

5.7 Wind Microclimate

5.7.1 Chapter 11 of the 2013 ES reported the likely significant wind microclimate effects of the development on existing receptors during the construction and operational phase.

5.7.2 This Section has been prepared in order to outline the key changes in relation to the Consented Scheme and to identify changes to the findings and conclusions associated with the 2013 ES.

Legislation, Planning Policy and Guidance

5.7.3 A review of UK legislation, planning policy and guidance relevant to the proposals has been previously undertaken as part of the 2013 ES. The following policy documents have been updated since 2013:

- 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, March 2021;
- The National Planning Policy Framework was revised on 17 December 2023 and sets out government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous National Planning Policy Framework published in March 2012, revised in July 2018, updated in February 2019, revised and updated in September 2023;
- The Royal Borough of Greenwich Unitary Development Plan Adopted 2006, has been superseded by the Royal Greenwich Local Plan: Core Strategy with Detailed Policies, July 2014; and
- The London Borough of Newham Unitary Development Plan, June 2001 has been replaced by Newham 2027, Newham's Local Plan.

5.7.4 Whilst these policy documents have been updates, the policy context which was current at the time of the 2013 ES has been maintained and is therefore still valid and so no further information is submitted as part of this ES Addendum.

Scheme Changes

- Increase height of the zones that contains Buildings 1, 2, 3 and 4 in Block D by 3 meters;
- Increase height of the zones that contains Buildings 3 and 4 in Block K by 3 meters;
- Increase height of the setback along Duke of Wellington Avenue of the zones that contained Buildings 1 and 2 in Block D by 3 metres;
- The setback along Beresford Street of the zones that contained Buildings 3 and 4 in Block K is removed, bringing the height up by 9 meters;
- Increase height of the zone that contains Building 5 in Block K by 3.5 meters;
- In the minimum height's drawings, the description of areas between blocks D1-D2 and D4-D5 have been excluded;
- No changes to the height of the zone that contains Building 2 in Block K, Building 1 in Block K has been removed;

- The footprint of Plots D and K has undergone slight modification, and the coordinates have been adjusted accordingly;
- The vehicular entrance has been modified; and
- The parking area in Block D has undergone significant changes.

5.7.5 These amendments have been reflected in the model used for the updated assessment provided in the sections below.

Assessment Methodology and Significance Criteria

5.7.6 The following section outlines the methodologies applied to identify and assess the potential impacts and likely effects to result from the Proposed Development.

Extent of The Study Area

5.7.7 A 3D model of the proposed amendments and the surrounding area up to a 400m radius from the centre of the site were included.

Method of Baseline Collection

5.7.8 A new baseline scenario has been assessed to incorporate any changes to the surrounding buildings since the 2013 ES.

Method of Assessment

Demolition & Construction Phase

5.7.9 The method of assessment of the demolition and construction phase would be the same as in the 2013 ES Chapter. A qualitative assessment has been undertaken and is based on professional judgement informed by an assessment of the background wind microclimate in the area and RWDI's experience of assessing wind in the built environment.

5.7.10 The residual effects reported for the demolition and construction phases of the proposed amendments are considered to be temporary, whereas effects outlined in the assessment for the complete and occupied Development are permanent.

Operational Phase

5.7.11 The amended maximum parameter massing of the Development has been assessed in the context of existing and consented cumulative surrounds and are discussed within this addendum.

Significance Criteria

5.7.12 There would be no changes to the method of assessing significance or the magnitude of effect used in this ES Addendum from the significance criteria used in 2013 ES Chapter.

Consultation

5.7.13 No additional consultation relating to wind microclimate has been undertaken since the 2013 ES Chapter.

Assessment of Effects, Mitigation and Residual Effects

Demolition & Construction Phase

5.7.14 This section identifies and assesses the scale and nature of the main effects arising from the Proposed Development during the construction phase.

5.7.15 As in the 2013 ES Chapter, activities associated with construction will, in general, have relatively little impact on the wind environment at pedestrian level. Any potential impacts would be mitigated through best practice construction site methods, delivered through the CEMP.

Operational Phase

5.7.16 This section identifies and assesses the scale and nature of the main effects arising from the Proposed Development during the operational phase.

5.7.17 The following scenarios have been assessed as part of CFD modelling:

- Configuration 1: Updated baseline
- Configuration 2: Proposed Development with existing surrounds
- Configuration 3: Proposed Development with cumulative surrounds.

