary runway with a south-west to north-east orientation (04 over Rathcoole and 22 over Corkagh Park).

2.4 Policy (and Objectives) IE9 re Casement Aerodrome on pp. 418-9 of the Plan:

| |
|--|
| <p>Policy IE9: Casement Aerodrome</p> <p>Safeguard, having regard to the requirements of the Department of Defence, the current and future operational, safety and technical requirements of Casement Aerodrome and facilitate its ongoing development for military and ancillary uses.</p> |
| <p>IE9 Objective 1:</p> <p>To ensure the safety of military and other air traffic, present and future, to and from Casement Aerodrome with full regard for the safety of persons on the ground as well as the necessity for causing the least possible inconvenience to local communities.</p> |
| <p>IE9 Objective 2:</p> <p>To maintain the airspace around Casement aerodrome free from obstacles to facilitate aircraft operations to be conducted safely, as identified in the Development Plan Index map and Map 12 and as outlined in Chapter 12: <i>Implementation and Monitoring</i>.</p> |
| <p>IE9 Objective 3:</p> <p>To implement the principles of shielding in assessing proposed development in the vicinity of Aerodromes, having regard to Section 3.23 of the Irish Aviation Authority <i>Guidance Material on Aerodrome Annex 14 Surfaces</i> (2015) (See Chapter 12: <i>Implementation and Monitoring</i>).</p> |
| <p>IE9 Objective 4:</p> <p>To prohibit and restrict development in the environs of Casement aerodrome, where it may cause a safety hazard. (See also Policy IE13 Public Safety Zones and Chapter 12: <i>Implementation and Monitoring</i>).</p> |

2.5 **Figure 12.1 (on page 525 of the 2022-28 Plan, within Section 12.11.5 concerning ‘Aviation, Airports and Aerodromes’) contains aviation-related building height guidelines:**

The Belgard Road site is located in the paler grey area shown on this map > (in which objects of 15-30m in height would require aviation assessment).



Locations of Aviation Significance for Any Development
 Locations in which Developments of up to 15m in height above ground are unlikely to have significance in relation to Aviation
 Locations in which Developments of up to 30m in height above ground are unlikely to have significance in relation to Aviation
 Note:
 This map is provided as additional guidance to assist in identifying where aviation may be affected by development it does not replace the detailed guidance given. Heights information is based on regional/national data and may not be accurate in all respects.

2.6 The Aviation Surfaces described in section 12.11.6 on page 530 of the Plan:

The “Obstacle Limitation Surfaces” at and around Casement Aerodrome (and the other airports affecting South Dublin) are outlined within Section 12.11.6 of the 2022-28 Development Plan. Extract paragraphs from this Section are shown below (and the various elevations-OD of the “Surfaces” mentioned are indicated in the Development Plan’s Index Map, and in its Map 12 “Aviation Safeguarding”).

The main ICAO (and EASA) ‘surfaces’ which may affect heights of development in South Dublin are:

- (i) **Two inclined imaginary surfaces leading to / from the ends of all Runways**, above which development should not extend (both broadly wedge-shaped in plan (colours correspond to Figure 12.2):
- (a) ‘Approach Surfaces’ ■ ; and
 - (b) ‘Take-off Climb Surfaces’ ■ ;
- these two Surfaces rise at various gradients – at 2% (to 3.33%) at Casement, and at 3.3% and 4% at Weston – as defined in ICAO’s “Annex 14 – Aerodrome Design...” (and as outlined below), and they extend for up to 15km.

Additionally, within the Take-off area, an object extending higher than a 1.2% gradient – even if it does not project above the Take-off Climb Surface – is subject to aeronautical analysis and may require to be identified on Aerodrome Charts (per ICAO’s “Annex 4 – Aeronautical Charts”).

and

- (ii) **Two (or three) further imaginary race-track-shaped “obstacle limitation surfaces” surround each airport**, to provide protection for the manoeuvring and circling of aircraft:

- (a) a flat ‘Inner Horizontal Surface’ ■ set at 45m above the airport’s datum elevation;
- (b) an inclined ‘Conical Surface’ ■ which rises from the edge of the Inner Horizontal Surface at 5% gradient; and
- (c) for Casement and Dublin Airport (but not for Weston) – a large circular flat ‘Outer Horizontal Surface’ ■ commencing at the outer (upper) rim of the Conical Surface and extending at 145m above the airport’s datum elevation to 15km from the aerodrome reference point.

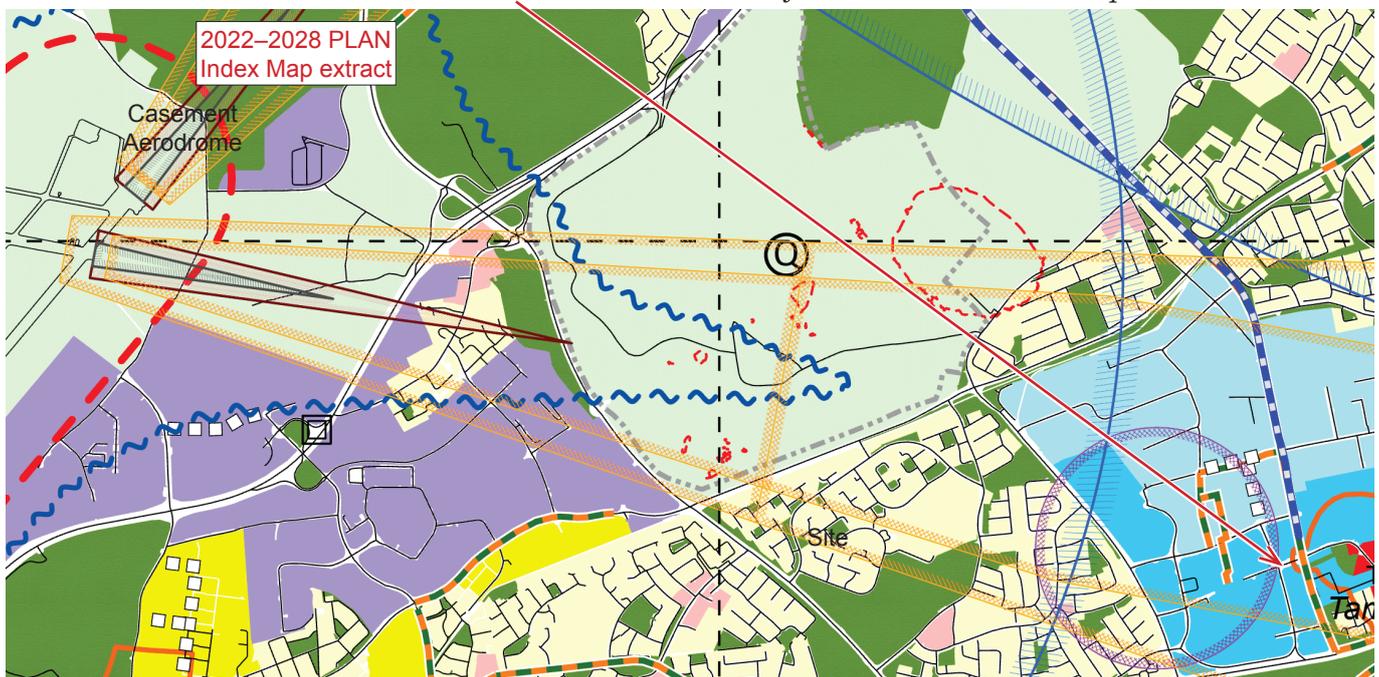
Of the Surfaces listed above, the Approach and Take-off Climb Surfaces are the more important.

