Wind Farm Aviation Safeguarding Ltd

Aviation Impact Assessment (Wildlife) – prepared in response to Request for Further Information

For

EdgeConnex Ireland Ltd
Ballymakaily,
West of Newcastle Rd (R120),
Lucan,
Co.Dublin.

CONTENTS

Issue

In respect of the planning application for the proposed development of a data centre and administration building at Ballymakaily, West of Newcastle Rd (R120), Lucan, Dublin (Planning Register Reference SD22A/0333[1]) South Dublin County Council (SDCC) have requested further information.

By way of understanding the nature of the additional information requested it has been noted that, in the Chief Executive's Order PR/1281/22, issued in respect of the planning application for this development it states that:

> *16. The applicant is requested to submit:*
> *- A wildlife aviation impact assessment*
> *- Aviation impact assessment on all potential emissions*

It is assumed that this requirement for further information is as a result of the Department of Defence Representation[2] which states that:

- *Due to the proximity to Casement Aerodrome, the developer should produce a Wildlife Aviation Impact Assessment and implement adequate bird control measures during the construction phase to mitigate the effects of birds on Air Corps flight operations.*

- *Due to the proximity to Casement Aerodrome, mitigations may be required in relation to the management of wildlife attracted to attenuation ponds or other water features. Should negative effects of bird activity on Irish Air Corps operations arise, the owner must put measures in place to mitigate these effects to an acceptable level.*

- *Due to the proximity to Casement Aerodrome, Military Air Traffic Services requests an Aviation Impact Assessment on all potential emissions. The assessment should cover the possible effects of exhaust plumes or any other associated impact on flight operations at Casement Aerodrome.*

It should be noted that this request for further information does not constitute an objection to the development and in providing the requested information this report has been purely desk based and utilises information in the SDCC Planning portal, the SDCC Development Plan and elsewhere in the public domain; no correspondence or communication has been undertaken with SDCC or the Department of Defence (DoD) or the Irish Air Corps (IAC) to expand on operations and/or safeguarding protocols at Casement Aerodrome. This approach has been adopted for expediency, and in providing the requested information

[1] Application Date 16 Aug 2022, Order date 10/10/2022.
[2] Department of Defence – Property Management Branch, unreferenced letter dated 06 September 2022 (Re: Planning Registration No: SD22A/0333)

within the client's available timeline, but the authors would welcome the opportunity to discuss and provide any further information needed as a result of this report.

This assessment considers the potential for effects from wildlife on aviation and the potential for effects from plumes are addressed separately and contained in a further report.

Executive Summary

This is a desk-based report addressing the request, from South Dublin County Council, for further information in respect of the proposed development of a data centre and administration building at Ballymakaily, West of Newcastle Rd (R120), Lucan, Dublin (Planning Register Reference SD22A/0333[3]) South Dublin County Council (SDCC) have requested further information.

There are various agencies referred to within documentation pertinent to the information requested by SDCC. The International Civil Aviation Organisation (ICAO) is the aviation agency of the United Nations and is charged and funded by national governments to provide best advice, on a global basis, on civil aviation policy and civil aviation standardisation. The European Aviation Safety Agency (EASA) is the European Union aviation body charged with standardising the aviation regulations and practises within the EU member states to ensure the highest level of common safety standards. Ireland is a member state of EASA and the Irish Aviation Authority (IAA) is the Regulator for all civil aviation matter within Ireland and Irish airspace for both General Aviation and Commercial Aviation.

It should be noted that the Irish Air Corps are not subject to civil regulation but operate, independently, under regulation as determined by the Department of Defence/GoC IAC. However, in terms of safeguarding the IAC implement civil regulation where it does not affect operations or operational capability.

The submitted DoD Representation states that:

- *Due to the proximity to Casement Aerodrome, the developer should produce a Wildlife Aviation Impact Assessment and implement adequate bird control measures during the construction phase to mitigate the effects of birds on Air Corps flight operations.*

- *Due to the proximity to Casement Aerodrome, mitigations may be required in relation to the management of wildlife attracted to attenuation ponds or other water features. Should negative effects of bird activity on Irish Air Corps operations arise, the owner must put measures in place to mitigate these effects to an acceptable level.*

And these requirements are reflected in the Chief Executive's Order which requests the applicant to submit a wildlife aviation impact assessment[4].

In regard to the assessment the baseline environment and criteria contained within the extant SDC Development Plan 2022 - 2028, the Chief Executive's Order, previous DoD published information and aviation documents and registries of aerodrome information

[3] Application Date 16 Aug 2022, Order date 10/10/2022.
[4] Paragraph 16.

have, as far as possible, been the prime sources of data in correlation with aviation documentation in the public domain.

The closest point of the development site to the Airfield Reference Point (ARP), north of the mid-point of runway 10/28, is approximately 2.6km and the furthest point approximately 3.0km. The attenuation ponds which are the focus of this particular request for further information are approximately 2.9km from the Airfield Reference Point (ARP) north of the mid-point of runway 10/28.

Extant international guidance and the IAA Bird and Wildlife Strike Management MP) at Aerodromes[5] states that it is the aerodrome operator (*emphasis added*) who is responsible for the conduct of a wildlife hazard assessment on and in the vicinity of the aerodrome and which should be included within the aerodrome manual[6].

Extant IAA, ICAO, FAA and UK CAA guidance, amongst others, all logically consider that, other than birds, wildlife hazards to aviation happen on the ground and, therefore, occur on the aerodrome. Whilst the Aerodrome Operator's Wildlife Management Plans should also consider wildlife in the vicinity of aerodromes, management efforts to reduce wildlife hazards and risks of collisions, on the ground, should be focussed on the aerodrome itself.

WFAS have found no evidence to support any consideration that this individual development and relatively small-scale attenuation ponds, would lead to an increase in ground-based wildlife at Casement aerodrome which could be attributed singularly to the proposal.

In respect of these attenuation ponds, approximately 2.9km from Casement Aerodrome ARP, bird control is the principal wildlife concern (rather than incursions by mammals on to the aerodrome).

Casement Aerodrome is in an area which contains much by way of existing water features and which are significantly larger and in areas which will be much more attractive, in terms of natural habitat, for wildlife than the attenuation ponds within the planning application which are approximately 2.9km from the ARP at Casement.

