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***MICROCLIMATE IMPACT ASSESSMENT REPORT***

***For***

***PROPOSED RESIDENTIAL DEVELOPMENT MALAHIDE ROAD / CLARE HALL***

***Prepared for Claregrove Developments Ltd  
GEM Group, Athlone Road, Longford, Co Longford***

Report Ref 26751-2  
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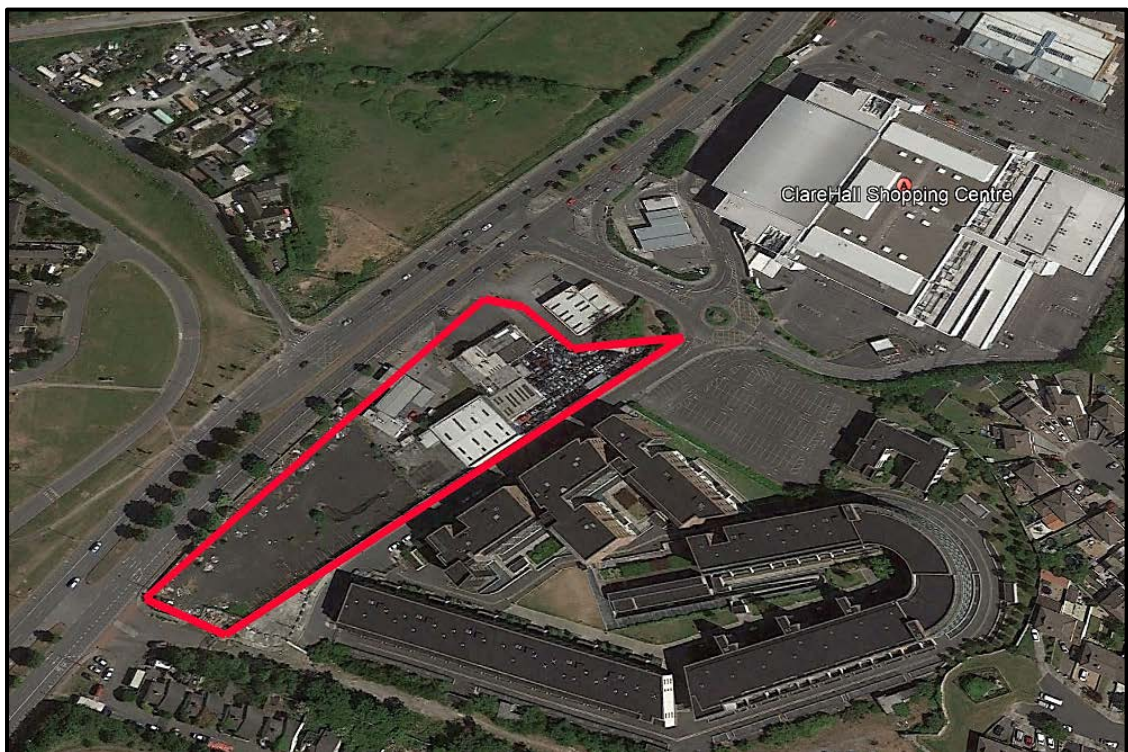
## 1.0 INTRODUCTION AND SCOPE

This micro-climate impact assessment report was prepared on behalf of Claregrove Developments Ltd in respect of a residential development at Malahide Road, Dublin 17. The purpose of the assessment is to evaluate the risk of elevated wind speeds / microclimate impacts arising as a result of the proposed development.

## 2.0 SITE AND PROJECT DESCRIPTION

The site is located on the Malahide Road adjacent to Clare Hall Shopping Centre and borders the Malahide Road (R107) as shown in Figure 1 below. There is a busy Circle K garage on the site between the proposed development and the Shopping Centre. Buildings in the vicinity of the site are generally low-rise to the north west but an existing multi-storey development lies immediately south / southeast of the site, and the Clare Hall Shopping Centre is located to the northeast.

**Figure 1** Site location and indicative boundary



The development will involve the following key elements relevant to this assessment report:

- *Demolition of all existing structures on the site;*

- *Provision of 331 no., in two no. blocks (Block A to the south and Block B to the north), ranging in height from 8 to 10 no. storeys (including ground and mezzanine floor level);*

### **3.0 ASSESSMENT METHODOLOGY**

The methodology adopted in this assessment is summarised as follows:

- Establish the existing baseline microclimate classification for the site;
- Evaluate the potential for the proposed development to lead to amplified wind speed impacts;

The study was undertaken with reference to the following Guidance which are widely used in these types of assessments in Ireland:

- Lawson, TV, 2001, 'Building Aerodynamics', Imperial College Press,
- The UK Buildings Research Establishment (BRE) Digest 520: Wind Microclimate around Tall Buildings; BRE (2011).

