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Cardiff Airport

Safeguarding Assessment for Planning Application 2019/00871/OUT (CR)

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Contents

The Application

This is a hybrid application comprising of an outline application for the demolition of existing buildings and erection of 44.75ha Class B1/B2/B8 Business Park, car parking, landscaping, drainage infrastructure, ecological mitigation and ancillary works (all matters reserved aside from access) within Area A and a full application for change of use from agricultural land to country park (Use Class D2) within Area B, Planning Application No. 2019/00871/OUT (CR) on land at Model Farm, Port Road, Rhoose.

The site lies adjacent to the eastern corner of the airfield, approximately 245 metres from the Runway 30 threshold at Cardiff Airport (CWL).

The Current Site

The site comprises heavily improved agricultural land divided by managed hedgerows and is designated as a 'Mosaic' landscape acknowledging the blocks of small woodland and small wooded valleys of Whitelands Brook and Bullhouse Brook. A farmhouse and a complex of mainly large agricultural buildings used for livestock and the storage of machinery are located in the northern part of the site.

Cardiff Airport dominates the landscape immediately to the west of the application site, comprising of managed open grassland, areas of hard standing and built environments.

Stages of Development

Construction Stage

The construction stage of a development of this nature will include largescale earthworks, including the clearance of vegetation and the movement of topsoil, which has the potential to increase the birdstrike risk at CWL by providing ephemeral feeding opportunities for hazardous birds[1] by exposing an exploitable invertebrate food source.

This stage of works also has the potential to disturb existing populations of hazardous birds such as corvids (members of the crow family) and Wood Pigeons that may frequent the existing woodland. As such, disturbance during this initial stage may displace birds which may lead to an increase in the birdstrike risk. It is noted that the Ecology Surveys Report only references small bird species, however, reference to wildlife control logs evidence healthy populations of corvids and other hazardous arboreal avian species in proximity to the airport.

Due to the movement of heavy plant, or due to temporary profiling of the site, there may be occasions during wet weather, where ponding occurs, providing drinking/bathing attractants for birds.

When the site is fully operational the human and heavy plant presence may be enough to deter birds from the area. However, during non-operational times, when the area is quiet birds can exploit this to

[1] Large and / or flocking species capable of causing damage of aircraft.

feed and roost, therefore, the site is likely to be attractive hazardous birds at different times of the day potentially providing fluctuations in birdstrike risk.

In addition, a busy construction site will need to have an effective house-keeping policy in operation to ensure that all waste, including putrescible (food) waste, is responsibly disposed of in fully lidded bins to ensure that scavenging species of bird are not attracted to the site.

The application should include condition that a construction phase Bird Hazard Management Plan (BHMP) is provided, detailing what mitigation measures will be in place, to ensure there is no increased risk of birdstrike at CWL. The plan should include threshold numbers of target species (that will initiate mitigation) and failure criteria to assure the efficacy of the plan. Such a plan will need to be delivered and overseen by trained on-site staff, in close cooperation with CWL.

The Built Environment

'Design Principle 5' and 'Illustrative Site Sections', contained within the 'Design Brief', provide details of the building design. The proposals include 12 industrial units of varying sizes with the largest having a floorspace of approximately 18,000m^2, all of which are shown to have a shallow-pitch roof design. Most of the units will be of a one or two-storey design, along with two units at the north-west corner of site which will have four or five storeys.

During construction of such large buildings, it is common for a steel framed structure to be erected which can attract hazardous species including (but not limited to) Feral Pigeons, corvids and Starlings as frameworks offer safe areas to loaf (rest during the day) and roost at night, thereby potentially causing flightlines to and from the site.

It is encouraging that the roof design supplied in the 'Illustrative Site Sections' appears to be of a shallow-pitched type as these are less attractive to hazardous birds than flat-roofs where the design provides a highly attractive habitat for hazardous birds, particularly 'large' gulls who will look to utilise these areas for loafing, roosting, and breeding purposes. However, birds may still attempt to exploit these roofs, as they provide safety and warmth, ideal for loafing, breeding, and roosting. Although breeding on a shallow-pitched roof can be more problematic, when compared to flat-roofs, it is still possible, particularly with species such as Herring and Lesser Black-backed Gulls, that can anchor nests on protrusions or against vents etc.

Therefore, to approve this section of the development, an in perpetuity BHMP will be required to ensure that roofs on this site do not attract and support breeding and roosting hazardous birds.