2.7 The several aviation “Surfaces” which lie above the Belgard Road site are listed in Section 3, and an assessment of them is provided in Sections 5, 6, 7, & 8 following.

3. Obstacle Limitation Surfaces that Affect the Belgard Road Site

3.1 The Department of Defence has adopted the International Civil Aviation Organization's [ICAO's] "Obstacle Limitation Surfaces" in relation to Casement Aerodrome. Being a military aerodrome, Casement is not bound by these *civil* aviation standards, but the Department of Defence has opted to apply these Standards at Casement to protect aircraft in flight. These "Surfaces" – similar to the E.A.S.A. Specifications which now apply at Dublin and other Irish airports – are set out by ICAO as *International Standards and Recommended Practices* in its *Annex 14 – 'Aerodromes'* document, [eighth revised edition of 8th November 2018].

The site's location is arrowed on the extract below from the SDCC Index Map 2022–28:



3.2 The Site in relation to Aviation & Aeronautical Items in its Vicinity:

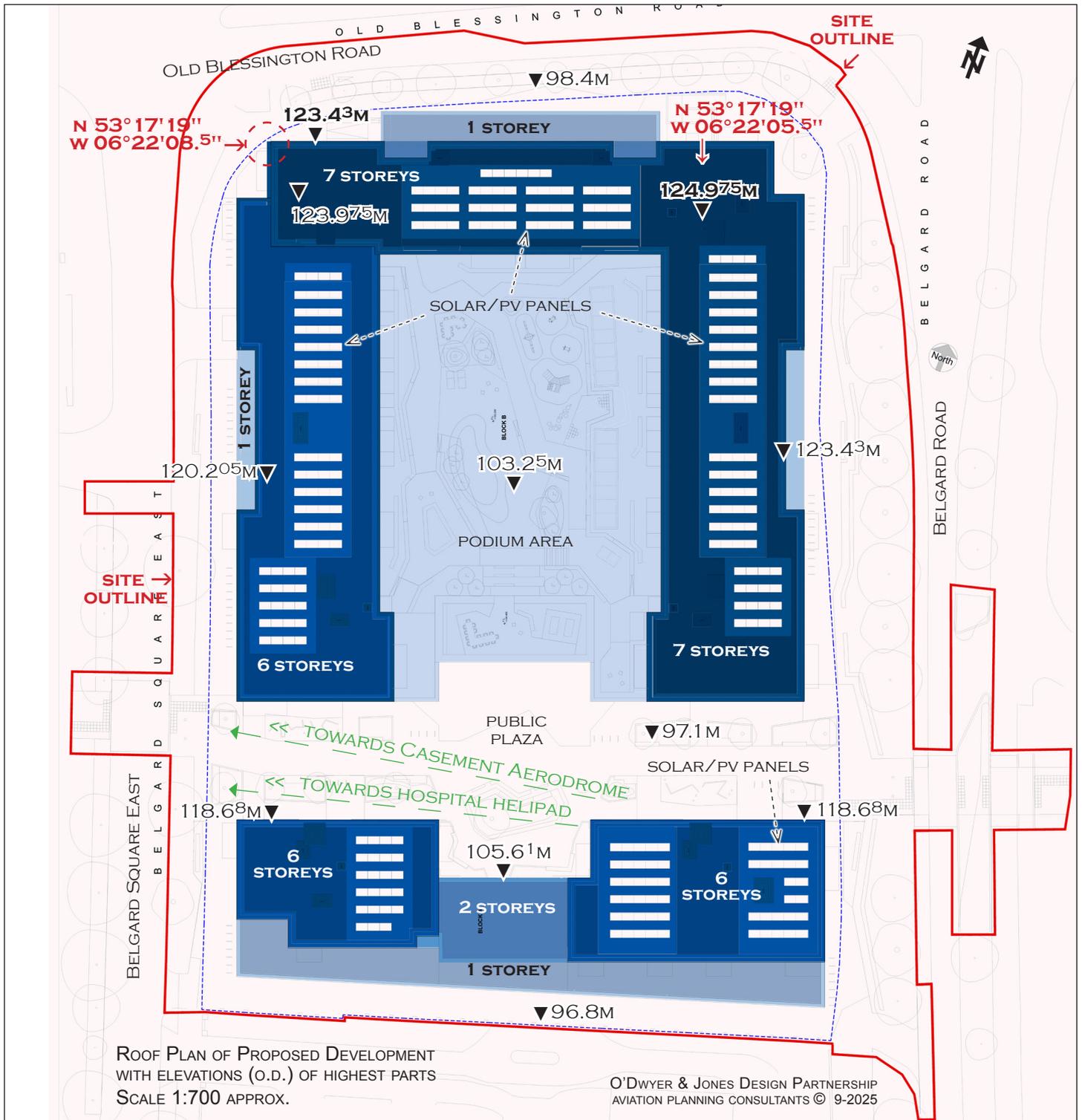
It can be seen (*from the map extract above*) that the site lies outside Casement's Noise Zone (*blue hatch*) and all of Casement's new Public Safety Zones (*in brown*), and outside Dublin Airport's Outer Horizontal Surface (*solid blue line towards top right*).

The site is however under the **Approach & Take-off-climb Surfaces** (*in orange*) **to/from Casement's Runway 10/28**, and, being at 4.97 km from THR 22, also lies under Casement Aerodrome's "**Conical Surface**" which commences at 4km from all its runways. It is close to the circle (*in purple above*) around **Tallaght Hospital helipad**. (*These items are assessed in Sections 5, 6, 7, 8, 9 & 10 following*).

With ground levels on the site at up to 98.4m OD, the site is almost 12m higher than Casement Aerodrome's datum level (which is at 86.6m OD), and it is at ~4-6m lower than Tallaght Hospital's helipad (which is at 102.8m OD).

