

Appendix: Wind Microclimate

Annex 1: Policy and Guidance

Annex 2: Technical Appendix

Legislation and Planning Policy Context

National Policy

National Planning Policy Framework (2021)¹

- 13.1** The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced. It states that the purpose of the planning system is to contribute to the achievement of sustainable development; and that the planning system must meet interdependent overarching objectives summarised as: an economic objective, a social objective and an environmental objective.
- 13.2** There are no policies or statements that are directly related to the wind microclimate, although the promotion of high-quality built environments was emphasised in the NPPF. For instance, paragraph 8 describes environmental objectives for sustainable development:
- c) “[...] to protect and enhance our natural, built and historic environment [...] and mitigating and adapting to climate change”.
- 13.3** Additionally, paragraph 130 states the following:
- “f) Create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users”.

National Planning Practice Guidance (2019)²

- 13.4** The NPPG was published in November 2016 to support the NPPF and was updated in October 2019. There is no guidance within the PPG related to tall buildings and wind microclimate issues.

Regional Policy

The London Plan 2021 – The Spatial Development Strategy for Greater London³

- 13.5** The London Plan 2021 is the Spatial Development Strategy for Greater London. It places importance on the creation and maintenance of a high-quality environment for London. The following policies apply specifically in relation to wind microclimate:
- Policy D3 Optimising site capacity through the design-led approach (Para 3.3.8), states that:
 - “Buildings [...] massing, scale and layout [...] should complement the existing streetscape and surrounding area. Particular attention should be paid to the design of the parts of a building or public realm that people most frequently see or interact with in terms of its legibility, use, detailing, materials and location of entrances. Creating a comfortable pedestrian environment with regard to levels of [...] wind”.
 - Policy D8 Public realm, Development Plans and development proposals should, states that:
 - “Consideration should also be given to the local microclimate created by buildings, and the impact of service entrances and facades on the public realm.”
 - “Ensure that appropriate shade, shelter, seating [...] with other microclimatic considerations, including temperature and wind, taken into account in order to encourage people to spend time in a place.”
 - Policy D9 Tall buildings: Environmental impact, states that:
 - “Wind [...] around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open spaces, including water spaces, around the building”;
 - “Air movement affected by the building(s) should [...] not adversely affect street-level conditions”.
 - Policy D9 Tall buildings: Cumulative impacts, states that:

- “The cumulative visual, functional and environmental impacts of proposed, consented and planned tall buildings in an area must be considered when assessing tall building proposals and when developing plans for an area. Mitigation measures should be identified and designed into the building as integral features from the outset to avoid retro-fitting.”

Shaping Neighbourhoods: Play and Informal Recreation SPG (2012)⁴

- 13.6** In the Shaping Neighbourhoods SPG in Section 4.48 (under Step B5: What types of play space should be provided and how should existing play provision be improved?) the following statement emphasises on wind microclimate:

- “Playable spaces should be properly integrated into new development and the existing context [...] If [...] windy spaces are utilised, they should be made worthy through innovative design.”

Local Policy

Tower Hamlets Local Plan 2031⁵

- 13.7** Policy S.DH1: Delivering high quality design, states that:

- “Development is required to meet the highest standards of design, layout and construction [...]. To achieve this, development must: [...] use design and construction techniques to ensure that the development does not result in unacceptably harmful impacts arising from [...], wind.”

- 13.8** Policy D.DH6: Tall buildings, states that:

- “Developments with tall buildings are required to [...] demonstrate that the development does not adversely impact on the microclimate and amenity of the application site and the surrounding area”.

- 13.9** Section 8.61, states that:

- “Tall buildings can significantly impact the quality and safety of the public realm (for example, [...] through generating adverse micro-climatic conditions, such as wind funnelling). They may [...] undermine the quality and value of adjacent developments. In low-or-medium rise residential neighbourhoods, tall buildings [...] have a negative impact on amenity and views.”