Either the existing Casement Aerodrome Wildlife Management Plan must reflect the existing water features and have mitigations in place to minimise any effects on aerodrome operations from those, or the existing infrastructure can be considered to not actually pose any hazard to those aviation operations.

The IAA response on Weston Aerodrome, which is a similar distance from the development as Casement Aerodrome, does not consider the attenuation ponds to represent any increase

[5] IAA Bird and Wildlife Strike Management at Aerodromes, March 2021, Section 2.3. This requirement for the Aerodrome Operator is consistent with other international guidance.
[6] Paras 2.3.3 and 2.3.4

in bird hazard and does not require any actions by the develop on behalf of the aerodrome operator.

Based on the guidance factors contained within national and international documentation it is considered that there would not be any increase in wildlife activity in the area as a result of the proposed attenuation ponds and that, consequently, there can be no additional effect on, or additional hazard to, aviation operations at Casement Aerodrome.

It should be the ongoing responsibility of the Aerodrome Operator to monitor the ponds (along with other existing water features) such that, if any wildlife activity gives rise to any concern in respect of aviation in the future, that activity is recorded and assessed within the parameters of the aerodrome WMP such that the Aerodrome Operator can initiate effective mitigation/wildlife control measures.

Background Information

There are various agencies referred to within documentation pertinent to the information requested by SDCC. It might be useful in the context of this paper to provide an outline of the main agencies and government bodies which have roles and responsibilities for airspace and aviation regulation on a global, European and national level.

The International Civil Aviation Organisation (ICAO) is the aviation agency of the United Nations and is charged and funded by national governments to provide best advice, on a global basis, on civil aviation policy and civil aviation standardisation. ICAO was established (on a provisional basis due to the ongoing war) in Chicago in 1944 by the then participating 54 nations, hence the term "Chicago Convention". Annexes to the Chicago Convention now account for over 12,000 internationally agreed and recognised standards and recommended practise (SARPS). Ireland is a member state of ICAO.

The European Aviation Safety Agency (EASA) is the European Union aviation body charged with standardising the aviation regulations and practises within the EU member states to ensure the highest level of common safety standards. Ireland is a member state of EASA.

The Irish Aviation Authority (IAA) is the Regulator for all civil aviation matter within Ireland and Irish airspace for both General Aviation and Commercial Aviation. From December 2017 the IAA has implemented EASA regulation, reflecting ICAO regulation, but some documentation will still refer to either body or regulation number.

The Department of Defence regulates the Irish Air Corps (IAC) and civil regulations are not binding on either but, as is increasing the case by military forces on a global basis, the IAC will apply civil regulation and guidance, as best practise, where there is no impact on operations or operational effectiveness.

Introduction

Available Information/Documentation

For reasons which are not in the public domain the DoD would appear to have removed all information relating to the aerodrome from publicly available documents, including the aerodrome website and the IAA IP. In meeting the request for further information, the baseline environment and criteria contained within the extant SDC Development Plan 2022 - 2028, the Chief Executive's Order, previous DoD published information and aviation documents and registries of aerodrome information have, as far as possible, been the prime sources of data in correlation with aviation documentation in the public domain. In determining the safeguarding criteria and parameters to be adopted in relation to the aerodrome at Casement these have then considered within extant regulation as determined

by the IAA, EASA and ICAO including PANS Aerodromes (Doc 9981), ICAO Airport Services Manuals (Doc 9137), and the International Birdstrike Committee (IBSC) Standards.

Casement Aerodrome

Casement Aerodrome is a military airfield located approximately 13km southwest of the city of Dublin. The Aerodrome serves as the Headquarters and the main operating base of the Irish Air Corps.

Casement Aerodrome has two runways of orientation 04/22 and 10/28 and respective lengths of 1,828m and 1,462m.

The Development Site

The closest point of the development site to the Airfield Reference Point (ARP), north of the mid-point of runway 10/28, is approximately 2.6km and the furthest point approximately 3.0km. The attenuation ponds which are the focus of this particular request for further information are approximately 2.9km from the Airfield Reference Point (ARP) north of the mid-point of runway 10/28.

