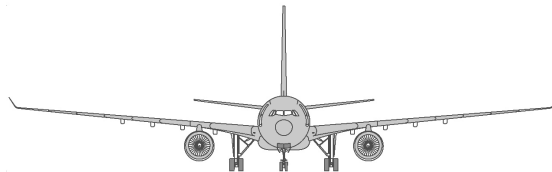


**AERONAUTICAL ASSESSMENT REPORT
RE
CITY PARK DEVELOPMENT
AT
THE FORMER TEDCASTLES SITE
CENTRE PARK ROAD
CORK**

FOR
STRATEGIC HOUSING DEVELOPMENT
PLANNING APPLICATION

BY
TIZNOW PROPERTY COMPANY LIMITED
(COMER GROUP IRELAND)

MARCH 2022



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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. EXECUTIVE SUMMARY

1.1 Purpose of this Report

This Report addresses the aviation impact of a proposed City Park Development of six residential blocks – five of varying heights of up to 10 storeys, and one landmark block of 35 storeys – on the former Tedcastles site beside Centre Park Road in the South Docks area of Cork City.

1.2 Executive Summary

This Aeronautical Assessment confirms that the proposed City Park Development will comply with all aviation and aeronautical requirements affecting the site.

1.3 This Report includes —

- (a) an assessment of the various ICAO Obstacle Limitation Surfaces which affect the site, with calculations as to how the proposed City Park Development will lie in relation to these Surfaces;
- (b) an assessment of the development in relation to the upcoming new helipad at Cork University Hospital, and its proposed approach and departure routes;
- (c) assessments of the site in relation to other aviation issues, including —
Cork Airport's Public Safety Zones, Noise Contours, and Building Restricted Areas (relating to its navigational equipment);
Flight Paths in the vicinity of the site, and likely requirements in relation to aviation warning lights and cranes during construction, etc.

1.4 An overall view of the north-facing elevations of the proposed City Park Development (as viewed from across the River Lee) is shown below:



2. Description and Zoning of the Site

2.1 Site Description:

The site (of area 4.86 hectares, *outlined in red on the aerial photo below*) is in the South Docks area of Cork City, between Centre Park Road and the River Lee.



2.2 Zoning:

In Maps 1 & 2 of the Cork City Development Plan 2015-2021, the site's zoning includes Mixed Use Development (*mustard colour*), Neighbourhood Centre (*mauve*), and Public Open Space (*green*); and in its Map 6 proposed bridges are shown, and stars indicate proposed tall building locations. The illustration below (*on which the site is outlined in yellow*) includes combined extracts from these Plan Maps 1, 2 & 6.



3. Relevant Cork City Development Plan Paragraphs

3.1 Aviation in the Cork City Development Plan 2015-2021

The 2015-2021 Plan contains the following paragraphs 5.48 (*page 67*) and 12.70-12.72 (*page 181*) in regard to Cork Airport and aviation generally, with Objective 12.24 concerning Cork Airport's Public Safety Zones.

Airport

5.48 Cork International Airport, located a few kilometres south of the city (in the County Council's administrative area), serves an important role for both business and the tourism industry, providing access to Britain and other destinations in Europe in particular. The *County Development Plan* prioritises the delivery of a high quality public transport connecting the Airport to the City Centre; the City Council is supportive of this objective. Public Safety Zones related to the airport that may affect development proposals in the city are accounted for in Chapter 12.

Cork City Development Plan 2015-2021

67

Cork Airport Safety Zones

Cork Airport and Public Safety Zones

- 12.70 The then Departments of Transport and Environment, Heritage and Local Government commissioned a report to investigate Public Safety Zones (PSZs) at Cork, Shannon and Dublin Airports, in order to safeguard the public on the ground. The report was issued some years ago, but guidelines for its implementation have yet to be prepared by the Minister for the Environment, Community and Local Government.
- 12.71 A two-zone protection system was proposed, namely, an Inner and an Outer Public Safety Zone for each runway, each zone running parallel to and extending beyond the respective runway. The Inner Zones are located closest to the runways and have a greater risk of accident, whereas there is less risk within the Outer Zones. In general, no development will be permitted in the Inner Zone. However, development will be permitted within the Outer Zone, subject to restrictions. For example, high density housing and facilities attracting large numbers of people will not be permitted, but existing developments can remain, as it is not a retrospective policy.
- 12.72 The City Council area is not directly impacted by the 'Inner' Zone, however the proposed northern 'Outer' Public Safety Zone traverses parts of Wilton and Bishopstown (See map in Volume 2 of the Plan). The City Council will have regard to the Outer Public Safety Zone that traverses the western / south-western suburbs of the City in assessing new development proposals.

Objective 12.24 Public Safety Zones

To promote appropriate land use patterns in the vicinity of the flight path over the City serving the Airport, having regard to the precautionary principle, based on existing and anticipated environmental and safety impacts of aircraft movements. To implement future policies to be determined by the Government in relation to Public Safety Zones for Cork Airport.

- 3.2 The 2015-21 Cork Plan referred only to Public Safety Zones from Cork Airport, (which extend over the city in the Wilton & Bishopstown areas etc.). It did not refer to other aviation aspects, such as building height restrictions arising from Cork Airport's 'Obstacle Limitation Surfaces', or Aviation Noise considerations. However, since 2019, Cork Airport (previously in the County Cork area) is now contained within an enlarged Cork City area, and these other aviation aspects are referred to in the upcoming Draft Cork City Development Plan 2022-28.

3.3 Revised Cork City Area and Draft Cork City Development Plan 2022-2028

Under the Local Government Act 2019, the administrative area of Cork City was greatly extended, so that it now includes Cork Airport. Additional provisions in regard to Cork Airport are now included in Cork City’s Draft Development Plan 2022-28.

Chapter 10 of the 2022-28 Cork City Draft Plan “Key Growth Areas & Neighbourhood Development Sites” includes development proposals for the South Docks area, and extensive proposals for Cork Airport (including a runway extension).