Landscaping

The document titled 'Biodiversity Management Strategy' states that:

[The approach to landscape and nature conservation within the development area has been to retain and enhance key features as far as possible.]

Proposals within the 'Biodiversity Management Strategy' and as detailed in 'Design Principle 3 – the Green Infrastructure Strategy' include the creation of new areas of woodland and hedgerow which are intended to be added to the existing vegetation on the site for the 'long term provision and maintenance of biodiversity' including tree/shrub species which will 'maintain autumn fruit for birds and mammals'.

Increasing the provision of attractants for hazardous birds should be avoided in proximity to the airport, to align with aerodrome safeguarding objectives and industry best practice guidance.

It will be important to ensure that the planting palette and spacings are selected and designed to reduce the potential for new woodland planting to attract and support significant populations of hazardous arboreal species such as corvids, pigeons and wintering thrushes.

There are also several areas through the site which are labelled as 'wild bird cover and seed crop'. Any areas where seed may be available on this site would have the potential to attract hazardous birds, particularly Wood Pigeons and Corvids which may, in turn, create hazardous flightlines over the airfield.

These proposals represent 'irresponsible development' in the context of air safety and should be omitted from the plan.

Furthermore, it is intended for new planting to connect to existing areas of woodland and hedges creating wildlife/ecology corridors throughout the site which will have the potential to increase the population, and associated movements, of hazardous birds in this area.

Assurances will need to be obtained from the developer that any development of wildlife corridors are designed to be parallel to the airport; thereby minimising the potential to draw hazardous birds closer to the critical airspace of the airport.

Drawing number ECO01271-002 provides details of Proposed Additional Mitigation and Wildlife Enhancement, highlighting several ecological areas including two sections of grassland managed specifically to attract Skylarks, a small (non-hazardous) grassland species which frequents airfields throughout the UK who adopt a long grass policy (LGP)[2] for flight-safety purposes. By maintaining the grassland at a height of between 150 – 200mm, hazardous species such as corvids, gulls and waders are deterred, as they prefer shorter swards. Therefore, this aspect of the development should not increase the birdstrike risk at CWL, as long as the maintenance programme put in place to maintain the grassland in line with the broad LGP objectives.

[2] T. Brough and C. J. Bridgman (1980) An Evaluation of Long Grass as a Bird Deterrent on British Airfields, Journal of Applied Ecology, Vol. 17, No. 2 (Aug., 1980), pp. 243-253

Amenity planting throughout the development should ideally include only small trees with open canopies such as *Acer* species, with any smaller plants / shrubs being non-berry/fruit bearing species such as *Acorus* and *Alchemilla*. Proposed amenity grassland should be maintained in line with that of LGP to reduce its attractiveness to hazardous species.

The landscaping scheme for this development has the potential to increase birdstrike risk at CWL (see comments on planting palette above). As such, an agreement on the landscaping scheme will need to be reached.

Sustainable Urban Drainage (SuDs) and Other Drainage

The Design and Access Statement Part 2, as contained in the Planning Application Details for 2019/00871/OUT, states that:

[*the existing topography provide the opportunity to create a SuDS and drainage solution along the southern boundary of the site with enhanced ecological qualities*].

Standard S5 – Biodiversity in 'Sustainable Drainage Assessment Part 1' also states:

[Standard S5 addresses the design of SuDS to ensure, where possible, they create ecologically rich green and blue corridors in developments and enrich biodiversity value by linking networks of habitats and ecosystems together. Biodiversity should be considered at the early design stage of a development to ensure the potential benefits are maximised.

- *The design of the surface water management system should maximise biodiversity benefits.]*

Increasing biodiversity through the proposed SuDS, or any open areas of standing water, should be avoided, due to the potential to attract hazardous species, including Mallard, feral geese, and Grey Heron, which may increase the birdstrike risk.

There are at least three relatively large SuDS attenuation ponds proposed. These should ideally be replaced with underground storage otherwise effective mitigation, such as proofing, along with a robust maintenance program, must be in place to prevent birds from accessing these areas.

Swales and combined ecology/drainage corridors are planned throughout the site. Swales, as with any other SuDS ponds, have the potential to attract and support hazardous birds if they hold open water for any substantial amount of time.

[The proposed attenuation SuDS structures (storage tanks, basins) will be sized to store runoff from the 1 in 100 annual probability rainfall events including a 30% increase in rainfall intensity in order to allow for climate change and will comply with local bird strike mitigation and drain down time requirements.]