- 13.10** Section 8.66, state that:

- “Proposals involving tall buildings will need to demonstrate how any adverse impacts on the microclimate will be mitigated in relation to wind [...] Buildings over 30 metres in height and/or substantially taller than the surrounding area and/or over 150 units must be tested against the industry standard Lawson criteria in relation to wind. The testing of the following scenarios will be required as part of the planning application.
 - Baseline (i.e. the situation at the time of submission).
 - The proposed development without mitigation/landscaping.
 - The development with surrounding cumulative developments without mitigation/landscaping.
 - The development with the inclusion of mitigation/landscaping.
 - The development with surrounding cumulative developments with the inclusion of mitigation/landscaping.
 - Specific details on the required mitigation measures must be provided, including where and how these measures will be implemented.
 - It is essential that any required mitigation measures are tested as part of the application. This is to ensure that the mitigation is adequate, and can therefore be relied upon. The mitigation must be implemented prior to occupation of any part of the development and retained for the duration of the development.”

- 13.11** Section 14.25, states that:

¹ Department for Communities and Local Government, 2021. Revised National Planning Policy Framework. London. HMSO.

² Ministry of Housing, Communities & Local Government, 2019. Planning Practice Guidance

³ Greater London Authority, 2021. The London Plan. London. GLA

⁴ Greater London Authority, 2012. Shaping Neighbourhoods: Play and Informal Recreation Supplementary Planning Guidance. London. GLA

⁵ London Borough of Tower Hamlets, 2020. Tower Hamlets Local Plan 2031. London. LBTH.

- “Due to the environmental importance of trees, [...]. Their location must be carefully considered to ensure there is no adverse impact on [...], wind effects.”

High Density Living SPD⁶

13.12 Section 4: Design Guidelines, states that:

- “Healthy neighbourhoods:
 - The scale and form of high density developments can have significant environmental impacts, including [...] wind tunnels. Orientation of communal spaces following environmental parameters and design mitigation measures can create more comfortable and enjoyable environments.”
- References Intend to Publish London Plan Version 2019 Policy D8 – Public Realm and Tower Hamlets Local Plan 2031 Policy D.DH6 – Tall Buildings, both of which specify that a development does not adversely affect the local microclimate.
- “Design guideline AB.17:
 - The massing, orientation and design of the building and the location of public spaces contributes to a high quality urban microclimate promoting comfort and well-being. It should be designed to achieve good levels of [...] wind [...] comfort.”
- “Design guideline AB.17, Wind:
 - High velocity winds in urban corridors or downdraughts generated by high rise buildings can significantly affect pedestrian comfort.”
- “Wind, Design guideline AB.19:
 - Buildings over 30 metres in height and/or substantially taller than the surrounding area and/or over 150 units must be tested against the industry standard Lawson criteria in relation to wind (Local Plan D.DH6).
 - The test might require the need for mitigation measures. Dependant on context and typology this could be achieved through:
 - offset taller elements so the lower element (podium or courtyard block) serves to deflect wind
 - when wind mitigation cannot be achieved through the building massing recess entrances or use canopies to deflect wind from entrances or adjacent open spaces, the design should be integrated into the building language and materiality or consider recess
 - if wind cannot be deflected and impacts public realm, podiums or rooftops use trees or street furniture such as a pergola or large planter”
- Healthy Neighbourhoods
 - Tall buildings can create significant downdraught and localised high windspeeds at ground levels. This can significantly affect pedestrian comfort and safety. The effects must be assessed with an appropriate modelling technique and mitigated.”
 - 20% of residents [...] who live around high density buildings do not think the external environment around them is pleasant. 32% feel it has worsened wind.”
- “Design guideline CS.15:
 - Rooftop play spaces will only be acceptable if:
 - Wind assessment demonstrates low impact levels.”
- “Design guideline H.8:
 - Where a wind assessment is required this should assess balcony design. Depending on findings design strategies could include:
 - Solid balustrades
 - Semi-recessed balconies
 - Inset balconies
 - Winter gardens

- “Design guideline H.9:
 - If winter gardens are provided they should:
 - provide effective enclosure from wind.”

⁶ London Borough of Tower Hamlets, 2021. High Density Living Supplementary Planning Document. London. LBTH.