Map 10.32 (below, with some added notes), which shows ‘Obstacle Limitation Surfaces’, Public Safety Zones, and Noise Contours for Cork Airport, appears on page 382 [on which the location of the former Tedcastles site is indicated by an arrow & added red dot]:

Public Safety Zones

10.197

Cork Airport has two Public Safety Zones (inner and outer) which are recognised in this plan and are identified on the following map.

10.198

Planning applications in the vicinity of these zones will be referred to the Irish Aviation Authority (IAA) by Cork City Council’s Development Management Section to seek their observations as part of the

statutory planning process under Section 28 of the Planning and Development Regulations, 2001. Cork City Council will adhere to the advice of the Irish Aviation Authority regarding the effects of proposed development on the safety of aircraft and the safe and efficient navigation thereof.

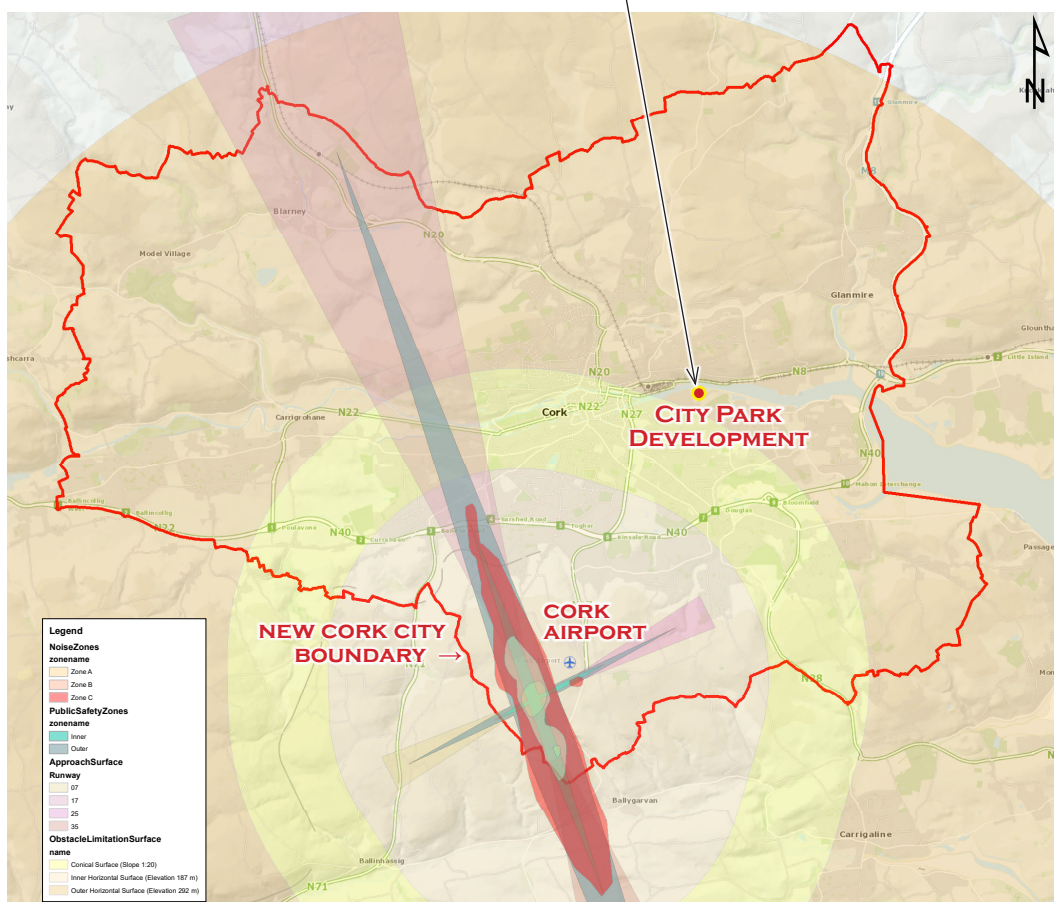


Figure 10.32: Cork International Airport Safety Zones.

3.4 The Site Within the Draft Cork City Development Plan 2022-28

Tall buildings are of relevance to aviation, and paragraph 10.75 on page 324 of the Cork Draft Plan 2022-28 [>] states that City Docks area is identified as a location suitable for a Tall Building development. Figure 10.4 on p.324 (*below*) shows that an appropriate Tall Building location is identified on the former Tedcastles site where the new tall 'Block A' is proposed.

Tall Buildings

10.75

The City Docks has been identified in the Cork City Urban Density, Building Height and Tall Building Study as an appropriate location for tall buildings because it is suited to higher urban density and building height, and has limited sensitivity to height at a strategic level. Figure 10.4 illustrates the area considered suitable for tall buildings (refer to Chapter 11 Placemaking and Managing Development).



Figure 10.4: City Docks Zones Appropriate for Tall Buildings.

- 3.5 We are conscious that the current Cork City Development Plan 2015-2021 is the relevant Development Plan in relation to this current SHD project (and submission), and we confirm that the proposed development complies fully with all aviation provisions contained in the current Cork City CDP.

We also refer above (in paragraphs 3.2, 3.3 & 3.4) to the future Draft Cork City Development Plan 2022-2028 because it contains additional aviation considerations (following the recent inclusion of Cork Airport within the new extended Cork City boundary). We can confirm also that the proposed development complies in full with all aviation provisions contained in the upcoming Draft Cork City CDP 2022-2028.

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

4.1 Below, to approx. scale 1:2000, is a Site Layout Plan of the proposed development of 823 apartments (plus ancillary facilities) within six blocks at the South Docks site in Cork, with elevations OD of its roof areas and highest elements, and coordinates of the tallest building [Block A, of up to 35 storeys over lower ground floor level].

In this diagram, darker blue shading indicates higher roof elements.