5.7.18 Configuration 4 discussion of this ES addendum discuss the results from the above Configuration 2 with the results from the consented parameter plans i.e. 2013 ES.

Configuration 1: Updated Baseline

5.7.19 The neighbouring surroundings assessed in the 2013 ES have changed. As such, this section identifies the wind conditions at and around the existing Site as of the current situation.

5.7.20 Wind conditions around the existing site are shown in Figures 5.7.1 and 5.7.2 for the windiest and summer season at ground level respectively.

Pedestrian Comfort

Thoroughfares (Figure 5.7.1)

5.7.21 Thoroughfares at and around the Site have sitting to strolling conditions during the windiest season.

Entrances (Figure 5.7.1)

5.7.22 Entrances to the existing surrounding buildings are suitable for sitting and standing use during the windiest season.

Bus stops (Figure 5.7.1)

5.7.23 Bus stops along Beresford Street have standing use conditions during the windiest season.

Pedestrian Crossings (Figure 5.7.1)

5.7.24 Pedestrian crossings in the vicinity of the Site have standing and strolling use conditions during the windiest season.

Ground Level Amenity (Figure 5.7.2)

5.7.25 Amenity spaces within the Building B apartment buildings to the north of the Site are suitable for standing use during the summer season. Amenity spaces within the Pavilion Square to the east of the Site are suitable for sitting use during the summer season.

Strong winds

5.7.26 There are no areas around the existing site that have wind conditions suitable for walking or worse during the windiest season. As such, strong winds exceeding the safety threshold are not expected to occur around the Site.