4. Layout, Elevations-OD, & Coordinates of the Proposed Development

4.1 Below, to approx. scale 1:700, is a Roof Plan of the development of 199 residential units plus 2123m² of additional retail and other usages, in two blocks of up to 6 and 7 storeys above basement level. Elevations-OD of highest elements are shown. In this diagram, darker blue shading indicates higher roof areas.



4.2 Coordinates – Proposed Development:

Relevant corners of the proposed development are circled on the previous page.

These are —

the **nearest rooftop corner** to Casement Aerodrome and to Tallaght Hospital helipad, at **123.43m** OD elevation, with coordinates: **53° 17' 19" N, 006° 22' 08.5" W**; & the edge (nearest to Casement Aerodrome and to Tallaght Hospital helipad) of the **highest element** of the development (top of telecommunications equipment) at **124.98m** OD elevation, with coordinates: **53° 17' 19" N, 006° 22' 05.5" W**;

4.3 Coordinates – Casement & Helipad:

The two relevant Casement coordinates are:

(i) the centre of the threshold of Runway 22 at **53° 18' 12.63" N, 006° 26' 22.02" W**

– the reference point for setting out the Conical Surface above the wider Cookstown area; *and*

(ii) the displaced threshold of Runway 28 at **53° 18' 05.85" N, 006° 26' 40.68" W**

– used for precise calculation of the Approach Surface to Runway 28 (commencing at 60m east of that location), and of the Take-off Climb Surface from Runway 10 (at 240m east of that location).

| AIP IRELAND | | |
|-------------------|-----------|-----------------------------------|
| AERODROME CHART N | | |
| ICAO W | | |
| RWY | DIRECTION | THR |
| 04 | 044° | N 53°17'36.90" W 006°27'13.73" |
| 10 | 105° | N 53°18'16.88" W 006°28'07.75" |
| 22 | 224° | N 53°18'12.63" W 006°26'22.02" |
| 28 | 285° | N 53°18'05.85" W 006°26'40.68" |

Tallaght Hospital helipad (102.8m OD) is centred at **53° 17' 22.2" N, 006° 22' 36.4" W**

4.4 Distances Between Coordinates:

Runway 22 Threshold to nearest rooftop corner = **4,970m**

Runway 22 Threshold to highest building element = **5,010m**

Runway 28 Threshold to nearest rooftop corner = **5,230m**

Runway 28 Threshold to highest building element = **5,275m**

Hospital helipad to nearest rooftop corner = **522m**

Hospital helipad to highest building element = **575m**

4.5 Distances Along the Extended Centreline of Rwy 10/28:

For Approach and Take-off Climb Surface calculations, the distances along extended runway centreline (rather than the direct distances from site to threshold) are relevant.

Thus, for the nearest building corner of the site, at **5,230m direct distance**, lying **350m** south of the extended centreline of Runways 10/28, its distance as measured along that runway centreline is **5,218m***.

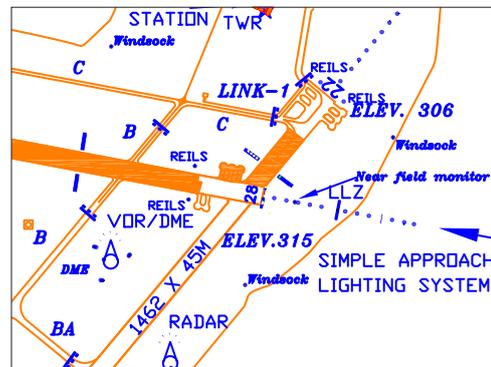
* Calculation: $(5230)^2 \text{ minus } (350)^2 = (5218)^2$

Similarly, the corner of the highest building element – at **5,275m direct distance** and at **360m** south of the runway centreline – lies at **5,263m** along the centreline.

5. Calculations with regard to the Approach Surface to Runway 28

5.1 Relevant Data:

The relevant runway threshold (28) is stated on the current Aerodrome Chart [*>*] to be at 315ft AMSL elevation, i.e. at **96m OD**, which is also the elevation of the Inner Edge of the Approach Surface commencing at **60m** from that runway threshold.



By deducting 60m from the 5,218m listed in paragraph 4.5 (*on the previous page*) it is established that the nearest building corner lies at **5,158m** from the inner edge of the Approach Surface to Casement's Runway 28 (as measured along the centre of that Surface – i.e. along the extended centreline of Runway 28).

A similar calculation [$5,263 - 60 = 5,203$] shows that the near corner of the building development's highest element (at 141.05m OD) lies at **5,203m** from the inner edge of the Approach Surface.

- 5.2 The ground levels (and FFLs) on the site are at ~97m OD, i.e. at ~1m higher than the Threshold of Casement's Runway 28.
- 5.3 The slopes of the **Approach Surface to Runway 28** (as indicated in the Development Plan – and as per ICAO for a Code 4 instrument runway) are 2% for the first 3,000 metres and 2.5% for the next 3,600 metres.

Thus, at the building development's nearest corner (at **5,158m** from the Surface's Inner Edge) the Approach Surface to Rwy28 lies at **210m OD***, and therefore lies 113 metres above the 97m OD ground elevation, and at **86.57m** above the highest roof element at that corner (which is at **123.43m OD**)

* calculated as follows —

$$(3000 \times 2\%) + (2158 \times 2.5\%) + 96m OD = 60 + 54 + 96m = 210m OD$$

- 5.4 Building heights of 6 to 7 storeys are proposed on this site, with the highest item – telecommunications equipment on the highest roof, at **124.98m OD** – being 28m+ high. This highest element is at **5,203m** from the Inner Edge of the Approach Surface to Rwy28, so that at this point the Approach Surface lies at **211.1m OD****, i.e. at **86.12m** above the highest point of the development.

** calculated as follows —

$$(3000 \times 2\%) + (2203 \times 2.5\%) + 96m OD = 60 + 55.1 + 96m = 211.1m OD$$

- 5.5 Thus the proposed development complies fully with the requirements of the S.D.C.C. Development Plan with regard to the Approach Surface to Runway 28.
- 5.6 A Longitudinal Section Diagram (*on page 13*) illustrates the features noted above.

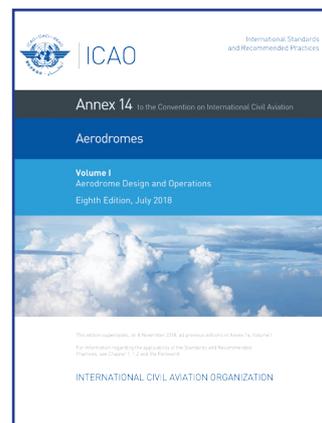
6. Calculations with regard to the Take-off Climb Surface from Runway 10

6.1 The **Take-off Climb Surface** from Runway 10 commences at 240m [180+60m] from the displaced Threshold of Runway 28. This places the Take-off Surface's Inner Edge at **4,978m*** from nearest roof of the development. Rising at 2% (from 96mOD) – as defined by ICAO for this category of runway – the Take-off Climb Surface from Runway 10 therefore rises to **195.6m OD*** in this location, at **72.17m** above the north-west corner (which is at 123.43m OD).