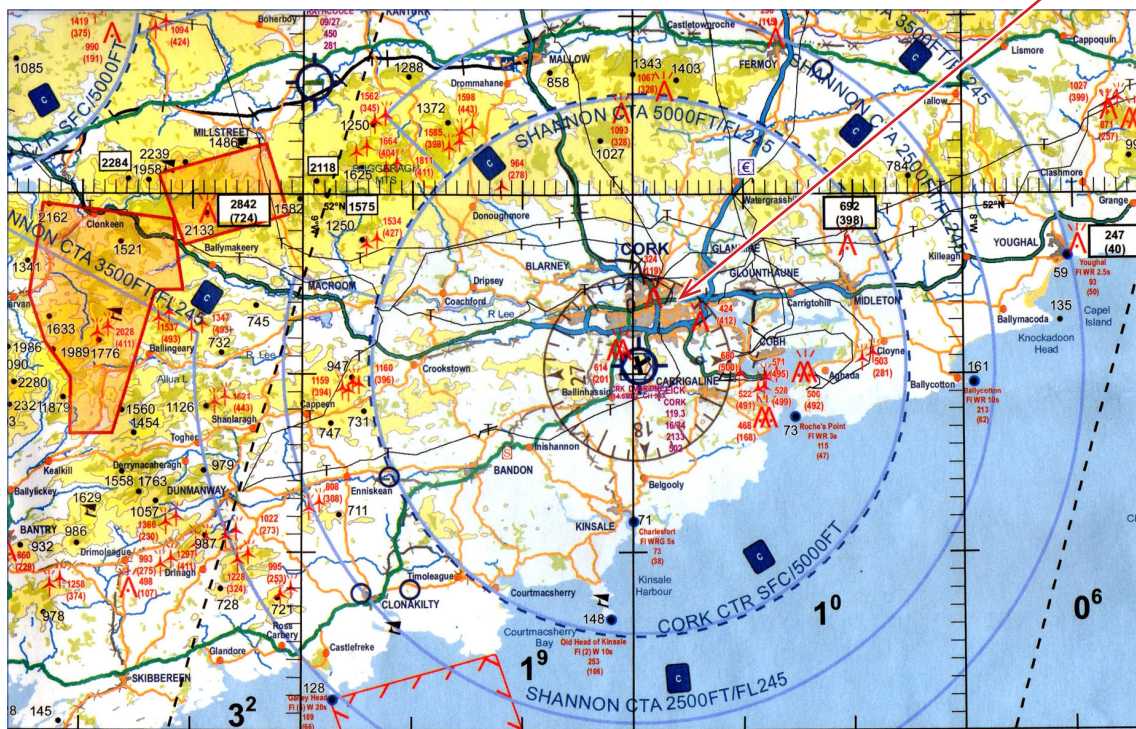
SITE & ROOF PLAN OF PROPOSED DEVELOPMENT
SCALE 1:2,000 APPROX.

5. Aeronautical Considerations in Relation to the Site

5.1 Subsequent to the adoption of the current Cork City Development Plan in 2015, there have been some significant developments affecting aviation at Cork —

- (i) In **April 2016**, the designations of Cork Airport's main runway **changed from 17/35 to 16/34**, due to a magnetic shift affecting compass bearings. *[It is noted that the legend of Cork Airport map on page 382 of the current Cork City Draft Development Plan (also on p.5 of this report) still refers to the older designations, although other references to Cork's runways in the Draft's text have been updated].*
- (ii) In **December 2017**, the Standards relating to eight international and regional airports in Ireland (including **Cork Airport**) came **under E.A.S.A. control** [European Aviation Safety Agency], rather than I.C.A.O. control [International Civil Aviation Organization] as previously applied, with several changes to airport design specifications (including narrower Approach Surfaces and Runway Strips).
- (iii) In **November 2018**, **I.C.A.O. issued revised 'Annex 14' Standards** bringing these in line with the new E.A.S.A. Aerodrome Specifications.
- (iv) In **August 2019**, planning permission was granted for a **new helipad at Cork University Hospital**, with proposed east-west Approach & Departure Surfaces.

5.2 Below is an extract from the current IAA Aeronautical Chart of Ireland, showing (in the blue circle) the Cork Airport Air Traffic Control area which extends from ground level ['SFC'] to 5,000ft amsl. The location of the South Docks site is indicated by an arrow, just north of a nearby 412ft-high telecommunications mast at Mahon [marked **A** on this chart] which extends to 424ft amsl [129m OD]. **SITE**