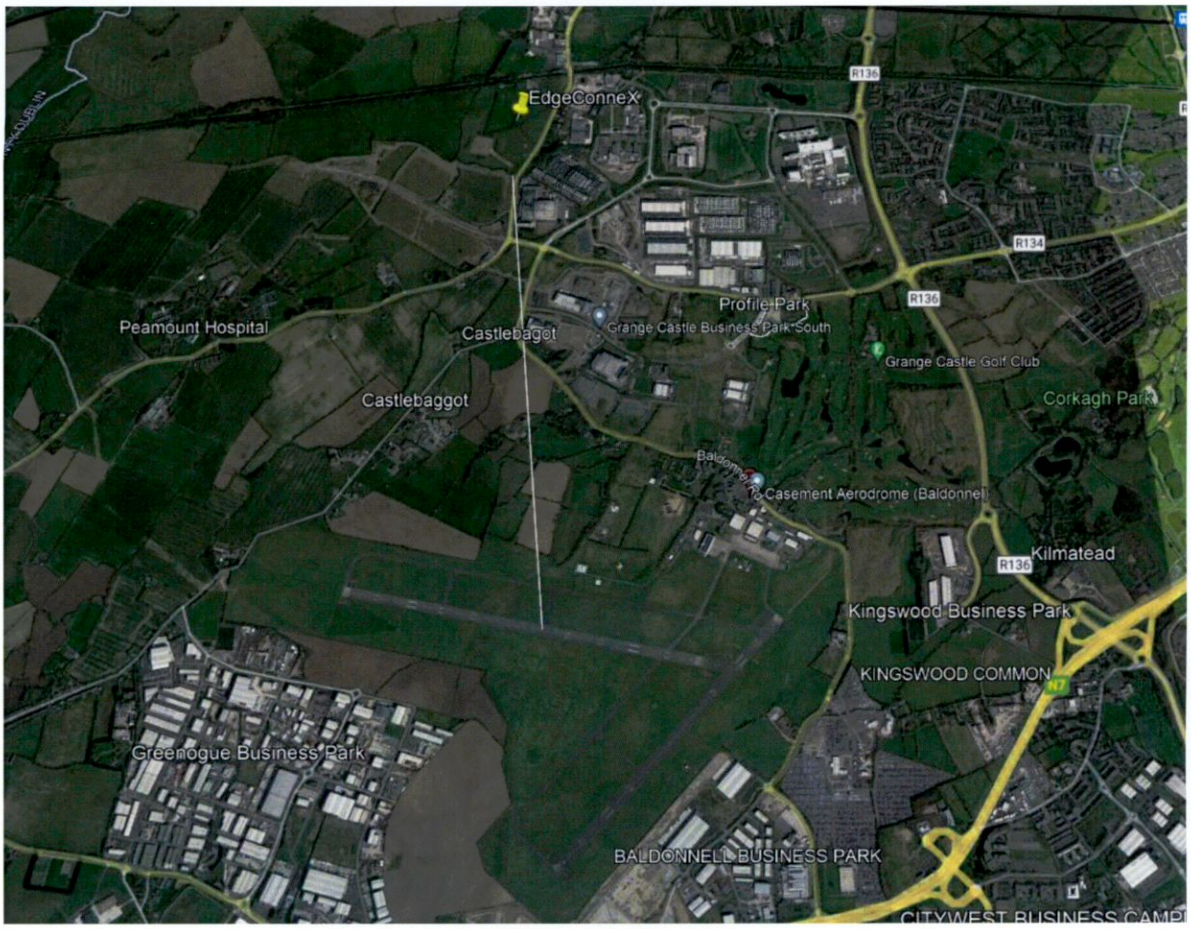

Figure 1 – The proposed development site in relation to Casement Aerodrome
Source: Google Earth

Wildlife Aviation Impact Assessment

The history of bird strikes (literally a collision between a bird and an aircraft and, latterly, other wildlife) began with the very first flights of the Wright Brothers in 1905 and after several serious accidents and significant loss of life ICAO issued the first guidance on the reduction of bird hazards at aerodromes resulting in the inclusion of bird control measures within Annex 14 in 1969; this guidance has been subject to ongoing amendment and enhancement ever since and in 2009 ICAO expanded its consideration to include all wildlife and Member States are required to report all bird and wildlife strikes and this information is then disseminated to the global aviation community. From their extensive data base ICAO has concluded that 96% of all wildlife strikes occur on or near airports.

As the level of aviation, both globally and nationally, continues to increase (and notwithstanding the apparent temporary downturn in recent years and due to those extenuating circumstances) so, too, does the risk of wildlife (predominantly birds) hazards to aircraft. This is particularly so for aircraft operating at low-level or in the vicinity of

airports if that wildlife hazard is not properly managed within the context of the baseline environment in terms of development.

This assessment will consider the likely effects of wildlife on aviation and will not consider any likely effects of the construction/operation of the proposed development on wildlife; the focus will be on safety and considering any available evidence that might suggest that the development will cause an additional or increased level of wildlife hazard to aviation.

This report is not meant to represent a wildlife control or management plan or to comment on how individual species of birds or wildlife can be controlled/managed but will merely consider if there is any evidence that the proposal will cause any increase in risk or flight safety hazard to operations at Casement.

The submitted DoD Representation states that:

- *Due to the proximity to Casement Aerodrome, the developer should produce a Wildlife Aviation Impact Assessment and implement adequate bird control measures during the construction phase to mitigate the effects of birds on Air Corps flight operations.*

- *Due to the proximity to Casement Aerodrome, mitigations may be required in relation to the management of wildlife attracted to attenuation ponds or other water features. Should negative effects of bird activity on Irish Air Corps operations arise, the owner must put measures in place to mitigate these effects to an acceptable level.*

And these requirements are reflected in the Chief Executive's Order which requires the applicant to submit a wildlife aviation impact assessment[7]

National and International Guidance

The definition of "proximity" within the DoD submission is not provided and, given that WFAS does not have all of the information that was considered in determining the stated conditions, we would consider that, as written, the stipulations and the validity of those should be subject to further scrutiny. In determining any wildlife effects, it should be noted that the following constraints within his application are of relevance:

First,

- *The developer should.....implement adequate bird control measures during the construction phase to mitigate the effects of birds on Air Corps flight operations.*

[7] Paragraph 16.

ICAO provides standards and guidance on wildlife hazards at or in the vicinity of aerodromes and it is assumed that the DoD (IAC) already adopt those practises. The measures required during the construction phase are addressed below but it should be noted that the IAA Bird and Wildlife Strike Management (WMP) at Aerodromes[8] states that it is the aerodrome operator (*emphasis added*) who is responsible for the conduct of a wildlife hazard assessment on and in the vicinity of the aerodrome and which should be included within the aerodrome manual[9]. WFAS have not had sight of the Casement Wildlife Management assessment, the aerodrome manual for Casement or the aerodrome safety management system and it is to be expected that those documents already account for mitigating the potential hazards which, however unlikely, could result from this proposed development.

The proposed development will not represent a waste disposal site (subject to a 13km restriction[10]) and, for this proposal, there will be a Construction Management Plan (CMP) and Waste Management Programme in place throughout the construction phase; these will address the control of all debris and food waste on site during construction.

In addition to the waste management plan, the requirement to have bird control measures in place during construction would seem to imply that those measures would need to be in place from the outset of construction. However, out with the developer's CMP and the Aerodrome Operator's WMP, this would require mitigation of any effect before that effect was experienced and on the part of the developer, without apparent involvement of the Aerodrome Operator and separate to any wildlife mitigation measure already in place at, and in the vicinity, of Casement Aerodrome. Putting in place mitigation before any effect was experienced would not allow an assessment to be made as to whether the mitigation was being effective or whether the envisaged wildlife issue from the proposed development was actually realised.

Second,

furthermore, the requirement is considered to be extremely opened-ended in that in demanding that the developer "….. *mitigate the effects of birds on Air Corps flight operations*", would seem to bestow an over-arching responsibility on the developer. In our opinion, the scope of those possible effects needs to be geographically bounded and as proven to be resulting from the proposed attenuation ponds. As it currently reads the developer shall be responsible for all bird effects on all Air Corps operations irrespective of location within the surrounding area of the proposal. Notwithstanding this apparent lack of

[8] IAA Bird and Wildlife Strike Management at Aerodromes, March 2021, Section 2.3. This requirement for the Aerodrome Operator is consistent with other international guidance.