For any area where open water maybe present on site at any time, the drain-down times, even after a 1 in 100 annual rainfall event, should be so that they drain down completely within 48 hours or this should be seen as a failure of the system due to the attractant it creates for hazardous birds. However, figures shown in Appendix F – Micro Drainage Source Control Storage Volume Calculations in

'Sustainable Drainage Assessment Part 1' appear to show that after extreme storm events it could take up to 96 hours for standing water to fully drain-down.

Assurances should be sought from the developer that draw-down times for flood events are no longer than <96 hours, to prevent the presence of longer-term wetland attractants for hazardous wetland species.

Only an indicative SuDS maintenance plan is included in the documents, 'Table 7: Illustrative Maintenance Schedule', with an agreed maintenance programme yet to be agreed. This should be requested by CWL for their approval.

To ensure that SuDS remain fully effective, a robust, in perpetuity, maintenance programme should be in place.

The site design proposes an area of 'wetland habitat creation'. Wet woodland, at a suitable distance from the airport can, to some extent, be managed to deter large waterfowl species from being attracted. However, these sites can still attract and support the smaller waterfowl species such as Mallard which then have the potential to increase the birdstrike risk at CWL due to these birds' movements onto, or over, the airfield. The trees within this habitat can also support colonies of large waterbirds such as Grey Heron, therefore, this habitat would not be recommended at this location.

Street Lighting

Traditional street lighting is proposed on the development.

At this location all installed street lighting should be fitted with bird proof spikes along the top section of the unit with it being important to note that this should include both the lighting head and full length of the arm.

Post Construction

The applicant should show a commitment to the long-term wildlife hazard management mitigation discussed above, with the development and implementation of a temporary BHMP for the construction phase of the development and in perpetuity BHMP's for the built environment, landscaping and SuDS aimed at reducing the wildlife attractants to as low as practically possible in agreement, and ongoing consultation, with CWL.

Conclusion

Without appropriate mitigation this development has the potential to increase the birdstrike risk at Cardiff Airport through the provision of ephemeral attractions resulting from the construction phase of the project and potentially permanent / seasonal attractants resulting from both the proposed built and natural environments.

However, as long as the applicant addresses the issues identified in this assessment, and provides the necessary mitigation, summarised below, then it will be possible to ensure that Planning Application

2019/00871/OUT (CR) does not have the potential to significantly increase the birdstrike risk at Cardiff Airport in line with aerodrome safeguarding objectives.

Mitigation

- The application should include condition that a construction phase Bird Hazard Management Plan (BHMP) is provided, detailing what mitigation measures will be in place, to ensure there is no increased risk of birdstrike at CWL. The plan should include threshold numbers of target species (that will initiate mitigation) and failure criteria to assure the efficacy of the plan. Such a plan will need to be delivered and overseen by trained on-site staff, in close cooperation with CWL.
- An in perpetuity BHMP will be required to ensure that roofs on this site do not attract and support breeding and roosting hazardous birds.
- It will be important to ensure that the landscaping planting palette and spacings are selected and designed to reduce the potential for new woodland planting to attract and support significant populations of hazardous arboreal species such as corvids, pigeons and wintering thrushes.
- 'Wild bird cover and seed crop' planting should be omitted from the plan, as its aims conflict with those of aerodrome safeguarding.
- Assurances will need to be obtained from the developer that any development of wildlife corridors are designed to be parallel to the airport; thereby minimising the potential to draw hazardous birds closer to the critical airspace of the airport.
- Increasing biodiversity through the proposed SuDS, or any open areas of standing water, should be avoided, due to the potential to attract hazardous species, including Mallard, feral geese, and Grey Heron, which may increase the birdstrike risk.
- Assurances should be sought from the developer that draw-down times for flood events are no longer than <96 hours, to prevent the presence of longer-term wetland attractants for hazardous wetland species.
- To ensure that SuDS remain fully effective, a robust, in perpetuity, maintenance programme should be in place.
- At this location all installed street lighting should be fitted with bird proof spikes along the top section of the unit with it being important to note that this should include both the lighting head and full length of the arm.

Summary

In order to ensure that the application does not have the potential to significantly increase the birdstrike risk at CWL the applicant should commit to the long-term wildlife hazard management mitigation discussed above, with the development and implementation of a temporary BHMP for the construction phase of the development and in perpetuity BHMP's for the built environment, landscaping and SuDS aimed at reducing the wildlife attractants to as low as reasonably practicable in agreement, and in ongoing consultation, with CWL.

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