* calculated as follows ($5218 - 240 = 4978m$) :
 $4978 \times 2\% + 96m \text{ OD} = 99.6 + 96m = 195.6m \text{ OD}$

And above the highest element (@ **124.98m OD**, the Take-off Climb Surface from Runway 10 lies at **196.5m OD**** (and therefore at **71.52m** above this point).

** calculated as follows ($5263 - 240 = 5023m$) :
 $5023 \times 2\% + 96m \text{ OD} = 100.5 + 96m = 196.5m \text{ OD}$



6.2 Thus the proposed development (which extends to **124.63m OD**) will not affect the Take-Off Climb Surface from Casement Runway 10 (as defined by I.C.A.O.), which at its nearest lies at **71.52m above the highest roof element**.

6.3 I.C.A.O. also includes a recommendation (in paragraph 4.2.26 of its *Annex 14 – Aerodromes*) that 'If no object reaches the 2% take-off climb surface, new objects should be limited to ... a surface down to a slope of 1.6% ...' We therefore include the following calculation in relation to a possible 1.6% Take-off Climb Surface, and this would lie at **176.4m OD***** i.e. at **51.42m** above the highest element of the development.

*** calculated as follows —
 $5023 \times 1.6\% + 96m \text{ OD} = 80.4 + 96m = 176.4m \text{ OD}$

6.4 In addition, I.C.A.O. includes a provision (in paragraph 3.8.1.1 of its *Annex 4 – Aeronautical Charts*: see para.8.2) that any obstacle projecting above a 1.2% slope in the take-off flight path area be considered a significant obstacle, and be shown on Aeronautical Charts. We therefore include an additional calculation in relation to a 1.2% slope, which lies at **156.3m OD****** above the highest element (at 124.98m OD), i.e. at **31.32m above** the highest point of the proposed development.

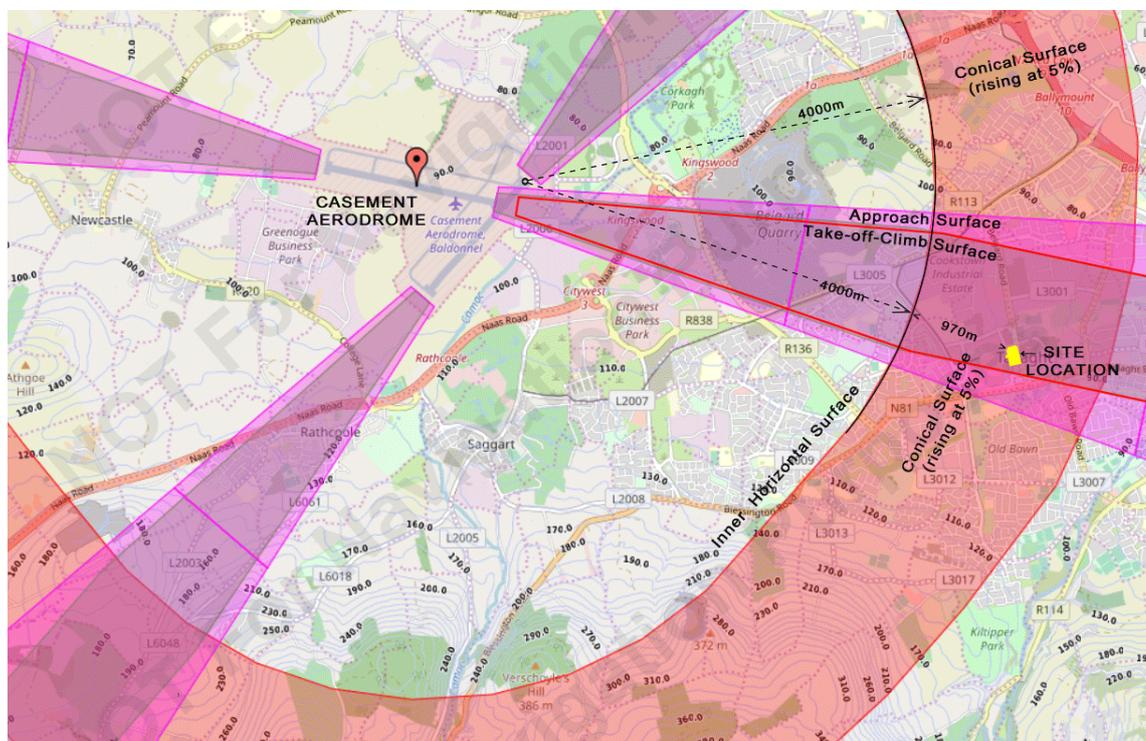
**** calculated as follows —
 $5023 \times 1.2\% + 96m \text{ OD} = 60.3 + 96m = 156.3m \text{ OD}$

6.5 Thus the proposed development will not affect –
 (i) Casement's Take-off Climb Surface from Runway 10 (at 2% slope), or
 (ii) a lower Take-off Climb Surface (at 1.6% slope); and
 (iii) it does not constitute an 'obstacle' in respect of the 1.2% slope.

7. Calculations with regard to the Conical Surface at Casement Aerodrome

7.1 As noted in Section 3 above, the **Conical Surface** at Casement Aerodrome commences from the outer edge of the aerodrome's Inner Horizontal Surface [which lies at 131.6 metres OD, being 45m above the Department of Defence's chosen datum of 86.6m]. From this 131.6m OD elevation at its inner edge, the Conical Surface at Casement rises at a gradient of 5% for a distance of 2 km horizontally, reaching an elevation of 145m above the aerodrome's datum at its outer rim (i.e. rising to an elevation of 231.6m OD).

The drawing below (with Conical Surface shown coral-coloured, and Approach & Take-off Climb Surfaces in purple & grey) is taken from the published I.A.A. 'Asset' data: onto it we have added the site in yellow, and notes + dimensions in black. —



[In this 'Asset' diagram above, which pre-dates ICAO's 2018 amendments to 'Annex 14', Approach Surfaces are shown commencing at 300m rather than at current 280m widths; this 10m reduction to both sides of the Approach Surface does not however affect this site. In addition, the Inner Edge of the Take-off Climb Surface from Runway 10 was shown as coinciding with the Inner Edge of the Approach Surface to Runway 28 (rather than at 180m separation, due to recent displacement of 28 Threshold) – we have amended the location of this Take-off Climb Surface from Runway 10 in an added red outline included above.]