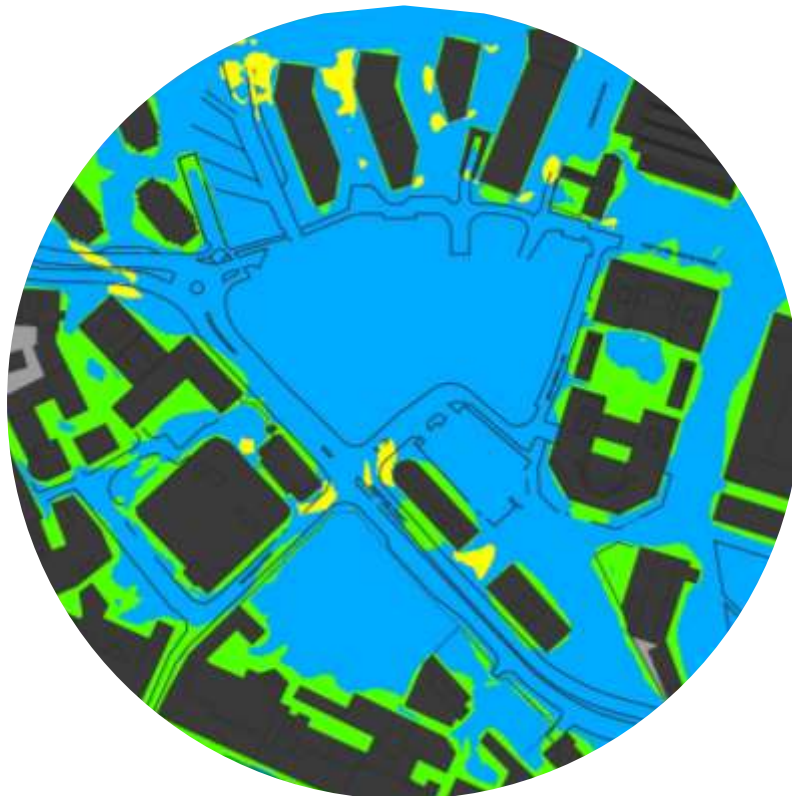


Figure 5.7.1 Configuration 1: Updated Baseline – Windiest Season, Ground Level

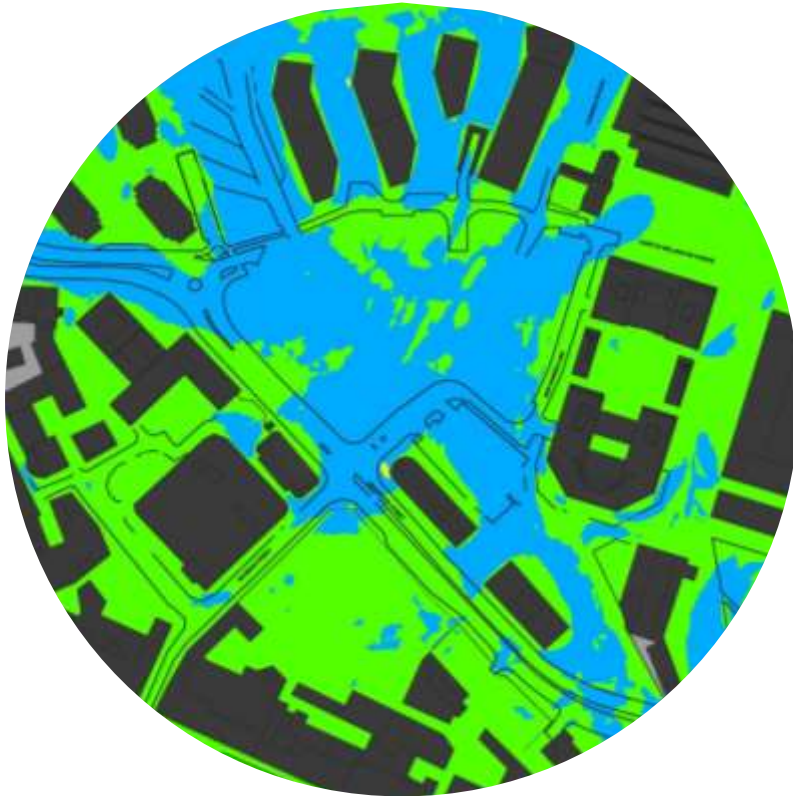


Figure 5.7.2 Configuration 1: Updated Baseline – Summer Season, Ground Level

Configuration 2: Proposed Development with Existing Surrounds

5.7.27 This section identifies and assesses the scale and nature of the main effects arising from the Proposed Development during the operation phase.

5.7.28 Wind conditions around the existing site are shown in Figures 5.7.3 and 5.7.4 for the windiest and summer season at ground level respectively, and Figures 5.7.5 and 5.7.6 for windiest and summer season at elevated levels respectively.

Pedestrian Comfort

Thoroughfares (Figure 5.7.3)

5.7.29 Thoroughfares at and around the Proposed Development would have strolling or calmer use conditions during the windiest season, suitable conditions for intended use. Sitting to strolling use conditions would represent **Moderate Beneficial** to **Negligible** effects.

Entrances (Figure 5.7.3)

5.7.30 Wind conditions along the facades of Plot D and Plot F would be suitable for sitting and standing use during the windiest season, suitable conditions for any potential entrances. These conditions would represent **Minor Beneficial** to **Negligible** effects.

5.7.31 Consistent with Configuration 1, entrances to the existing surrounding buildings would be suitable for sitting and standing use during the windiest season, suitable conditions for the intended use. This would represent a **Negligible** effect.

Bus stops (Figure 5.7.3)

5.7.32 Wind conditions at the bus stops along Beresford Street would be suitable for sitting and standing use during the windiest season. Sitting conditions at the bus stop have suitable standing use conditions during the windiest season. Sitting conditions at the Bus Stop to the south of Building K would be one category calmer than that in the existing scenario. These conditions would be suitable for the intended use and would represent a **Negligible** effect.

Pedestrian Crossings (Figure 5.7.3)

5.7.33 Consistent with Configuration 1, pedestrian crossings in the vicinity of the Site would have suitable standing and strolling use conditions during the windiest season. Standing and strolling use conditions would represent **Negligible** effects.

Ground Level Amenity (Figure 5.7.4)

5.7.34 Proposed amenity between Plot D and Plot K would be suitable for standing use during the summer season, suitable conditions for play spaces. However, this would be one category windier than suitable for any seating provisions within the play spaces. Standing conditions at seating and play spaces would represent **Minor Adverse** and **Negligible** effects respectively.

5.7.35 The massing of Plot D and Plot K would provide some beneficial shelter from the prevailing south-westerly winds. As such, the amenity spaces within the Plot B apartment buildings to the north of the Proposed Development would be suitable for sitting and standing use during the summer season, one category calmer than that in existing scenario. Consistent with Configuration 1, amenity spaces within Pavilion Square to the east of the Site are suitable for sitting use during the summer season. These conditions would represent a **Negligible** effect.

