

Ashleigh House,
John F Kennedy Road,
Dublin 12

Tel / Fax: 01 6208135
contact@ckarchitecture.ie
www.ckarchitecture.ie

To:
Planning Department
South Dublin County Council,
County Hall, Town Centre
Tallaght
Dublin 24

10/10/2022

**Noise Assessment for Additional Information
Planning Reg. Ref.: SD22A/0300**

Decision Order Number: 1121 Date of Decision: 01-Sep-2022

Register Reference: SD22A/0300

Registration Date: 08-Jul-2022

Applicant: Robert Flanagan

Development: 2 storey, 2 bedroom, end of terrace house to side of existing dwelling; a new vehicular access from Kilcarberry Close; all related works.

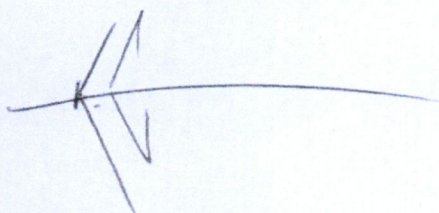
Location: 5, Kilcarberry Close, Clondalkin, Dublin 22.

Application Type: Permission

Report prepared by:

Christophe Krief *MCABE MCIAT MCIQB C.Build Eng. BA MSc Arts& Arch*

With the assistance of Auryan Mahon and Vadym Kyselov Msc Arch



1) General:

The following requirements were issued by the planning department in the form of Additional Information:

"6. The area is located within a noise significant boundary (Casement). Policy IE13 seeks to discourage noise-sensitive developments in the immediate vicinity of airports and aerodromes. In accordance with IE13, objective 1, noise sensitive uses should be subject to an appropriate noise assessment and mitigation measures to protect residential amenity. The applicant is requested to submit a noise assessment and appropriate mitigation in line with IE13 objective 1."

We conducted this assessment in line with Policy IE13 and Section 11.8.6 from the South Dublin Development Plan 2022-2028 which are inserted below

"11.8.6 Airport and Aerodrome - Noise

The areas within which aircraft noise may be significant in the vicinity of the airports and aerodromes is indicated on the Development Plan Maps and these noise significant areas may be subject to updating. For residential development and other noise vulnerable land uses, an appropriate noise assessment with accompanying mitigation measures to protect residential amenity should be submitted.

Policy IE13: Noise

Discourage noise-sensitive developments in the immediate vicinity of airports and aerodromes.

IE13 Objective 1:

To limit residential development and other land uses impacted by noise, such as nursing homes, schools, hospitals and conference centres within the Noise Significant Area Boundary delineated for Casement and Weston (See County Development Plan Index Map and relevant area maps) and ensure that any noise sensitive uses are subject to an appropriate noise assessment and mitigation measures to protect residential amenity"

2) The site and its location

The Site is located in a low density residential area Objective RES: To protect and/or improve residential amenity. It is located at approximately 2 kilometres to the North-East of the Casement Aerodrome (Baldonnel). Please refer to Map 1 in our following annex for the exact location of the site and the aerodrome.

South Dublin County Development Plan 2022-2028 includes for Objective RES-N: To provide for new residential communities in accordance with approved area plans. It is noted that an area with this zoning is located between the site subject of the present planning application and the Casement Aerodrome (Baldonnel). Please refer to Map 2 in our following annex for more details.

The site location is within a residential zone area

3) Noise level assessment

“Development in the environs of Casement Aerodrome may be subject to a high level of noise from aircraft operating in the vicinity of the aerodrome. SDCC should take account of the effects of aircraft activity when considering residential or other developments susceptible to noise.”

63 dB is the point where the Guidance in the UK is for airport operators to offer acoustic insulation to noise-sensitive buildings, consequently it is commonly used as a threshold for noise mitigation.

Noise level data is not available for noise pollution generated by the Casement Aerodrome (Baldonnel).

Considering the runway direction from the aerodrome and comparing with data provided by Dublin airport (larger planes), we can assume that maximum noise levels generated by the airport on the proposed dwelling will be between 55 and 59 decibels and therefore below the 63 dB UK threshold for noise mitigation.

4) Design proposal for noise reduction

Noise infiltrates dwellings through walls, windows, roofs and ventilation openings. Sound waves pass readily through many of the same openings in building envelopes that allow air infiltration.

In order to limit the impact of external noise on the proposed dwelling, the following design recommendations are proposed:

- The use of heat recovery ventilation will limit the number of openings in the dwelling fabric and will contribute to limiting external sound penetration in the house
- The use of triple-glazing will offer a greater sound protection to the dwelling. Typical triple glazing will reduce approximately 40 decibels from external noise compared to approximately 30 decibels for double glazing.
- While concrete is not appropriate to insulate from impact sounds, it provides good insulation for airborne sounds. Walls built with rendered solid concrete blocks would provide approximately 50 decibels reduction from external noise. Timber frame walls insulated with mineral wool and lined with gypsum boards can provide similar sound insulation levels.
- In order to limit external sound infiltration from the roof, mineral wool insulation should be provided at ceiling level.
- A high level of air tightness in the construction will also increase the level of sound protection. A high level of air tightness will require the use of heat recovery ventilation.

5) Conclusion

An acceptable level of noise within a bedroom should be 25 decibels or lower. The design recommendations above should offer a similar comfort.

The proposed dwelling site is located further from the aerodrome than lands currently zoned for residential developments in South Dublin County Council Development Plan and is therefore less affected by sound nuisance than future dwellings to be built on these lands.

Annex

Map 1



Casement
Aerodrome (Baldonnell)

Site Location

Map 2



Objective RES-N
To provide for new residential
communities in accordance
with approved area plans

Site Location

Casement Aerodrome (Baldoonnel)