7.2 It can be seen that this site lies under the Conical Surface of Casement Aerodrome (as well as being under – but not projecting above – the Approach and Take-off Climb Surfaces to/from Runways 10/28). The Conical Surface (although less important at an aerodrome than the more critical Approach and Take-off Climb Surfaces) is, in this location, the lowest of the three Obstacle Limitation Surfaces which affect this site.

- 7.3 The setting-out locations for Casement's Inner Horizontal and Conical Surfaces are the centrelines of the relevant runways, and for the Cookstown area the reference point is the centre of Threshold 22 – about which a 4km arc is described (to N-E of the R136 road, extending from Grange Castle Road to Cheeverstown Road approximately). —See diagram on previous page. The coordinates and distances from the site of this Threshold 22 reference point are given in paragraphs 4.2 – 4.4 above.
- 7.4 As noted in paragraph 4.4 [on page 7 above], the corner of this development's roof nearest to Casement Aerodrome lies at 4,970m from the reference point at the centre of Threshold 22, i.e. it lies at 970m from the inner (lower) edge of the aerodrome's Conical Surface. This means that the Conical Surface in this location (where the building height is **123.43m OD**) lies at **180.1 metres OD***, i.e. at **56.67m** above this corner, *calculated as follows:*

$$* 131.6 + (970 \times 5\%) = 131.6 + 48.5 = 180.1m OD$$
- 7.5 And as also noted in paragraph 4.4 (on page 8 above), the highest element of this development lies at 5,010m from the reference point at the centre of Threshold 22, i.e. it lies at 1,010m from the inner (lower) edge of the aerodrome's Conical Surface. This means that the Conical Surface in this location (where the building height is **124.98m OD**) lies at **182.1 metres OD****, i.e. at **57.12m** above the highest building element, *calculated as follows:*

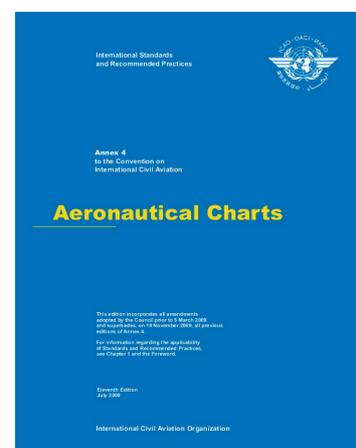
$$** 131.6 + (1010 \times 5\%) = 131.6 + 50.5 = 182.1m OD$$
- 7.6 Thus all parts of the proposed development (with its various high points extending from 123.43m OD to a maximum of 124.98m OD) are significantly lower than the Conical Surface above the site. At its nearest, the Conical Surface lies at **56.67m** above the north-west corner of the proposed development.

8. Summary re Casement Aerodrome's Obstacle Limitation Surfaces

- 8.1 Calculations (in Sections 5, 6, & 7 above) in relation to the development's nearest corner, and to its highest element, show that all parts of the proposed development on this site are significantly lower than any of Casement Aerodrome's three Obstacle Limitation Surfaces which lie above the site.

This is illustrated in the Longitudinal Section Diagram on the following page 13, on which all three Obstacle Limitation Surfaces are shown.

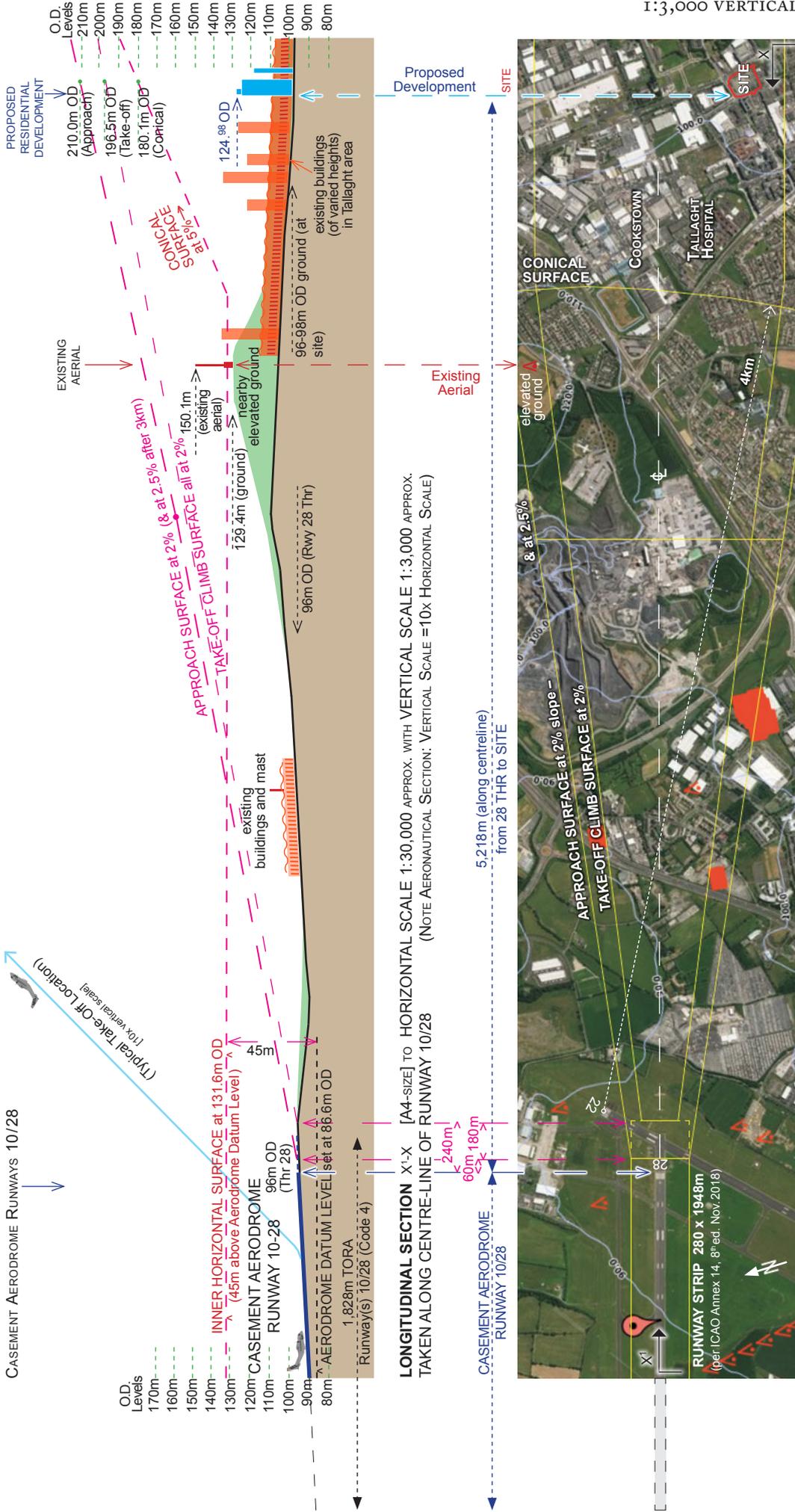
- 8.2 As noted in para. 6.4 above, the proposed development also lies at **31.32m** below a 1.2% slope extended from the inner edge of the take-off flight path from Casement's Runway 10, and therefore does not require to be shown on aerodrome charts (per paragraph 3.8.1.1 of I.C.A.O.'s Annex 4 – 'Aeronautical Charts' >>).