Elevated Level Amenity (Figure 5.7.6)

5.7.36 Podium spaces of Plot K would be suitable for sitting use during the summer season.

5.7.37 Upper-level terraces of Buildings 1 and 2 of Plot K would be suitable for sitting and standing use during the summer season, suitable conditions for private amenity use.

5.7.38 Roof terraces would be accessible for maintenance use only. Therefore, wind conditions at the roof terraces were not assessed as part of the comfort study as general public would not have access to these spaces.

5.7.39 Sitting and standing conditions would represent a **Negligible** effect.

Strong winds (Figures 5.7.3, 5.7.4)

5.7.40 Strong winds which would pose a safety concern for pedestrians would be expected within the roof terraces with walking and conditions uncomfortable for pedestrian use during the windiest season. The roof terraces would only be accessible for maintenance use only and as such the access to these terraces would be controlled during the windiest times of the year.

5.7.41 Consistent with Configuration 1, strong winds exceeding the safety threshold would not be expected at ground level at and around the Proposed Development.

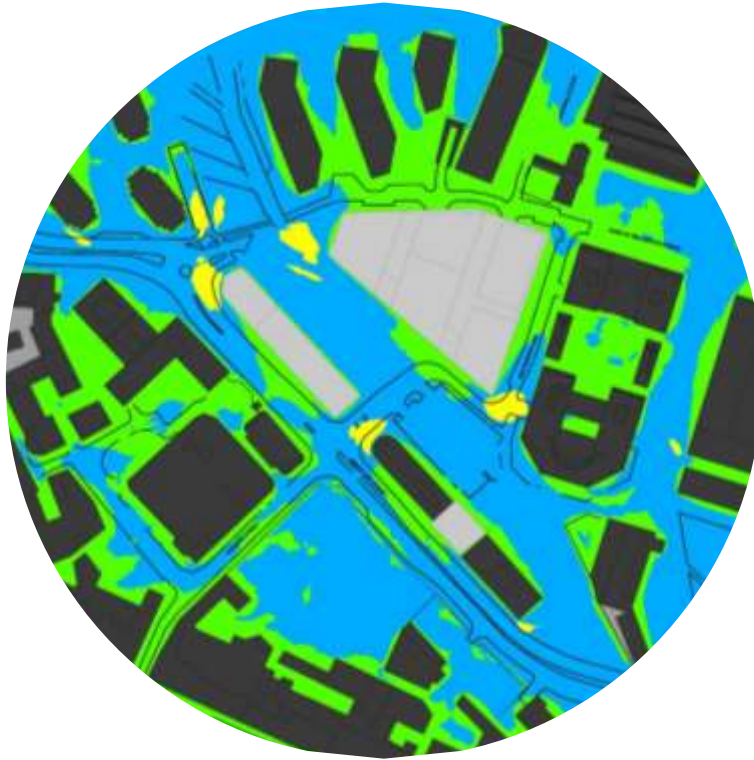


Figure 5.7.3 Configuration 2: Proposed Development with Existing Surrounds – Windiest Season, Ground Level

