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AVIATION IMPACT REPORT

SD21A/0241 – FURTHER INFORMATION REQUEST TO SUPPORT THE PROPERTY MANAGEMENT BRANCH OF THE DEPARTMENT OF DEFENCE

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AVIATION IMPACT REPORT
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1. SD21A/0241 – FURTHER INFORMATION FOR PROPERTY MANAGEMENT BRANCH OF THE DEPARTMENT OF DEFENCE

1.1 Further information request

1.1.1 A further information request was issued by Chief Executive Order on the 26/10/2021. Under point 7 of the further information request it was noted that:

> *No comments were received from the Irish Aviation Authority (IAA), however it is recommended that the applicant should engage with the Property Management Branch of the Department of Defence in terms of the construction and operation phases of development to assess any potential impact on flight procedures and communication, navigation and surveillance equipment present at Casement Aerodrome, a letter of consent shall be sought by Additional Information.*

1.2 Engagement with the Property Management Branch of the Department of Defence.

1.2.1 The Applicant met with the Property Management Branch of the Department of Defence on the 3 August 2021, prior to the submission of planning application SD21A/0241.

1.2.2 The proposed development was agreed in principle with further engagement and minor mitigations proposed at that meeting.

1.2.3 Subsequent to the Further Information request described by the Chief Executive Order on the 26/10/2021 the applicant sought confirmation of the requirements the Property Management Branch of the Department of Defence.

1.2.4 The request related to an assessment of any potential impact on flight procedures, communication, navigation and surveillance equipment. The Property Management Branch of the Department of Defence sought an Aviation Impact Report considering the following:

- Flue emissions from proposed stacks;
- Aircraft hazard due to wildlife (birds) attracted to the site both during and after construction and bird mitigation measures planned; and
- Glint and Glare from roof PV panels.

1.2.5 This note serves to summarise the analysis and assessment completed in respect of the request and further provides the relevant information to the Property Management Branch of the Department of Defence for review and consideration.

1.3 Flue Emissions

1.3.1 A computational fluid dynamics (CFD) model has been developed as part of the design for the Proposed Development by Burns & McDonnell. The assessment of flue emissions, their dispersal and movements are considered as part of the Environmental Impact Assessment Report and were modelled using Atmospheric Dispersion Modelling System (ADMS 5).

1.3.2 Appendix 1 includes an excerpt of the of the Air Quality EIAR Chapter. The section considers the outputs of the air dispersion modelling.

1.3.3 Figure 1-1 illustrates the maximum annual average NO2 PC values resultant from the proposed development during the reasonable worst case scenario.

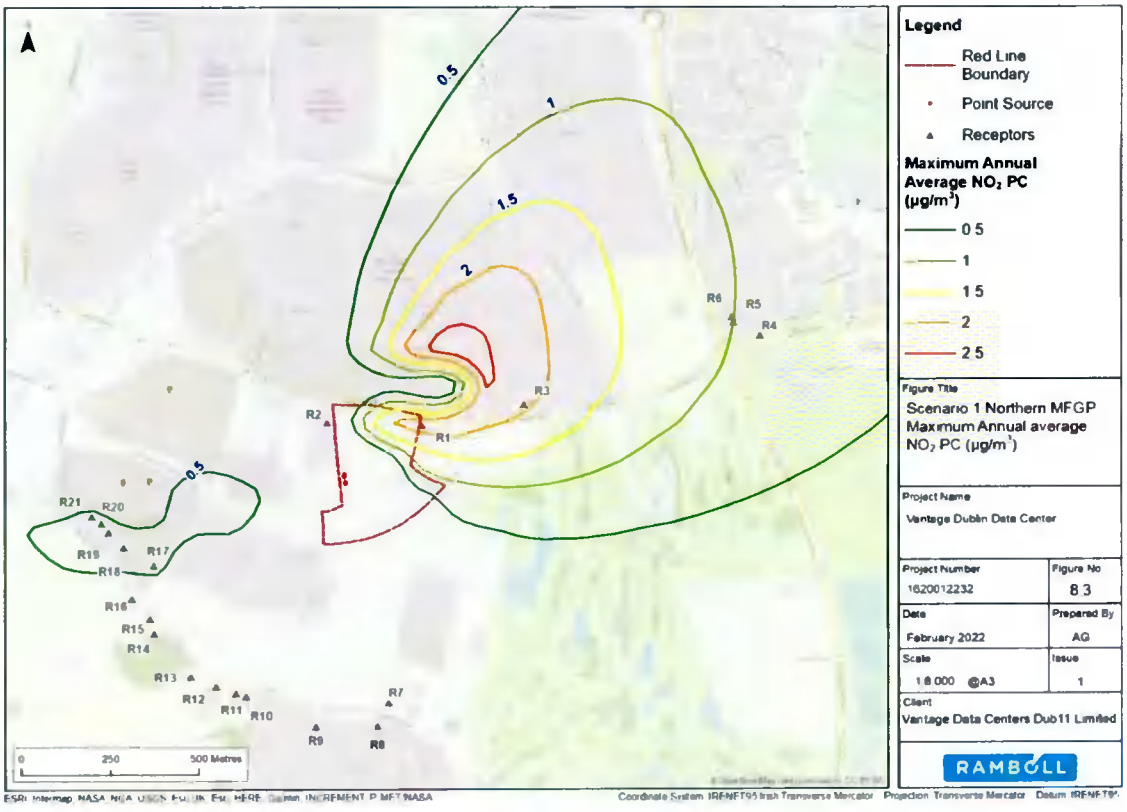

Figure 1-1 - Air Quality Mapping illustrating the zones of influence and proximity to the proposed development.