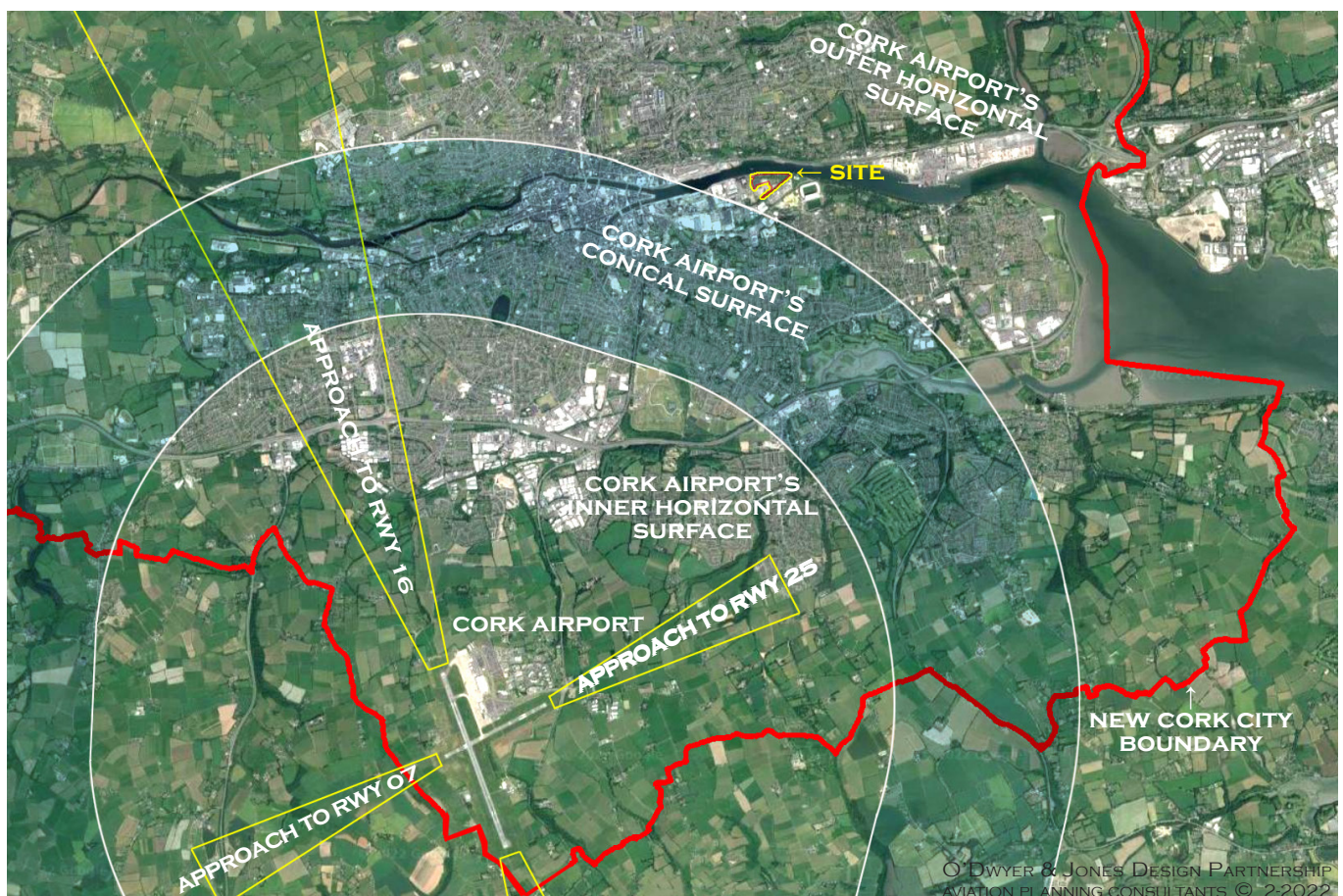
6. The Development in Relation to Cork Airport

6.1 The Site in Relation to Cork Airport's 'Obstacle Limitation Surfaces'

Below, superimposed on an aerial photograph, is a diagram of Cork Airport's 'Obstacle Limitation Surfaces' per EASA [European Aviation Safety Agency] Specifications which now apply at Cork Airport. [The City Park Development site is shown outlined in yellow, and Cork's Conical Surface is shaded in blue.] On this map –

- (i) it can be seen that the site lies **very well clear of the Approach Surfaces** (in yellow) to all of Cork Airport's runways 16/34 & 07/25; and
- (ii) that it lies **well outside the airport's Inner Horizontal Surface**, and
- (iii) that it lies **just outside the Airport's Conical Surface** [the outer edge of this Surface is at 6km from the nearest runway threshold, and as the nearest corner of the site is 6.25km from Cork's Threshold 25, the site is 250m+ outside the Conical Surface].

The one 'Obstacle Limitation Surface' which lies above the site is **Cork Airport's 'Outer Horizontal Surface'** (which extends for 15km from the airport, and lies at **292m OD** – 150m above Cork Airport's datum level at 142m OD). As this Surface is at more than 170m above the highest proposed item (the roof of Block A at 121.55m OD), the development can have no effect on this Outer Horizontal Surface (or on any of Cork Airport's 'Obstacle Limitation Surfaces').



6.2 Cork Airport’s “Public Safety Zones”, Noise Contours, & Nav aids

Below, superimposed on the same aerial photograph, are the outlines –

- (i) of the outer limit of Cork Airport’s current **Public Safety Zones**, and
- (ii) of the outer limit of Cork Airport’s current **Noise Contours**.

It can be seen that the Tedcastles site (outlined in yellow+red) lies well outside the outer limits of Cork Airport’s current Public Safety Zones, and of its current outer Noise Contour (which delineates the area where airport noise in excess of 57dB Laeq may occur).

Being more than 6km from the Airport, the site is also well outside the ICAO ‘Building Restricted Areas’ which relate to its **Navigational equipment** (ILS etc.).

- 6.3 In relation to the Public Safety Zones at Cork Airport, we should point out that these date from a Study of 2000-2005 for the three State airports, and the size of these Public Safety Zones at the Irish State airports has become very much out of step with Public Safety Zones at all other airports worldwide. Currently (since October 2021) very much smaller (and standardized) Zones – of up to 1.5km length maximum – now apply at all UK airports which have more than 45,000 annual traffic movements. The Public Safety zones at Cork are now larger than those applying at much busier UK airports (such as at Heathrow and Gatwick), and it is likely that a review of the Zones at Cork, Shannon & Dublin would give rise to a significant reduction in size.



6.4 Comparative Heights & Elevations-OD [of items in sections 6, 7, 8 & 9 of this report]

Diagram of Comparative Heights (& Elevations-OD) of—
 (i) Cork Airport, (ii) Telecommunications Mast at Mahon, (iii) the Proposed Development at Tedcastles Site,
 (iv) CUH Aero-medical Helipad, (v) The Elysian Building, and (vi) Upcoming Hotel at Custom House Quay.



ELEVATION OF THE PROPOSED DEVELOPMENT (AND OF OTHER ITEMS REFERRED TO)
 SCALE 1:3,350 APPROX.