9. Longitudinal Section Diagram

[A4-SIZE] 1:30,000 HORIZONTAL SCALE

1:3,000 VERTICAL SCALE



O'DWYER & JONES DESIGN PARTNERSHIP
AVIATION PLANNING CONSULTANTS © 9-2025

AERIAL PHOTO MAP
WITH 10M CONTOURS AND OBSTACLES AS MARKED ON IAA 'ASSET' DATA

10. Tallaght Hospital Helipad

- 10.1 The helipad at Tallaght Hospital is centred at 522m to the west of the nearest corner of the roof of this development. Being a private helipad, it has no established obstacle limitation surfaces.



The corner of the development nearest to the helipad (of 7 storeys) rises in height to 123.43m OD at **522m** from the helipad (with this nearest roof corner **20.63m** higher than the helipad); and the highest point of the development rises to 124.98m OD (above the 7-storey section) i.e. to **22.18m** higher than the helipad surface [at 102.8m OD] at a distance of **~575m** from the helipad's centre.

These dimensions indicate that all parts of the development will lie below a 1 in 25 (4%) slope rising from the edge of the helipad – i.e. **well below the necessary 1 in 8 slope** which is described in paragraphs 10.4-10.5 on the following page (and also below a 1 in 22.2 [4.5%] slope applicable to lowest-performing helicopters).

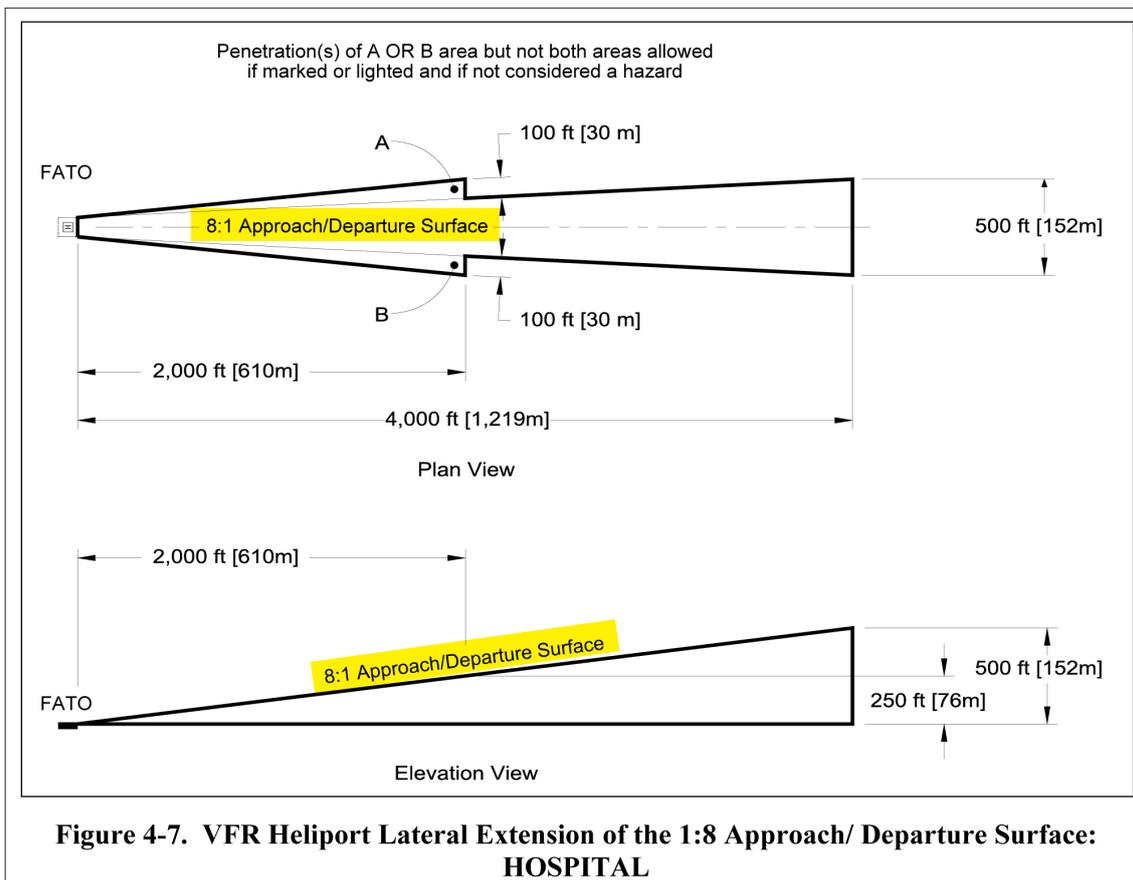
- 10.2 The prevailing wind in the area is from west-south-west (*indicated by the dashed white arrow on the aerial photo above*), with 41% of wind recorded at Dublin Airport since 2000 in sectors west, w-s-w, and s-w. Helicopter arrivals and departures into wind in this typical direction would be well clear of the site.

- 10.3 It is worth noting that this helipad currently faces existing 9- & 10-storey buildings [*>>*] immediately to its south at the other side of the Belgard Square North roadway. These buildings between the site and the helipad are at substantially closer distances (at 55m to the south, and rising **~30m** above the helipad).