[9] Paras 2.3.3 and 2.3.4

[10] For safeguarding purposes against wildlife 13km is not mandated within regulation but can be increased or decreased as considered appropriate. The distance is not stipulated within EASA Regulation and it is important that the WMP clearly states what distance has been applied and the rationale for the deviation from extant guidance. Ultimately it is the sole responsibility of the aerodrome operator to determine and manage its wildlife safeguarding policies both on and off the aerodrome and with particular importance afforded to features such as waste management/sewage plants, land-fill sites etc.

clarity in wording, the IAA Bird and Wildlife Strike Management at Aerodromes states who is responsible for establishing the *"means and procedures to minimise the risk of collisions between wildlife and aircraft"* [11]

Third,

- *Mitigations may be required in relation to the management of wildlife attracted to attenuation ponds or other water features. Should negative effects of bird activity on Irish Air Corps operations arise, the owner shall put measures in place to mitigate these effects to an acceptable level.*

This condition is considered to be at variance with the requirement above. That previous stipulation calls for mitigation to be implemented whilst this condition states that mitigation may be required *"....should negative effects of bird activity on Irish Air Corps operations arise"*. If the previous stipulation during the construction phase is met then this requirement should be viewed as persistent and ongoing but without stipulating how this could be implemented for the two small attenuation ponds which are within the submission but without clarifying how these ponds could be considered, singularly, responsible and given the surrounding landscape including those ponds and lakes already in existence or permitted. The IAA guidance on where the responsibility lies is, similarly, fundamental to mitigation of any hazard.

Additionally, and again in WFAS opinion, this is considered to be open-ended to the point of being undeliverable. Notwithstanding the responsibility of the Aerodrome Operator, in trying to bestow such responsibility on the "*owner*" and given the lack of any geographical boundary within which the undefined "*owner*" is responsible for such measures, it reads as if the measures should address all wildlife whilst then, apparently, focussing on birds, but without any geographical limit. As the requirement is worded it would make the "*owner*" responsible for wildlife attenuation resulting from the nearby, much bigger, much more attractive small lakes and ponds on the adjoining golf course geographical features and beyond.

In our opinion, and given that responsibility does not rest with the developer, in attempting to satisfy this requirement there will have to be more clarity on the definition of "*negative effects*" and how they can be attributed directly to the construction on the site and subsequent presence of the attenuation ponds contained within the application, as opposed to usual bird/wildlife activity in the general area. Any measures taken by way of mitigation would have holistic and be in concert, and co-ordinated with, the actions of the aerodrome Bird Control Unit (BCU) and together with any actions being taken by other landowners at the behest of the DoD; forcing birds to move from one site but only on to, or in the direction of, the aerodrome would be counter-productive and could constitute a much greater flight safety hazard. Any actions or bird/wildlife mitigation measures required, or which the DoD has, erroneously, required of other owners of existing facilities which include water features

[11] Para 2.3.1, sub-para (b)

or wildlife habitats (including the canal and the golf club etc.), in controlling bird and wildlife activity around the aerodrome must be co-ordinated given the additional planning requirement/aim of maintaining wildlife natural habitats[12].

Any lack of a co-ordinated effort between any, and all, agencies required by the DoD (IAC) to enact such measures, would be counter-productive; not to have such co-operation could result in agencies working independently and at odds with one another and creating the hazard they were trying to mitigate whilst ensuring that the efficacy of the measures at each site could not be assessed/validated.

- *".....measures in place to mitigate these effects to an acceptable level"*

It is considered that this would need further expansion if any mitigation is not to be required unnecessarily. The IAC/Casement BCU should be maintaining both a WMP and records of bird types/movements/migrations which represent the currently acceptable level. The period of time over which any perceived increase in the numbers of birds should be correlated against those records and in accordance with the WMP/records and be shown to be directly attributable to the construction and operation of the site activities before mitigation measures are enforced. The BCU should be operating beyond the scope of the aerodrome boundary (not to do so would imply that any bird issue is confined to that boundary which is unrealistic given the flight patterns of birds) and it might prove that their area of operation, either with vehicles on the ground or by any BCU airborne birds of prey, would account for any perceived effect from the construction activities (and accepting the distance between the development location to the boundary of Casement Aerodrome).

It is not apparent how increased bird activity could arise singularly as a result of the proposed attenuation ponds which are incorporated in accordance with the requirements of the Sustainable Urban Drainage System stipulations (SUDS)[13]. Furthermore, it is suggested that if the SUDS requirements are to be maintained then further discussion on these conflicting conditions is required with the DoD as WFAS cannot comment further:

- on the need for such measures,
- on why the DoD (IAC) as the Aerodrome Operator consider that responsibility rests with the developer and how/why the developer should, or can, meet the requirements of both (or either),
- the geographical extent to which they would need to be applied,
- of any form of mitigation which might be considered necessary,
- how any mitigation required would work in concert with other landowners subject to such conditions enforced by the DoD (IAC), and
- that nature of the mitigation required and/or permitted is permissible under Irish/EU/ICAO legislation.

[12] Chief Executive's Order PR/128122, Table 12.27, Open Space and Landscape et al
[13] Chief Executive's Order PR/128122, Section 12.11.1 (Water Management)

Under extant guidance these considerations are all the responsibility of the aerodrome operator and all of the relevant information required for determining the need for these conditions/mitigations should be contained within an aerodrome/BCU management plan which will inform any decision on wildlife control measures.

Wildlife

WFAS could find no DoD documentation or guidance on the control of wildlife at Casement and nor does there appear to be any Wildlife Management Plan for the aerodrome available in the public domain. The main source of guidance has been the IAA Bird and Wildlife Strike Management at Aerodromes[14] in conjunction with other civil Regulators' guidance (EASA, FAA, CAA etc).

In attempting to determine any future level of hazard WFAS have sought to consider the existing baseline environment and that which might result from any future development to gain an outline singular assessment of this development given the other existing and permitted/planned development.

The proposed development is surrounded by existing and planned development, most notably the development granted permission under planning application SD19A/0042, and SD21A/0042 we do not consider that, in the context of possible hazards to aviation, the application can be considered in isolation given the permitted buildings and other attenuation ponds, lakes and rivers/canals in the area.

In terms of aviation the proposed site is approximately 2.6km, at the closest point, from the Casement Airfield Reference Point (ARP) and with a combination roads, industrial sites, commercial/office blocks and farmland between the aerodrome and the proposed development. In terms of wildlife hazards, the aerodrome WMP should consider, as a basis for further work, identification of hazards, management options and mitigations including habitat management in the vicinity of the aerodrome, available control measures and other safeguarding procedures in order to minimise the risk of a collision between wildlife and aircraft both in the air and on the ground.