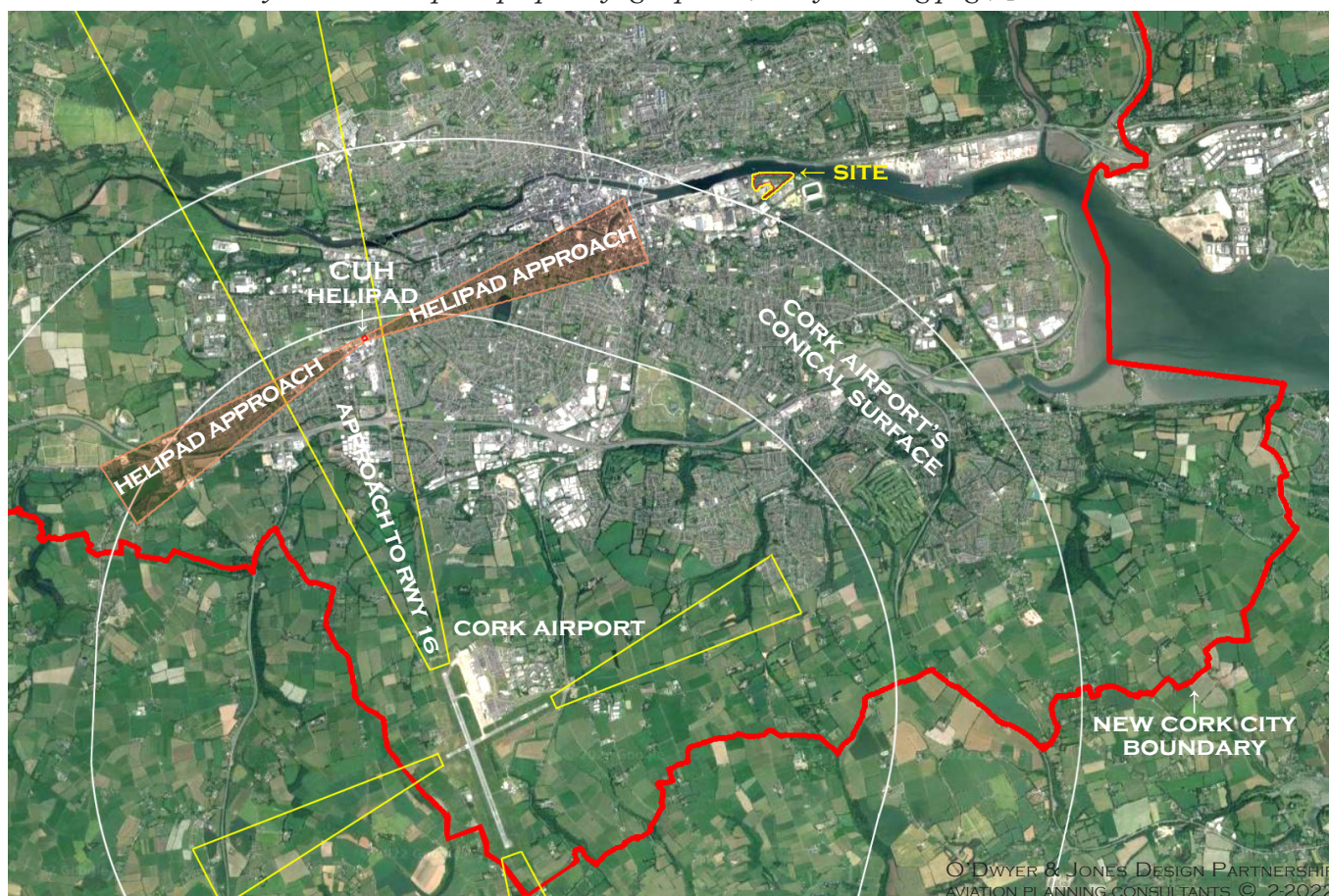
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7. The Development in Relation to Hospital Helipads

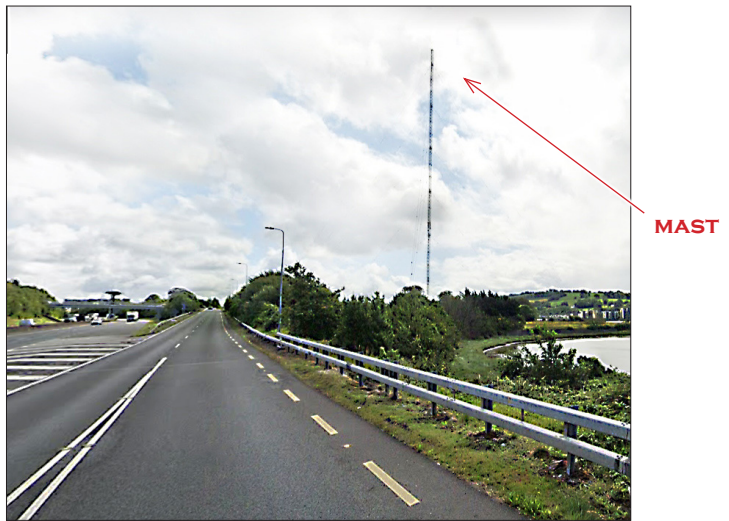
7.1 The nearest helipad to the site is at Cork University Hospital in Wilton. At present aero-medical operations by Coastguard and Air Corps helicopters take place on the pitch of the adjoining GAA grounds to the west of the hospital.

However, planning permission has been granted in August 2019 for a new helipad within the hospital grounds, at the location marked by a red dot in the aerial photograph below (*which also contains an outline of the Development Site, and Cork Airport's 'obstacle limitation surfaces'*). Other hospital helipads in the State (which are all private and unlicensed) do not have designed Approach and Departure Surfaces, however the planning application documents for the upcoming CUH helipad proposes specific Approach and Departure Surfaces at 4.5% slopes, of a category which (per ICAO specifications) extends to 3.386km in length. These are shown in their standard shape* (*tinted orange*) in the diagram below, and it can be seen that – although the main Approach Surface (bearing 259°) comes directly towards from South Docks area – it does not reach the City Park Development site. In any event the outer edge of that Surface (rising at 4.5% slope from the new helipad surface at 33m OD) will be at 185m OD, which is more than 60m above the highest point of the proposed development (and unaffected by it).