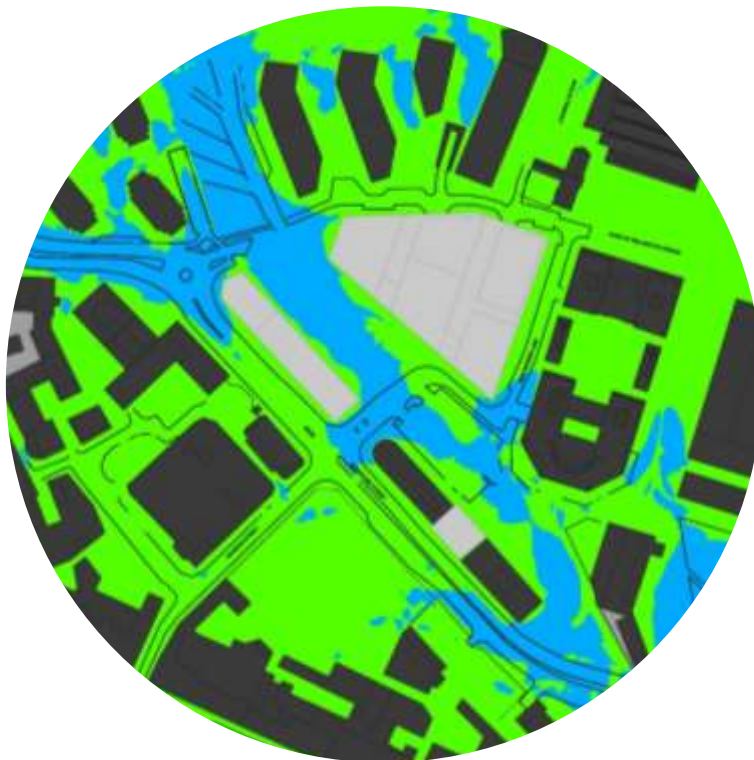


Figure 5.7.4 Configuration 2: Proposed Development with Existing Surrounds – Summer Season, Ground Level

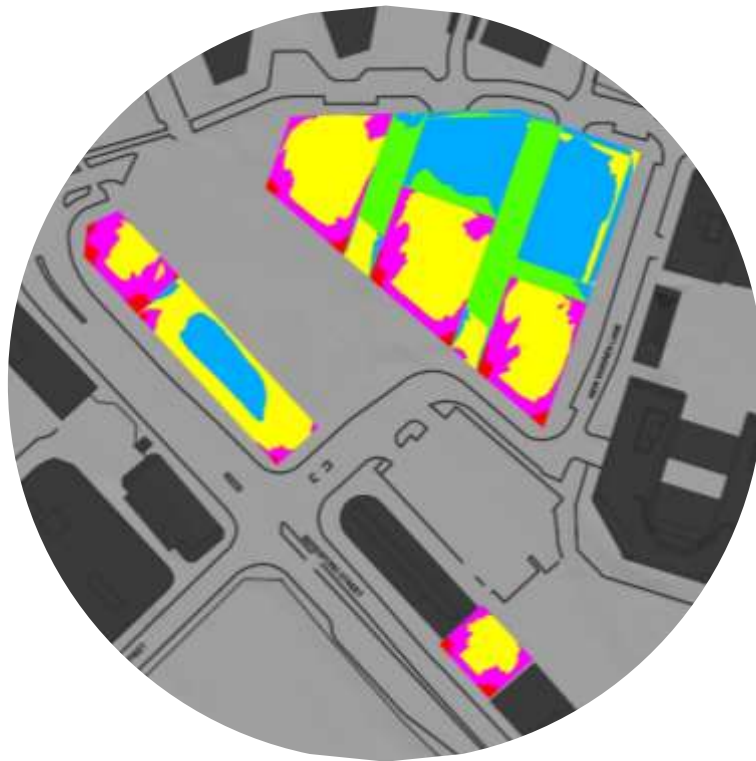


Figure 5.7.5 Configuration 2: Proposed Development with Existing Surrounds – Windiest Season, Elevated Levels

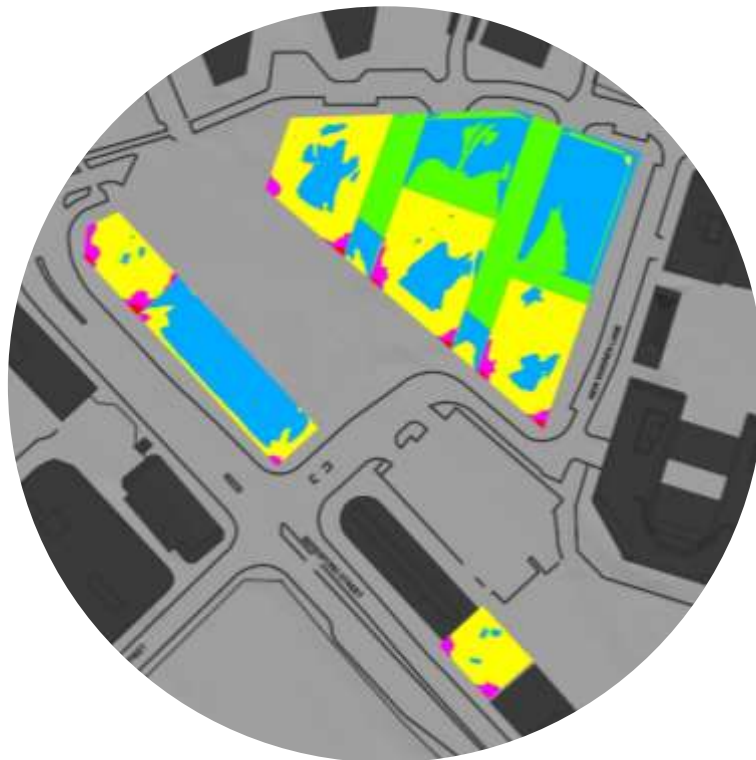


Figure 5.7.6 Configuration 2: Proposed Development with Existing Surrounds – Summer Season, Elevated Levels