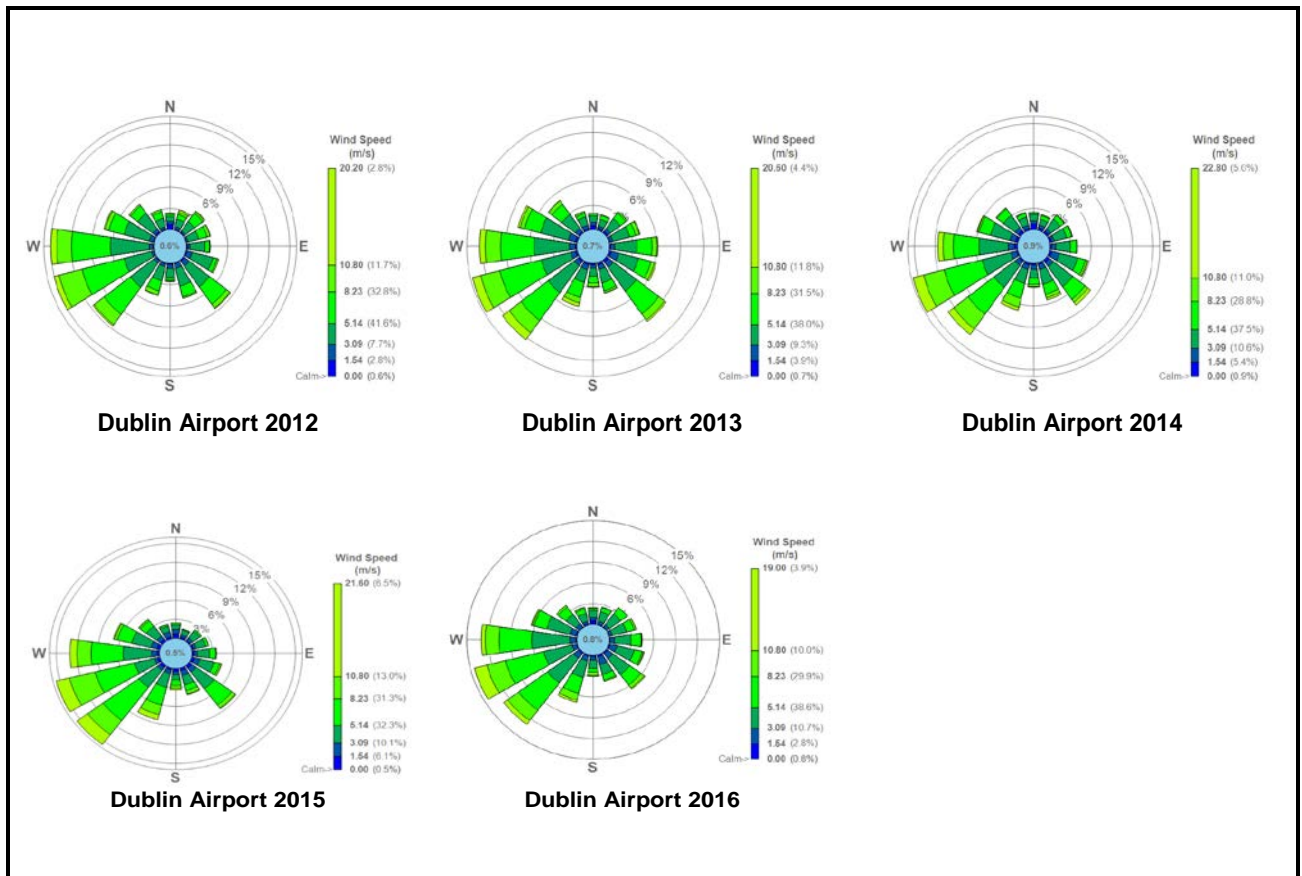
### **4.0 BASELINE ENVIRONMENTAL CONDITIONS**

There is no continuous meteorological monitoring on the site but the general guidance on selection of meteorological data for impact assessments is to choose representative data, recently acquired, which best represents conditions at the site. Met Éireann operate a Synoptic Network of weather stations one of which is located at Dublin Airport which is located approximately 4km northwest of the site. Wind speed and direction data for Dublin Airport would be reliable indicators of conditions at the site.