[* It is also possible that these Surfaces may be designed as curved Surfaces to link more directly with the helipad's proposed flight paths (– see following page).]

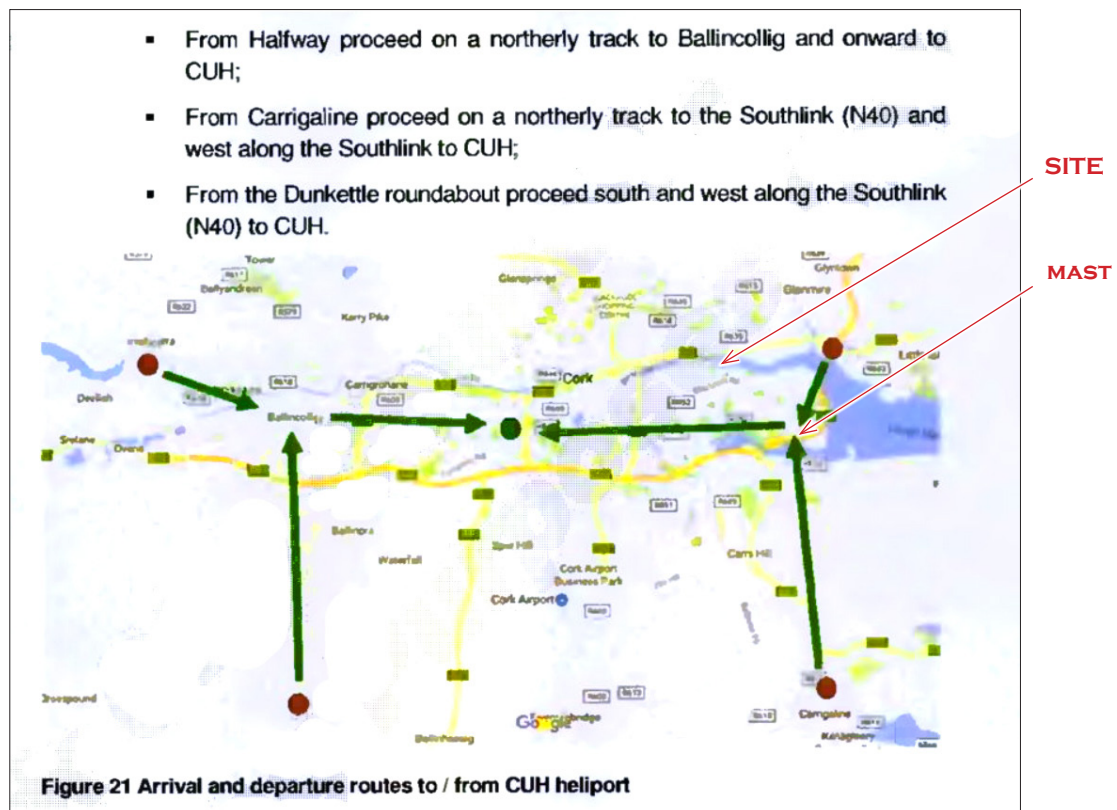


7.2 Proposed helicopter flight-path routes were included within the CUH helipad planning application (see copy below). Shown are intended helicopter routes towards the new helipad from the existing VFR 'Reporting Points' (red dots in diagram below – above Dunkettle, Classis Lake Quarry, Halfway, & Carrigaline). Nearest to the development site is the route south of it above the Southlink (N40) roadway >>.



The obstacle clearance altitudes for this helicopter route will be designed to accommodate an existing identified obstacle beside the N40 – the telecommunications & TV mast at Mahon (shown in the photo above ^) – which extends to 424ft amsl [129m OD], and is higher than the highest point of the proposed development.

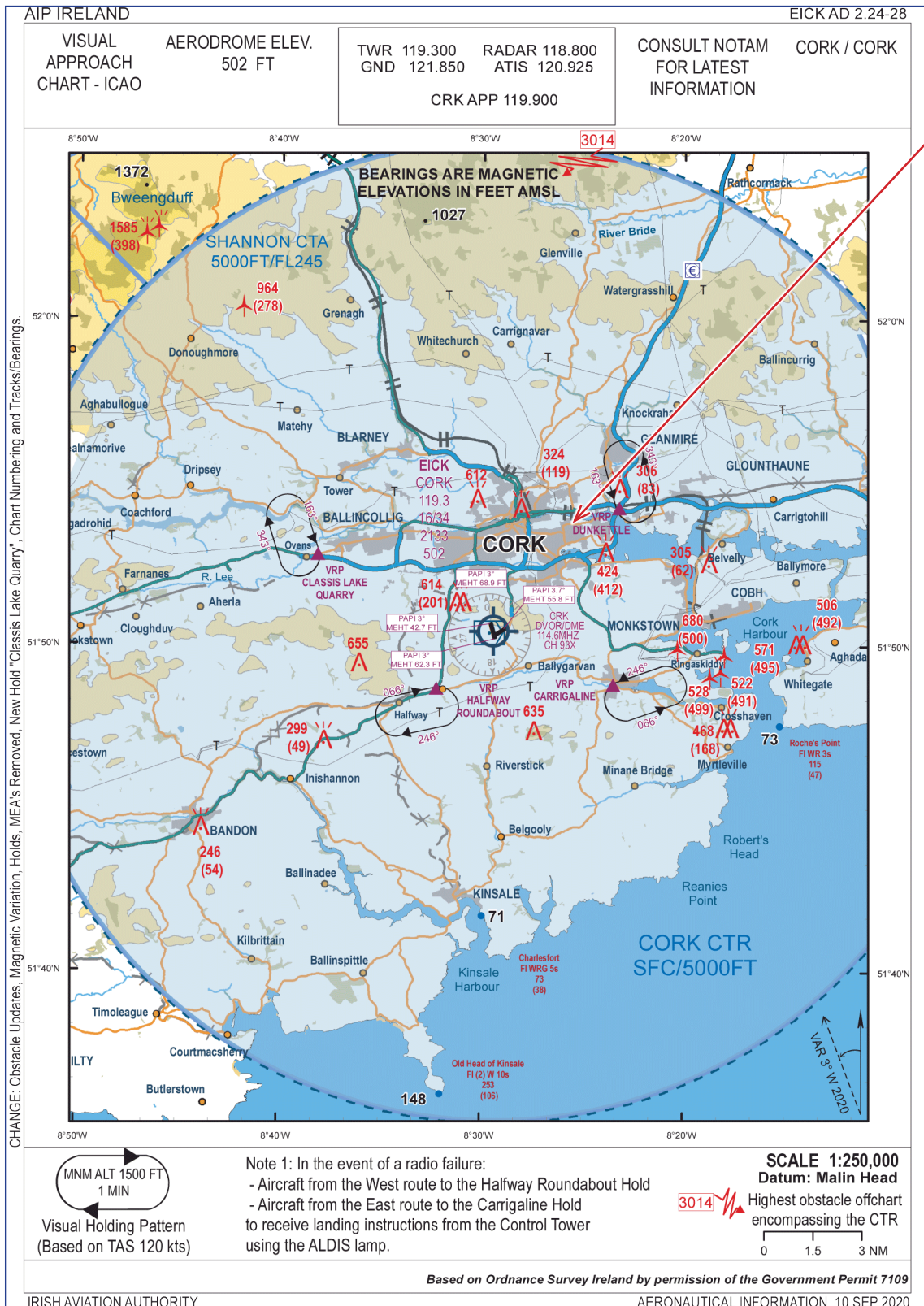
The proposed development will therefore have no effect on helicopter operations to/from the new CUH aero-medical helipad.