1.3.4 As illustrated in Appendix 1 in regard to Casement Aerodrome the development predominantly matches the existing environment and does not present a significant probability of increasing flue emissions as aviation hazard.

1.3.5 The analysis of flue emissions identified substantive dispersal of emissions and return to ambient levels within relatively close proximity to the development.

1.3.6 The proposed development does not increase risks to aircraft operating out of Baldonnel Aerodrome.

1.4 Aviation Wildlife Impact Assessment

1.4.1 A detailed Aviation Wildlife Impact Assessment is included in Appendix 2 of this Report.

1.4.2 In summary, the development plans predominantly match the existing environment and do not present a significant probability of increasing hazardous bird presence and thus increasing risk to aircraft operating out of Casement Aerodrome.

1.4.3 The assessment recommends that a bird hazard management plan is established in operation of the development to reduce the presence of any hazardous birds that may arrive during the construction phase of the development.

1.4.4 Similarly, the planting palette used for landscaping shall not exceed 15% berry bearing bushes and the permanent wetland should be modified to remove the islands and to enhance biodiversity whilst reducing hazardous bird access to the site.

1.4.5 Where this is not implemented, a longer term BHMP that aims to disturb and prevent hazardous waterfowl nesting at the site may be beneficial. This may also include a plan to prevent gulls from nesting on the rooftop of the site should it be suitable for such species to breed.

1.5 PV Glint and Glare Assessment

1.5.1 A detailed PV Glint and Glare Assessment is included in Appendix 3 of this Report.

1.5.2 The assessment considers the potential impacts on ground-based receptors such as roads and residential dwellings as well as aviation assets. A 500m survey area around the Application Site is considered adequate for the assessment of ground-based receptors, whilst a 30km study area is chosen for aviation receptors.

1.5.3 Within 500m of the Application Site, there is one residential receptor and five road receptors which were considered.

1.5.4 Where small groups of receptors have been evident, the receptors on either end of the group have been included in the glint and glare analysis with some context to all receptors given in the visual analysis.

1.5.5 Five aerodromes are located within 30 km of the Proposed Development: Casement Aerodrome, Weston Airport, Dublin Airport, Gowran Grange Airfield and Ballyboughal Airfield. Three Aerodromes, Casement Aerodrome, Weston Airport and Dublin Airport, require a detailed assessment due to their size and orientation in relation to the Proposed Development.

1.5.6 The solar panels will face in a southwards direction, 157.7 degrees on the roof of DUB11.1 and DUB11.2 and 168.6 degrees on the roof of DUB12, will be inclined at an angle of 10 degrees and at a height of 14.12m above ground level (AGL). As the panels will be fixed in this position, points at the tops of the panels have been used to determine the worst-case impacts on receptors.

1.5.7 Geometric analysis was conducted for one individual residential receptor and two road receptors.

1.5.8 The assessment concludes that:

- Solar reflections are possible at none of the residential receptor assessed within the 500m study area. Initial impacts were None at the receptor.
- Solar reflections are possible at one of the two road receptors assessed within the 500m study area. Initial impacts were Low at one and None at one. Upon reviewing the actual visibility of the receptors, glint and glare impacts reduce to None at all receptor points.
- No impact on train drivers or railway infrastructure is predicted.
- Green glare impacts are predicted on aviation receptors for Runways 10 and 22 at Casement Aerodrome. Green glare is an acceptable impact on aviation receptors for runways. Therefore, impacts on the Casement Aerodrome Runways 10 and 22 aviation receptors are Not Significant.

1.5.9 No mitigation is required, as the impacts are None and Not Significant.

1.5.10 The effects of glint and glare and their impact on local receptors has been analysed in detail and is predicted to be None at all ground-based receptors, and None or Not Significant at all aviation receptors, and therefore acceptable impacts.

1.6 Conclusion

1.6.1 In response to clarification sought from the Property Management Branch of the Department of Defence it is noted that the proposed development does not increase risks to aircraft operating out of Casement Aerodrome specifically in consideration of:

- Flue emissions from proposed stacks;
- Aircraft hazard due to wildlife (birds) attracted to the site both during and after construction and bird mitigation measures planned; and
- Glint and Glare from roof PV panels.

APPENDIX 1
EXCERPT OF AIR QUALITY EIAR CHAPTER