Available extant IAA, ICAO, FAA and UK CAA guidance, amongst others, all logically consider that, other than birds, wildlife hazards to aviation (within aviation wildlife should be considered to be any animal not under control including feral animals (hares, rabbits, deer etc) but also include domesticated pets such as cats and dogs). By definition, such hazards and collisions happen on the ground and, therefore, occur on the aerodrome and, whilst Wildlife Management Plans should also consider wildlife in the vicinity of aerodromes, management efforts to reduce wildlife hazards and risks of collisions should be focussed on

[14] March 2021

the aerodrome itself although guidance does recommend that safeguarding should highlight how measures can be employed beyond the aerodrome boundary in the control of wildlife.

WFAS have found no evidence to support any consideration that this singular development and relatively small-scale attenuation pond, would lead to an increase in ground-based wildlife at Casement aerodrome (approximately 2.9km away) which could be attributed singularly to the proposal.

In respect of these attenuation ponds, approximately 2.9km from Casement Aerodrome ARP, bird control is the principal wildlife concern (rather than incursions by mammals on to the aerodrome). Mammals have, therefore, been discounted from further consideration.

Bird Control

WFAS consider that the implementation of effective bird control measures would require expert advice on both ornithological aspects and on bird control/scaring measures (depending on the species of birds) which might be considered necessary by the DoD/IAC as likely to result as a consequence of this development; further advice on those may need to be taken. However, the staff within the WFAS team have extended experience of bird control around airfields, and of managing bird control units at military airfields, over many years and offer following considerations.

Both manmade and natural landscaping features outside the aerodrome boundary can attract wildlife onto and aerodrome. These can include:

- Landfill sites
- Sewage works
- Building developments
- Drainage schemes
- Reservoirs
- Gravel pits
- Coastal areas
- Rivers and estuaries
- Woodland and agricultural land,

the majority of which already exist in the vicinity of Casement. Any such sites should, however, be viewed in the context of extant operations and existing bird control measures and mitigations which permit ongoing safe aviation operations.

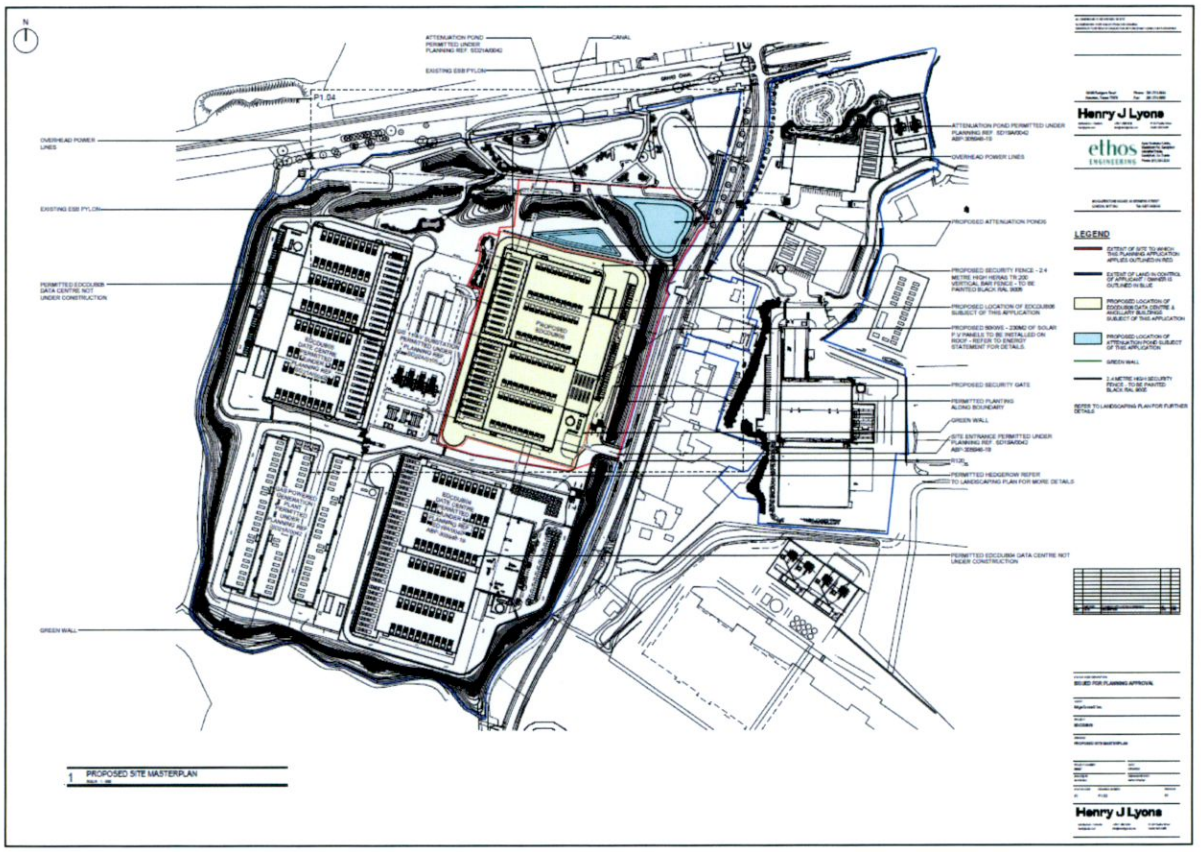

Figure 2 – Detailed development plan.
Source: SDCC Planning Portal, Planning Register Reference SD22A/0333

WFAS have not discussed the stated concerns, or the justification for them, with DoD personnel. The small water areas/spills within the various iterations of the proposal are not considered significant in terms of birds and, therefore, in the absence of any recorded/documented evidence to suggest otherwise, it is not apparent why the concerns over possible effects from birds is an issue with this development as opposed to other proposals in the area. Without the background thinking/rationale on why birds, with their possible effects on air operations, will be attracted to this small construction site it is not understood why,

- there is a perception that the number of bird movements in and around the proposed development might increase from current levels or,

- why birds might prefer to be around the environs of the proposed development rather than much quieter surroundings of the long-established golf course (Grange Castle) lakes and other existing water features which, presumably, would represent a much more plentiful source of food.