Cork's Visual Reporting Points (the red dots referred to above) also appear in Cork Airport's Visual Approach Chart on the following page >>.

8. Aeronautical Charts, Flight Paths, & Obstacles in Cork City area

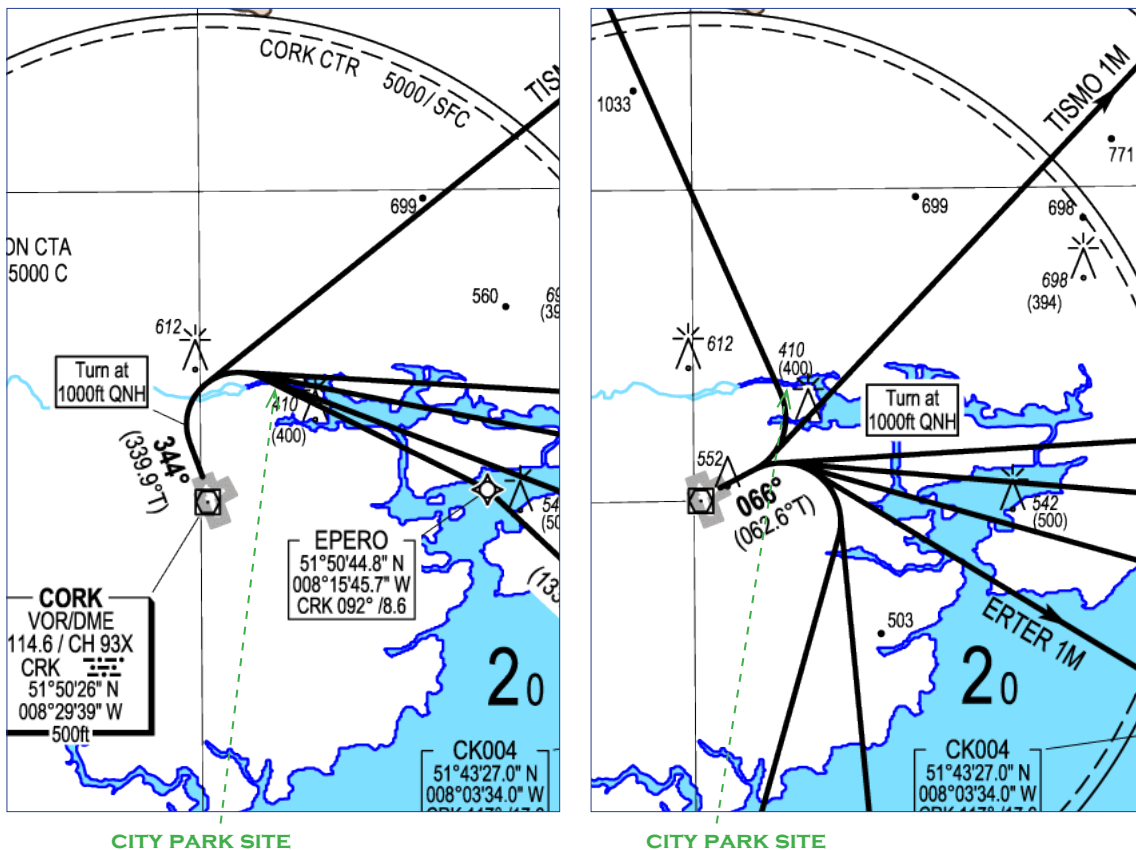
8.1 The current Visual Approach Chart for Cork Airport is shown below. This includes the four VFR Reporting Points ▲ (referred to in paragraph 7.2 above), with associated Visual Holding Patterns. The location of the site is indicated by an arrow, and the nearby broadcasting mast at Mahon (which extends to 424ft amsl /129m OD, i.e. 7m+ higher than the proposed development) is indicated by the symbol: **A**



8.2 High-level flight paths above the City Park Development site appear on two of Cork Airport’s current ‘Instrument’ Charts:

The extract below on the left is from Cork Airport’s RNAV Standard Departure Chart EICK_24-8 showing several routes heading east above the site **from Runway 34**, at minimum altitude 1000ft amsl /305m OD.