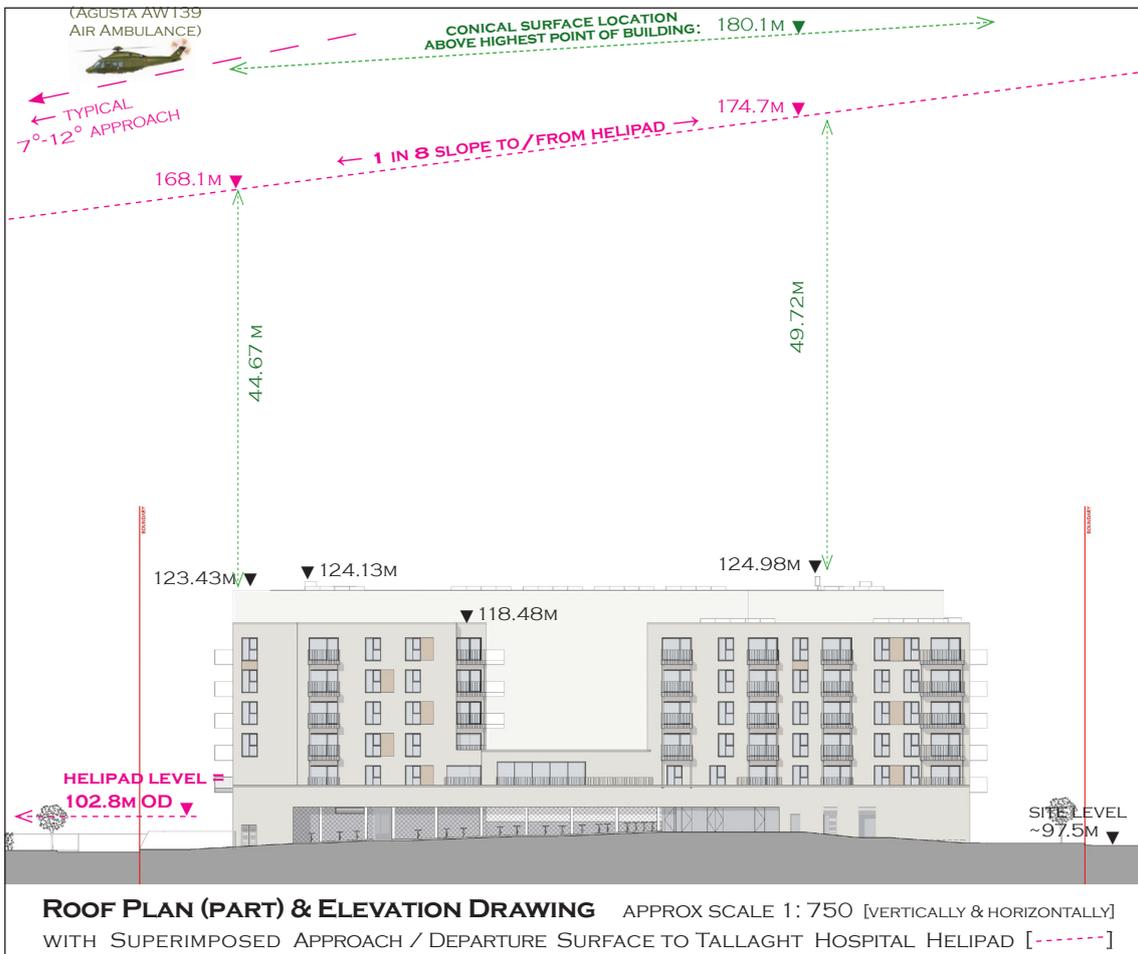
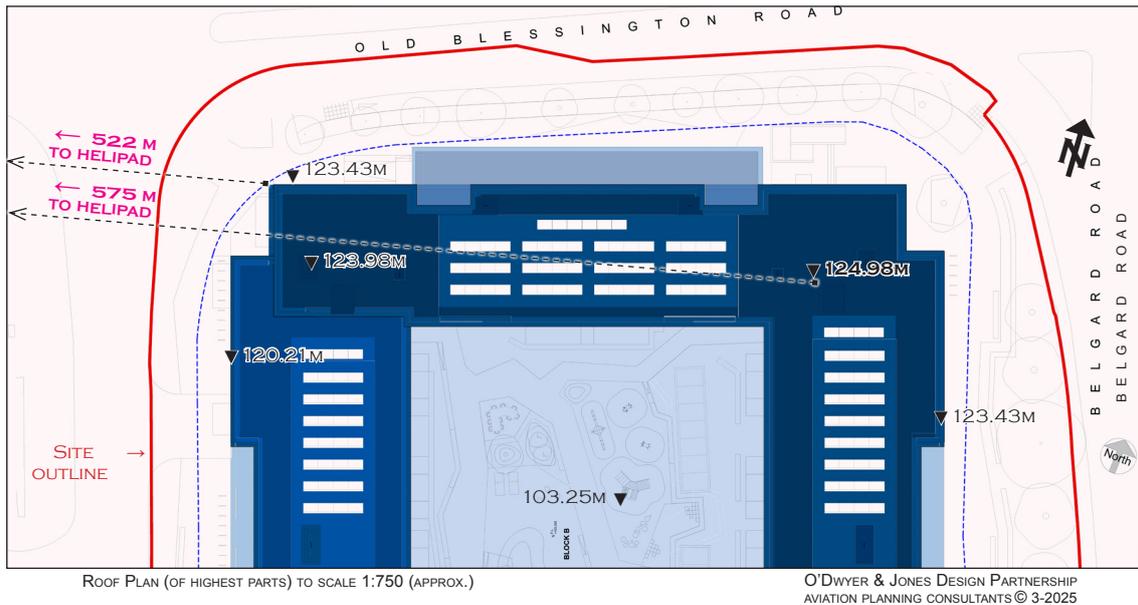
EXISTING 9-10 STOREY BUILDINGS BESIDE TALLAGHT HOSPITAL ENTRANCE & HELIPAD

- 10.4 While this is a private helipad without established Approach or Departure Surfaces (and is not a heliport), it is noted that FAA document AC 150/5390-2B – ‘Hospital Heliports’ [extract below] provides for a 1 in 8 slope at hospital heliports. This slope can readily be provided above the proposed building (as illustrated in the diagram on the following page 15).



This 1:8 Slope guideline is also stated in FAA's *Order JO-7400.2G* for heliports; and ICAO (*in its Annex 14 'Vol II: Heliports'*), and EASA (*in its Heliport Specifications of 2019*), set out the same 12.5% (i.e. 1 in 8) slope for Heliport Approach & Take-off Surfaces in 'Slope Design Category C', which is suitable for higher-performing twin-engined helicopters, such as use this hospital helipad. Shallower 8% (1 in 12.5) & 4.5% (1 in 22.2) slopes are also referred to by ICAO and EASA (suitable for lower-performing helicopters) and these could also be provided without difficulty above the proposed development.

- 10.5 The SDCC Development Plan 2022-28 includes a provision that any new development in the vicinity of hospital helipads in the South Dublin area should be clear of a 1 in 8 slope (in any direction from the helipad). As can be seen in the diagram on the following page, the proposed development complies fully with this CDP requirement in regard to hospital helipads.