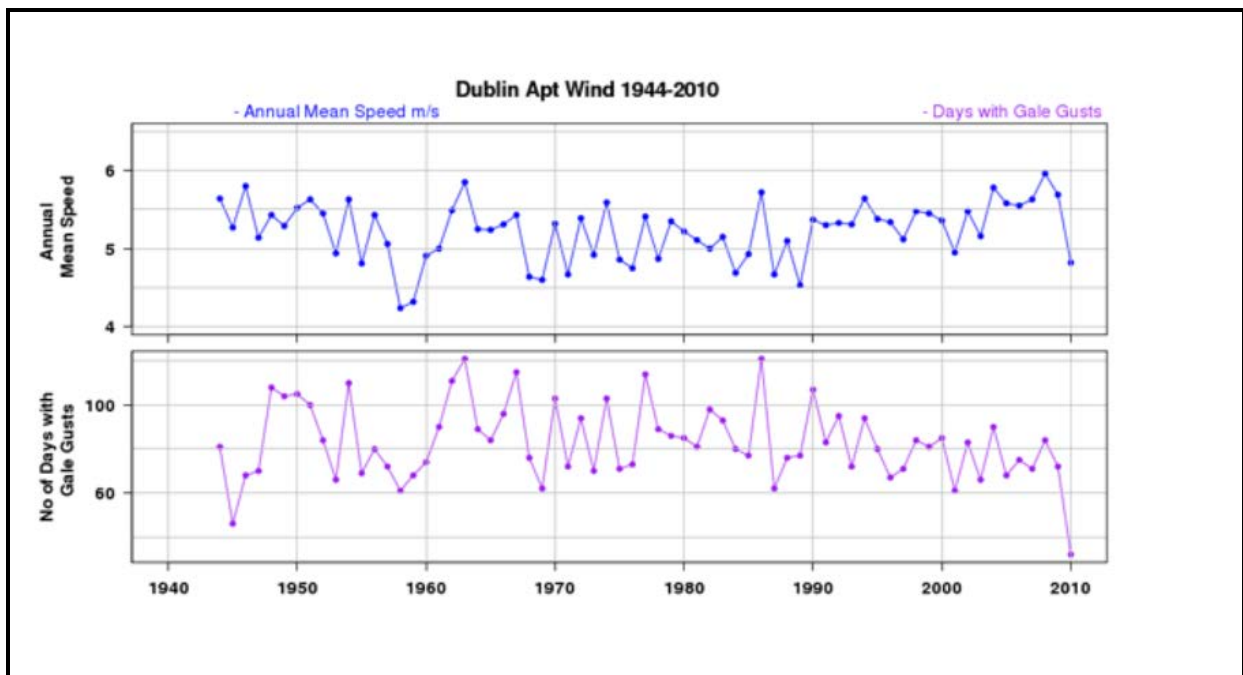
The windroses for Dublin Airport are presented in Figure 2 for each of the years from 2012 to 2016. The dominant wind direction for Dublin Airport is from the southwest quadrant. The wind speed is below 5.14m/s for 64% of the time, and the average long-term wind speed over the period 1985 to 2010 is 5.3m/s (Figure 3).

These conditions are considered to be representative of conditions at the site given the close proximity to Dublin Airport. The site is not particularly exposed, is not in close proximity to the sea and there are no especially tall buildings nearby,

**Figure 2** Windroses for Dublin Airport 2012 - 2016



**Figure 3** Long term Wind speed for Dublin Airport (Met Eireann)



## **5.0 IMPACT ASSESSMENT**

The existing microclimate is unremarkable and the site is not exposed to any significant local influences. The building will extend to between 8 and 10 storeys above ground level with a maximum height of 33.5m above ground level. Due to the height, the building will not lead to a significant acceleration of wind speeds in the area. In particular the following are factors relevant to the assessment:

- The height of the buildings are less than 33.5m;
- The height to width ratio (in the dominant wind direction axes) is 0.83 which is significantly higher than the threshold 0.4 when ground level impacts become very significant ( Lawson); this ratio is also greater than 0.7 which means that wind flow down to street level is negligible. These thresholds are exceeded in all directions.

The assessment conclusion is therefore that the proposed development will not lead to elevated wind speeds and in fact will have an imperceptible impact on microclimate in the area, which will remain the same as the existing conditions at the site.