Mitigation

5.7.42 Standing conditions at any proposed seating provisions within the play spaces to the south of Plot D would be one category windier than suitable for the intended use. However, density of the trees within the proposed landscaping scheme between Plots D and K would be expected to improve wind conditions. As such, with the landscaping scheme ("Z429-HTA01-STW-00-DR-L-005-100 received 14/02/2024) in seating provisions would be expected to have suitable sitting conditions representing a **Negligible** effect.

Cumulative Effects

5.7.43 This section identifies and assesses the scale and nature of the main effects arising from the cumulative schemes within 400m radius of the Proposed Development during the operation phase.

5.7.44 Wind conditions around the site are shown in Figures 5.7.7 and 5.7.8 for the windiest and summer season at ground level respectively, and Figures 5.7.9 and 5.7.10 for windiest and summer season at elevated levels respectively.

Pedestrian Comfort

5.7.45 The majority of the cumulative schemes would be located significantly far away from the Proposed Development to have any significant material effect. However, inclusion of the taller 81-88 Beresford Street Scheme (Planning ref 21/4216/F) would increase the windiness to the south due to the wind interactions with this cumulative scheme, resulting in strolling conditions during the windiest season. These conditions would be suitable for the intended thoroughfare use.

5.7.46 Wind conditions at all other areas at and around the Proposed Development would be consistent with Configuration 2. As such on-Site wind conditions would represent **Moderate Beneficial** to **Minor Adverse** effects.

5.7.47 Wind conditions at off-site areas would represent **Negligible** effect.

Strong winds

5.7.48 Consistent with Configuration 2, strong winds which would pose a safety concern for pedestrians would be expected within the roof terraces with walking and conditions uncomfortable for pedestrian use during the windiest season. The roof terraces would only be accessible maintenance use only and as such the access to these terraces would be controlled during the windiest times of the year.

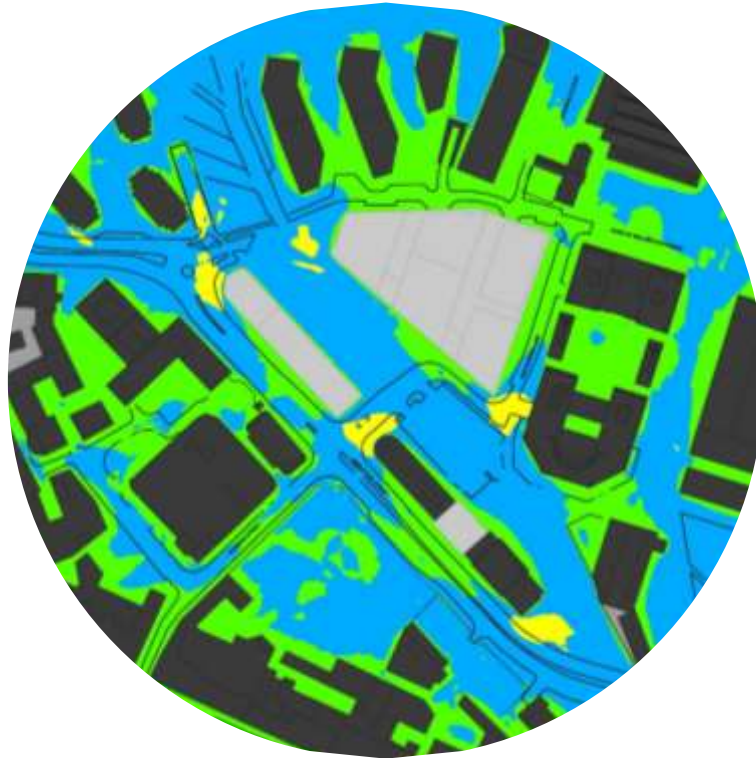


Figure 5.7.7 Configuration 3: Proposed Development with Cumulative Surrounds – Windiest Season, Ground Level