10.6 The location of a 1 : 8 approach/departure slope above the development is shown above.

At its closest the 1:8 slope lies at **44.67** metres above the LRD's roof. This clearance should be more than sufficient for any cranes on site during construction.

11. Other Aviation Considerations

11.1 External Lighting:

Being at 40m from centreline of Approach and Take-off Climb Surfaces to / from Casement Runway(s) 10/28, and at 522m from Tallaght Hospital helipad, it is recommended that any external lighting should be of the cut-off type (i.e. showing no light above the horizontal).

The building is not in a location, or of a height, which would require the placing of aircraft warning lights on its highest points.

11.2 Solar/PV Panels:

Solar/PV panels are proposed on the roofs of both LRD blocks, laid out in several arrays (as shown on page 7 above). At 5.95km from Casement's "aerodrome reference point" the site lies just outside the new "Balddonnel Solar Safeguarding Zone" (of 5km radius) but it does lie within the new Safeguarding Zone for Tallaght University Hospital's helipad (of 3km radius), so that a Glint & Glare Study is required in relation to this helipad.

Lawler Sustainability have carried out the required **Glint & Glare Study** in relation to Tallaght Hospital helipad, and because of the proximity of the site to flight paths overhead to/from Casement's Runway 10/28, they have also assessed all of Casement Aerodrome flight paths and its control tower, with fully satisfactory results for all receptors (at Casement Aerodrome, and at Tallaght Hospital's helipad). The Conclusions on page 26 of their report (of February 2025) are as follows:

"9. Conclusion:

It was found that there is a very low risk of glare occurring at the 2-mile flight path receptor for runway 04 at Balddonnel Aerodrome. The occurrence of glare is less than 20 min per day and occur during the early hours of the morning during April, August, and September (please see Appendix for more details). However, the other receptors studied within this report are at no risk of receiving glint and/or glare from the proposed PV arrays."

11.3 Bird Strike Hazard Mitigation:

Landscaping of the proposed development does not contain any water features or other bird attractants, and the proposed "green" roofs are of a sedum type that has not been found to cause bird strike hazard at aerodromes.

During construction on site all bird strike hazard mitigation measures (as recommended by the IAA >) will be observed, including control of all food waste, and avoidance of any standing water or exposed earth etc.



11.4 “Outer Horizontal Surface” for Dublin Airport:

The site of the proposed LRD at Belgard Road lies at around 1.1km beyond the Outer Horizontal Surface for Dublin Airport, which is unaffected by the development.

11.5 Use of Cranes During Construction:

It is intended that any cranes used during construction will operate well below all of Casement’s Obstacle Limitation Surfaces, the lowest of which (the Conical Surface) lies **at more than 56m** above the highest element of the development.

In any event, it will be necessary [under S.I. 215 of 2005 – ‘*Irish Aviation Authority (Obstacles to Aircraft in Flight) Order*’] for prior notification of the use of any cranes to be submitted, at least 30 days in advance, to the Irish Aviation Authority, and to Casement Aerodrome [at airspaceandobstacles@defenceforces.ie or 01-4037681], who may need to issue notifications to pilots, and who may require cranes to be fitted with aviation warning lights. Prior notification to the HSE’s Aero-Medical Section [at Phoenix Park] is also advised in respect of the nearby Tallaght Hospital helipad, (e.g. by means of their *Crane Notification Form*).

It is noted that, on the elevated ground beside Cookstown Road (at around 1.4km north-west of this site, and also lying under the Approach Surface to Runway 28 but much closer to that runway) there is an existing reservoir pump-house building, constructed at a ground level of 129.4m OD, which building projects above Casement’s Inner Horizontal Surface, and above which there is an aerial extending to an elevation of 150.1m OD. This existing obstacle may provide a ‘shielding’ to objects of similar height (or less) in the Belgard Road area.



11.6 Navigational Equipment:

There is no aviation navigational equipment which might be affected by the Belgard Road LRD development, as Casement’s ILS equipment is oriented in the opposite direction, and the Building Restricted Area around its DVOR/DME equipment does not extend as far as the Belgard Road site.

12. SUMMARY

12.1 Approach & Take-Off Climb Surfaces:

The Approach Surface to Casement's Runway 28 and the Take-off Climb Surface from its Runway 10 both lie above this site, and the proposed development lies substantially lower than both of these Surfaces, i.e. its highest element (at 124.63m OD) lies at **86.12 metres** below the Approach Surface, and at **71.52 metres** below the Take-off Climb Surface.

The development is also **31.67m** lower than the 1.2% slope above which it would be required for a structure to be notified as a potential obstacle on aeronautical charts.

12.2 Conical Surface:

The Conical Surface, while being a less significant Surface than the Approach or Take-off Climb Surfaces, is the lowest of the three Obstacle Limitation Surfaces for Casement Aerodrome lying above this site. However this Conical Surface (sloping upwards at 5%) lies at **56.67m** above the nearest high point of the proposed development on this site, and is unaffected by it.

12.3 Tallaght Hospital Helipad:

It is not anticipated that the proposed development will interfere with current helicopter operations to/from the hospital helipad. While this helipad is not a 'heliport', Approach and Departure Surfaces in compliance with international 'heliport' standards [and as provided for in the SDCC CDP 2022-28] can easily be designed and provided (with **44.67m** clearance to spare) above the proposed building.

12.4 Overall:

We consider that the proposed large-scale residential development at the Belgard Road site complies with all aviation and aeronautical requirements affecting the location (and all aviation provisions in the current SDCC CDP 2022-28).



J. Declan O'Dwyer B.Arch MBA RIBA

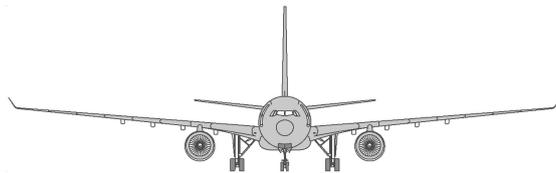
27th August 2025

*O'Dwyer & Jones Design Partnership
Aviation Planning Consultants*

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A V I A T I O N P L A N N I N G & A R C H I T E C T U R E C O N S U L T A N T S
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WWW.AVIATIONPLANNING.IE

E.: ADMIN@AVIATIONPLANNING.IE / DESIGNPARTNERS@IOL.IE



O'DWYER & JONES DESIGN PARTNERSHIP
AVIATION PLANNING & ARCHITECTURE CONSULTANTS
28 LEESON PARK • DUBLIN 6 • TEL.: 353-1-498 1893 [FAX: 353-1-496 4410]

WWW.AVIATIONPLANNING.IE

E.: ADMIN@AVIATIONPLANNING.IE / DESIGNPARTNERS@IOL.IE

J. D. O'DWYER B.ARCH MBA RIBA

S. JONES MA