Casement Aerodrome is in an area which contains much by way of existing water features and which are significantly larger and in areas which will be much more attractive, in terms of natural habitat, for wildlife. The attenuation ponds within the planning application will be approximately 2.9km from the ARP at Casement; some of those existing water features are much closer and in areas which would be key to airfield operations:

- the numerous lakes and ponds within the Castle Grange Golf Club and within Corkagh Park[15] are directly underneath or immediately adjacent to the approach to runway 22,
- the Dublin Concrete Batching plant (with the associated excavation works) have areas which are subject to rainwater accumulation, and which are directly underneath or immediately adjacent to the approach to runway 28,
- similar water accumulation areas are also present at the quarry to the south-west at Behan aggregates,
- there is a large lake at the Lyons Estate to the right of the approach to runway 10 and at the Winthrop Park and Ride facility,
- other features include the Grand Canal, the Brittas Reservoir and the Bohernabreena reservoirs.

The existing Casement Aerodrome Wildlife Management Plan must reflect these and have mitigations in place to minimise any effects on aerodrome operations from those, or the existing infrastructure does not actually pose any hazard to those operations. It is considered that the extensive nature of those water features in the vicinity of Casement, in addition to the attenuation ponds already permitted within other applications, validates the opinion that these small ponds will not alter the existing wildlife environment to the extent that there would be a result increase in wildlife activity at Casement Aerodrome 3km to the south.

This would appear to be consistent with the IAA response on Weston Aerodrome (similarly 3km distant) which does not consider the attenuation ponds to represent any increase in bird hazard and does not require any actions by the developer on behalf of the aerodrome operator. It has been assumed that the IAA/Weston Aerodrome operator consider that such

[15] The Corkagh Park Development plan (SD218/0011) aims to conduct landscaping within the park and to install picnic areas (amongst other measures and enhancements) and the and associated studies highlight the desirable and populous nature of the wildlife and bird habitats and provides further detail on the extent of the lakes, ponds rivers and drainage ditches within the park which provide such habitats. Accepting that the Development Plan was not subjected to EIA protocols due to the nature of the application, there does not appear to have been any consideration of the DoD perspective on whether the development would have any potential impact on wildlife numbers and presumably on the basis that it would not even though these are key areas for aviation operations at Casement Aerodrome. Whilst wildlife studies were conducted for the application, these were from a perspective of protecting wildlife and their habitats but not from any possible effect on aviation operations. From the available documentation that WFAS could access the restriction on buildings above 20m within 2km was considered but there was no, apparent consideration or risk assessment of any potential hazard to Casement operations nor mitigations stipulated as a result of increased wildlife hazards.

wildlife effects will not result from the proposed development, further controls measures are not necessary or that measures already in place will be effective in mitigating any possible effect from these two small ponds.

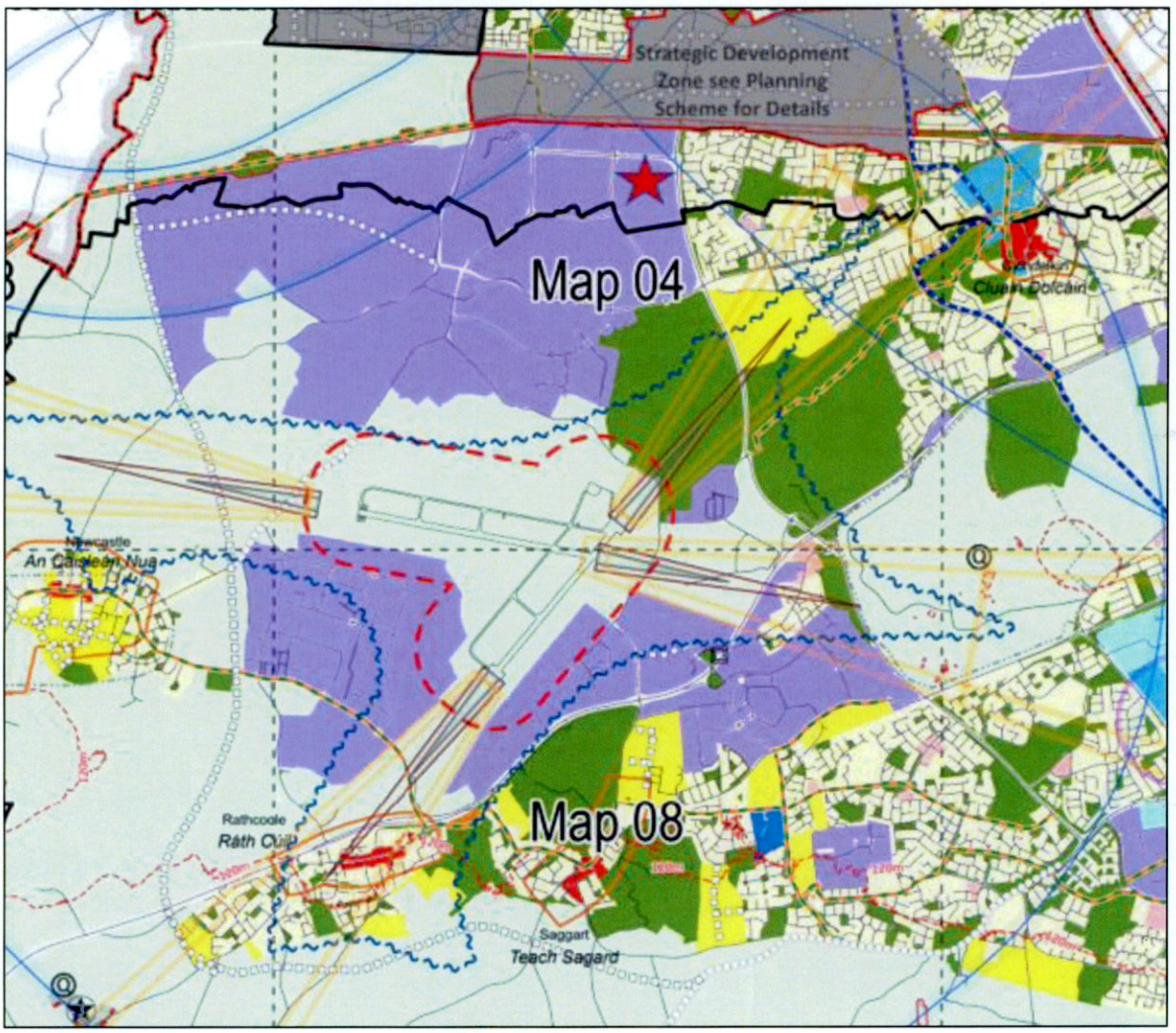

Figure 3 – Approaches to Casement Aerodrome runways.
Source: SDCC Development Plan, Index Map

(The proposed development location is indicated by the red star, and clear of any runway approach or climb-out).