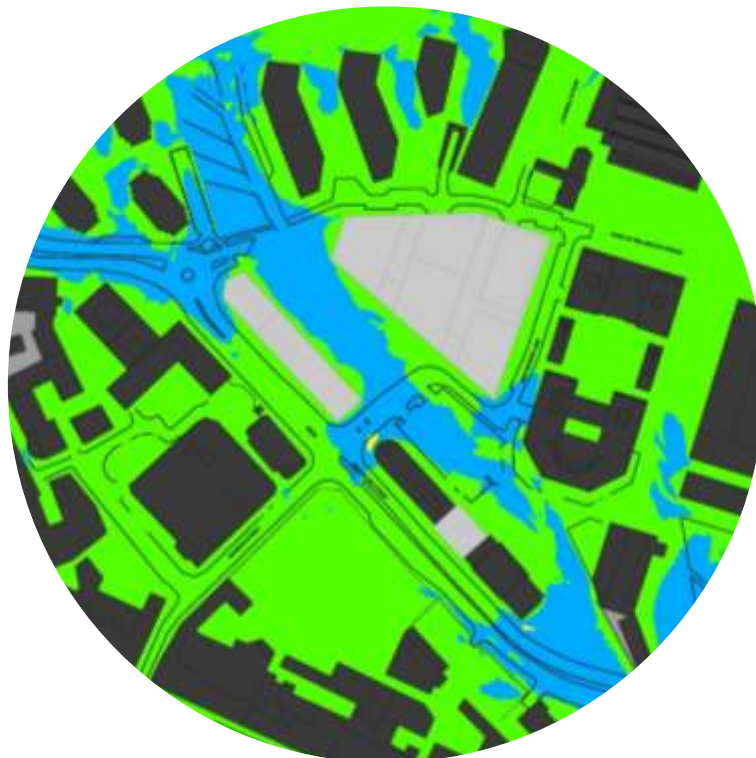


Figure 5.7.8 Configuration 3: Proposed Development with Cumulative Surrounds – Summer Season, Ground Level

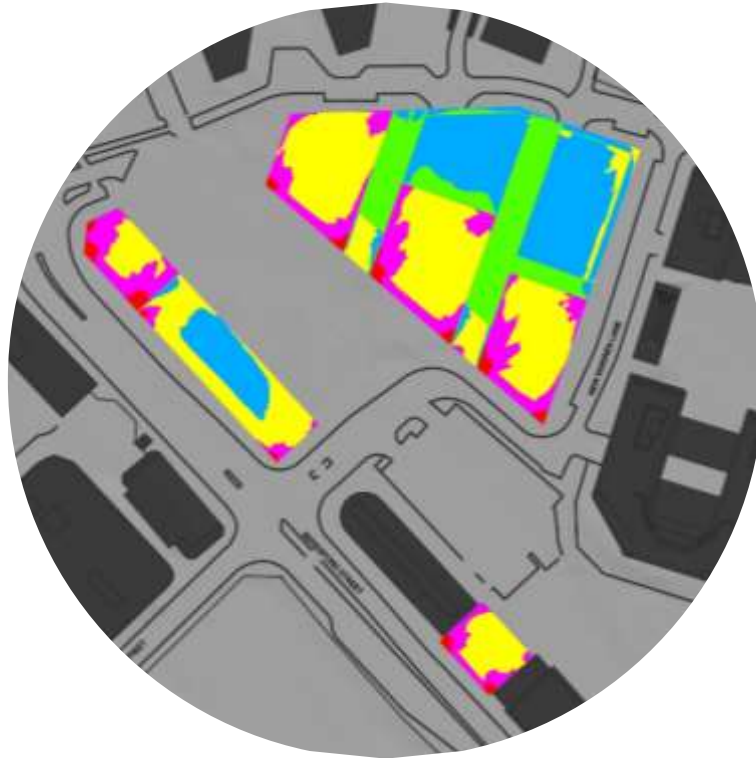


Figure 5.7.9 Configuration 3: Proposed Development with Cumulative Surrounds – Windiest Season, Elevated Levels