The extract below on the right is from Cork Airport’s RNAV Standard Departure Chart EICK_24-10 showing a route above the site heading north **from Runway 07**, at minimum altitude 1000ft amsl /305m OD.



8.3 These flight routes, at above 305m OD, will be wholly unaffected by the proposed development – whose highest point (at 121.55m) would be more than 185m below.

It should also be noted that Cork Airport’s datum level (at the centre point of its main runway) is at 142m OD, which itself is higher than the the highest point of the proposed development, and that aircraft rising from this elevation will be very substantially higher (at between 305m-1500m OD) when passing above the South Docks area.

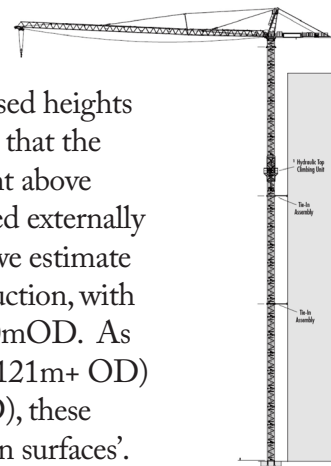
Another item to note in the above charts is the existing illuminated mast > which is the principal marked obstacle in the immediate area. This is the telecommunications mast at Mahon (shown in a photo on page 12) which extends **higher** than the proposed development. [On the charts above, which date from 2018 it is described as extending to 410ft/125m OD, but more recent charts of 2020-21 (as appear on pages 8 & 13) describe it as now extending to 424ft/129m OD.]



9. Other Aviation Considerations Relevant to this Site

9.1 Cranes During Construction

Any cranes used during construction will give rise to increased heights to be taken into account vis-à-vis aviation, and it is possible that the crane/s used in the construction of Block A (of 117m height above ground) will be some form of climbing crane – either located externally and tied-in [$>$], or an internal climbing crane. Either way, we estimate that the crane/s could add 30-40m in height during construction, with topmost point during Block A's construction reaching ~160mOD. As there is 170m to spare between Block A's highest point (at 121m+ OD) and Cork Airport's Outer Horizontal Surface (at 292mOD), these cranes will not breach any of the airport's 'obstacle limitation surfaces'.



However S.I. 215 of 2005 – *Irish Aviation Authority (Obstacles to Aircraft in Flight) Order* requires that prior notification of any such crane (i.e. any object of greater than 45m in height above ground within 10km of a licensed aerodrome) be submitted, at least 30 days in advance, to the Irish Aviation Authority and to the airport operator i.e. to Cork Airport Authority. In regard to helicopter operations at CUH, it would also seem desirable that advance notice of cranes on site also be given to the HSE's Aero-Medical Unit (in Phoenix Park, Dublin). The obligation to provide these crane notifications should be included in the project's Construction Management Plan.

Cranes on site (and in particular for Block A) should be fitted with aviation warning lights, with such lighting on their highest points and on the jibs of any luffing cranes.

9.2 Aviation Warning Lights

Although the topmost element of the proposed development is 20m *below* the ground level of Cork Airport (whose 'datum' is at 142m OD), other nearby objects of similar height above ground (e.g. the existing 125m-high mast at Mahon, and the recently-permitted 140m-high hotel at Custom House Quay) are either fitted with, or required (by the IAA) to be fitted with, aviation warning lights. Consequently it is likely that Block A at the City Park Development site will be required to be fitted with aviation warning lighting (to ICAO specifications). Coordinates have also been sought by the IAA for the Custom House Quay development, with a view to its promulgation within aeronautical information, and it seems likely that the same will arise in relation to the proposed Block A.

9.3 Solar /PV Panels

No Solar/PV panels are being provided as part of this development (so that no Glint & Glare Study applies).

10. CONCLUSIONS

10.1 The Development in Relation to Cork Airport's 'Obstacle Limitation Surfaces'

The only 'obstacle limitation surface' that lies above the site is Cork Airport's Outer Horizontal Surface, which is wholly unaffected by the proposed development as it lies at 170m above the development's highest point.

10.2 The Development in Relation to Cork University Hospital's Helipad

The site lies beyond the future Approach Surface to the permitted new helipad at CUH, and well clear of all proposed flight paths to and from the hospital helipad.

10.3 Additional Aviation Considerations

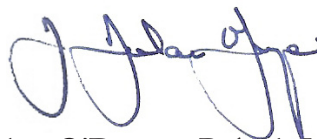
The site is well clear of all of Cork Airport's Public Safety Zones and Noise Contours, and beyond all Building Restricted Areas related to its Nav aids.

The elevation-OD of the development's highest point is more than 20m below the datum (ground) level of Cork Airport, and all flight paths in the site's vicinity are at sufficiently elevated altitudes that they cannot be affected by the development.

Cranes on site during construction will not interfere with any aviation restriction or 'obstacle limitation surface', but they must be notified in advance to the IAA and to Cork Airport, and it is desirable that they be notified to the HSE's aero-medical unit. It is likely that there may be a requirement for the tallest building (Block A) to be fitted with aviation warning lights.

10.4 Overall Conclusion

We consider that the proposed City Park residential development in Cork City complies with all aviation and aeronautical requirements affecting the site.



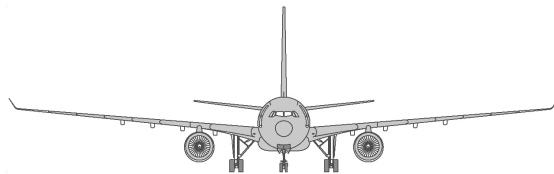
J. Declan O'Dwyer B.Arch MBA RIBA
2nd March 2022

O'Dwyer & Jones Design Partnership
Aviation Planning Consultants

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