In assessing the significance of any wildlife (bird) effects from the proposed development on aviation operations at Casement it is necessary to undertake an assessment of the possible effects and to then determine if the effect would lead to a significant effect on operations or flight safety.

The aerodrome operator should be maintaining a detailed data base of recorded wildlife and species both on and in the vicinity of the aerodrome and which should be used to determine

the WMP and the mitigation strategies which are most effective depending on species, seasons etc. and which should include historic data and wildlife patterns compiled over a number of years. In the absence of any information on Casement recorded data that WFAS could find within the public domain, the following assessment has been considered adopting/adapting accepted aviation risk management assessment methodology on physical and technical safeguarding. It is generic (rather than species specific) as called for within the RFI and is focussed on the proposed ponds' location (within the existing water features) and the possibility that these two small ponds could, singularly, give rise to increased wildlife numbers and/or effect aviation operations at Casement Aerodrome.

The sensitivity of operations (or a receptor) is subjective in aviation terms and therefore difficult to quantify. The fact that a proposal might affect operations or the performance of a technical system for example, does not always lead to the conclusion that there will be a significant effect. However, it is essential that safety is maintained at the current acceptable levels and there should also be a dialogue between the developer and aviation stakeholders to agree what effect if any there will be on operations, to determine if that effect is acceptable within an operational context and, if not, then to agree mitigation if any is necessary and feasible.

From the available information on the Casement Aerodrome Bird Control Unit the techniques employed at the aerodrome would be very much in keeping with those in place at other aerodromes and airfields across Europe and beyond. It is acknowledged that we do not have sight of the local migratory patterns for birds, or types of birds, in the vicinity of Casement Aerodrome but the IAA Bird and Wildlife Strike Management at Aerodromes has provided valuable information on the types of birds that might be encountered within the area and possible techniques to counter those.

To determine the potential effects of the proposed development on aviation operations, the probability (and consequent sensitivity) of the envisaged effects was considered in relation to the magnitude of effect. Table 1 below provides the definition of terms relating to the possibility and sensitivity of those envisaged wildlife hazards and the severity of effect on operations for the proposed development based on potential operational impacts.

Table 1. Probability of effect of overall increased wildlife numbers resulting from the two attenuation ponds.

Magnitude	Criteria
High	There is likely to be significant wildlife effects from the proposed development which the facility or airspace user has limited capacity to accommodate.
Moderate	There is likely to be some effects from the proposed development and which the facility or airspace user has some capacity to accommodate.
Minor	There is not likely to be any effects from the proposed development, but the facility has some capacity to accommodate any that might arise.
Negligible	There is not likely to be any effects from the proposed development, but the facility has capacity to accommodate any that might arise.
No Change	There are no additional effects from the proposed development.

Table 2: Severity of Effect.

Magnitude	Criteria
High	Significant restrictions on aviation operations and procedures.
Moderate	Some restrictions on aviation operations and procedures.
Minor	Some minor restrictions on aviation operations or procedures.
Negligible	Very minor restrictions on aviation operations or procedures.
No Change	No Change from baseline conditions and no restrictions on aviation operations or procedures.

Table 3: Overall Significance of Effect applied to wildlife/bird strike assessment.

SEVERITY	PROBABILITY				
Significance of Effect	High	Moderate	Minor	Negligible	No Change
High					
Moderate					
Minor					
Negligible					
No Change					

(Where Probability does not refer to any specific species but to the probability that these small attenuation ponds could singularly give rise to increased bird activity, in general, which would affect Casement operations)

Red – The effect from the development is unacceptable under current risk management strategies and available mitigations are unlikely to reduce the effect to an acceptable level.

Yellow – Additional, or enhancements to existing, mitigations may be required to reduce the effect to an acceptable level.

Green – there will be no additional hazard or level of risk from the associated development, or which existing mitigations will already account for.

The attenuation ponds within this application are understood to be, in common with the others already permitted, designed to hold water in the event of heavy rain or flood events and to remain mostly dry for the majority of the time; they will not contain any pond or wetland planting. Considering the nearby water infrastructure, the ponds will result in much less standing water than other much larger nearby features and or any known flooding areas in the vicinity. It is not considered that the ponds will result in any increase in bird activity above that which already exists, or which the other water features in the area might already cause on a seasonal basis, but which should already be accounted for within existing wildlife control measures and mitigations.

This assessment represents WFAS' consideration of the available information and based on the guidance factors contained within national and international documentation it is considered that there would not be any increase in wildlife activity as a result of the proposed attenuation ponds and that, consequently, there can be no additional effect on, or additional hazard to, aviation operations at Casement Aerodrome.

Conclusions

ICAO provides standards and guidance on wildlife hazards at or in the vicinity of aerodromes and it is assumed that the DoD (IAC) already adopt those practises. It should be noted that the IAA Bird and Wildlife Strike Management at Aerodromes states that it is the aerodrome operator (*emphasis added*) who is responsible for the conduct of a wildlife hazard assessment on and in the vicinity of the aerodrome and which should be included within the aerodrome manual.

Under extant guidance it is the sole responsibility of the aerodrome operator to determine and manage its wildlife safeguarding policies both on and off the aerodrome and all of the relevant information required for determining the need for these conditions/mitigations should be contained within a WMP which will inform any decision on wildlife control measures.

The aerodrome operator should be maintaining a detailed data base of recorded wildlife and species both on and in the vicinity of the aerodrome and which should be used to determine the WMP and the mitigation strategies which are most effective depending on species, seasons etc. and which should include historic data and wildlife patterns compiled over a number of years.

WFAS have found no evidence to support any consideration that this singular, and in aviation terms relatively small-scale development and given the nature of that proposal, would lead to an increase in ground-based wildlife at Casement aerodrome which could be attributed singularly to the proposal.

Casement Aerodrome is in an area which contains much by way of existing water features and which are significantly larger and in areas which will be much more attractive, in terms of natural habitat, for birds or other wildlife.

Considering the nearby water infrastructure, the ponds will result in much less standing water than other much larger nearby features and or any known flooding areas in the vicinity. It is not considered that the ponds will result in any increase in bird activity above that which already exists, or which the other water features in the area might already cause on a seasonal basis, but which should already be accounted for within existing wildlife control measures and mitigations.

This assessment represents WFAS' consideration of the available information and based on the guidance factors contained within national and international documentation it is considered that there would not be any increase in wildlife or activity as a result of the proposed attenuation ponds and that, consequently, there can be no additional effect on, or additional hazard to, aviation operations at Casement Aerodrome.

It should be the ongoing responsibility of the Aerodrome Operator to monitor the ponds (along with other existing water features) such that, if any wildlife activity gives rise to any concern in respect of aviation in the future, that activity is recorded and assessed within the parameters of the aerodrome WMP such that the Aerodrome Operator can initiate effective mitigation/wildlife control measures.

Shane Savage
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Wind Farm Aviation Safeguarding Ltd

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Wind Farm Aviation Safeguarding Ltd

Wind Farm Aviation Safeguarding consultants share a single mission – to provide accurate, sensible and pragmatic aviation consultancy services to the developers considering projects in the vicinity of civil aerodromes and military airfields and to the wind farm and solar industries. Output ranges from initial aviation site reports and ad hoc consultancy through to provision of expert witness evidence at planning inquiries, based on at least 35 years operational or technical experience for each of our senior staff which comprises airspace managers, pilots, experts in radio propagation, project management and GIS mapping. We have been successful in negotiating with the Regulators, Defence Departments, Air Navigation Service Providers and with civil airports, to enable objections to developments to be removed and are established experts in the safeguarding of aviation.

Our consultants have provided, and continue to provide, project management and aviation safeguarding advice (on both technical and physical safeguarding) around the globe on physical safeguarding at airports and on wind and solar projects for clients including;

Energiekontor, West Coast Energy, BAYWA, e.ON, Gaelectric (Ireland), REG Windpower, SSE, RWE, RES, Vattenfall, Fisher German, Indaver (Ireland), Infinis, ARCUS, Microsoft, Coriolis, Freewind (Bahamas), MOJO Maritime, Glosten Assoc (USA), Guinness, British Solar Renewables, Infra-Red Capital Partners, Element Power (Ireland), Infinergy, Cenin, Engena and various local authorities across the UK and Ireland. This list is not exhaustive.

Since inception, and long before the recent extenuating circumstances, Wind Farm Aviation Safeguarding Ltd and its immediate predecessors, DBS Consulting /Wind Farm Aviation Consultants, have continually striven to reduce our carbon footprint and have implemented a comprehensive environmental management programme. We have, and will continue to be, committed to our community by being environmentally conscious and will do whatever we can to ensure the continued availability of natural resources for current and future generations. We recognize our responsibility to protect human health, the environment and natural resources and to continually strive to improve the environmental quality of our work. Our operation, with bespoke software designed to enable us to achieve our aims, ensures that we can do everything within assessments on a desk-based methodology. Our internal working practices have been routinely amended and honed to reflect our commitment to our principles of leaving a better world for the future generations. With our experience and contacts within the civil and military aviation spheres in the UK, Ireland and Europe we are able to minimise our travel, our expenditure and our impact on the planet. Over the last 12 years we have continually questioned how we do things and have become very adept at producing innovative solutions with minimum environmental impact and costs to the developer. That approach has enabled us to minimise our overheads, our energy consumption and our environmental impact and has enabled us to ensure delivery of supply to the highest possible standards, with dedicated, like -minded experts in their respective fields. Our ability to conduct full, detailed appraisals and assessments is something that our

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wide client base tell us that they appreciate and, from their comments and our own internal assessment, we understand that the lack of any imperative to travel to development sites and meetings represent a direct saving to those clients of an average of £10k per development. We can, and do, deliver the same meticulous results without impacting our environment and those savings are passed directly to developers in our tenders and fees.

The Author

Shane is a former helicopter pilot who spent over 27 years in the Royal Navy specialising in Airspace Management, Air Traffic Control (ATC) and Air Defence. His extensive experience includes an appointment within MOD Main Building responsible for Defence Windfarm Policy, RN Airspace Policy, regulatory issues and Defence ATC equipment programmes. He had several operational tours and with other appointments as the Senior Air Traffic Controller (SATCO) at both Plymouth Military Radar and at the military airfield at RNAS Culdrose, at that time one of the busiest military airfields in Europe. His naval career culminated in leading both the ATC and Fighter Control specialisations as Head of Operations Support to the Fleet Air Arm when he was responsible for aviation infrastructure including airfields, radars and radio sites as well as being the naval Safeguarding Authority for naval aviation, airfields and radars in the UK and abroad and the Sponsor for offshore Danger Areas.

In 2011 he formed Wind Farm Aviation Consultants Ltd and latterly has been working as lead consultant of a group of associates on projects throughout Europe and globally. He has assessed over 2000 development proposals in the UK, Ireland and globally, in terms of aerodrome and technical safeguarding. He is currently the Senior Consultant and a Director of Wind Farm Aviation Safeguarding Ltd.

He is has been a member of the following working groups and policy bodies:

- UK CAA National Air Traffic Management Advisory Committee
- UK CAA/MOD National Flight Safety Committee
- CAA Flexible Use of Airspace Policy Group
- UK National Air Traffic Management Advisory Committee
- UK Airprox Board
- UK NATS Joint Future Airspace Design Team
- UK Airspace Strategy Steering Committee
- UK National UK IFF and SSR Committee
- UK MOD Wind Farm Policy Group
- UK Military Users Airspace Co-ordination Team
- UK MOD Airspace Requirements Review Team
- UK MOD Air Command and Control Programme Delivery Board

- UK MOD ATC Aviation Safety Board
- UK CAA Danger Areas User Group
- UK MOD UAV Airspace Design Working Group
- USA Joint Forces Command Executive Steering Committee on Air Battlespace Management, Close Air Support and Digital Data links
- UK MOD Mode S Working Group
- UK Low Flying Policy Group

Represented UK interests on several international policy groups at Eurocontrol and NATO.