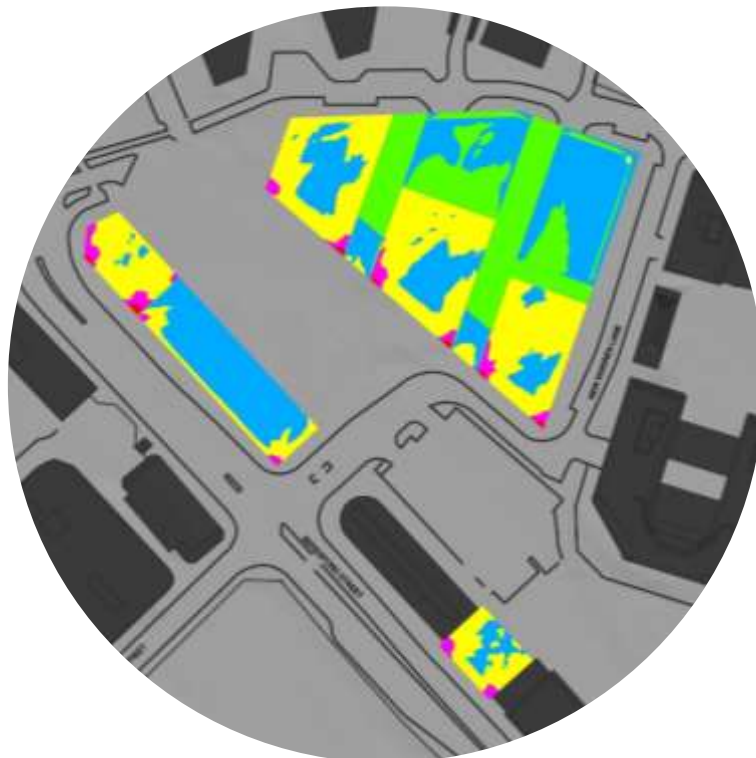


Figure 5.7.10 Configuration 3: Proposed Development with Cumulative Surrounds – Summer Season, Elevated Levels

Mitigation

5.7.49 Similar to Configuration 2, inclusion of the proposed landscaping scheme would be expected to provide beneficial shelter to the proposed seating within the play spaces to the south of Plot D. As such, with the landscaping scheme in seating provisions would be expected to have suitable sitting conditions representing a **Negligible** effect.

Comparison to the Proposed Development in 2013 ES

5.7.50 The 2013 ES states, *“during the operational phase of the Proposed Development most areas would be acceptable for “Pedestrian Walkthrough” and in many instances areas close to buildings are acceptable for “Sitting”. The Overall effect of the Proposed Development would be expected to be broadly acceptable in terms of wind climate.*

5.7.51 *The only location where there could be a significant effect is within the Royal Arsenal Gardens and at the proposed seating adjacent to Block K5. These areas would be acceptable for “Pedestrian Walking” but for benches or seating areas, the wind would be considered unacceptable at certain times. Localised sheltering provided by planting or screening could provide a more comfortable environment.”*

5.7.52 The 2013 ES concluded that *“the wind environment for people in the Proposed Development is considered to be adequate, provided the suggested mitigation measures are given thorough consideration and implemented in the detailed design stage. It would also be beneficial to consider the location of seating during detailed design to ensure that wind effects are fully considered alongside other environmental factors.”*

5.7.53 This assessment of the proposed non-material amendments indicates that the majority of the areas at and around the Proposed Development would have suitable wind conditions. The exception to this would be the proposed amenity between Plots D and K with standing conditions during the summer season, which would be windier than suitable for any seating provisions within the play spaces. However, the density of the trees within the proposed landscaping scheme between Plots D and K would be expected to improve wind conditions. As such, with the landscaping scheme in place, the areas of seating would be expected to have suitable sitting conditions. Overall the wind conditions at and around the updated massing of the Proposed Development would be similar to that reported in the 2013 ES.

Limitation and Assumptions

5.7.54 The wind conditions reported in this chapter are based on updated drawings for Plots D and K provided to RWDI in February 2024 to update the existing 2013 ES Chapter model.

Summary & Conclusions

5.7.55 A wind microclimate assessment was undertaken for the Proposed Development, taken into account the updates to the parameter model of Plots D and K using Computational Fluid Dynamic modelling in the context of the existing and cumulative surrounding buildings. This document therefore focuses on conditions within and around Plots D and K specifically, and provides a comparison to the 2013 ES Chapter.

5.7.56 Similar to the 2013 ES Chapter, the majority of the areas at and around the Proposed Development would remain suitable for the intended uses. The 2013 ES Chapter identified proposed seating adjacent to Building K5 would have conditions windier than suitable for the intended use. Similarly, assessment of the updated parameter model in this ES Addendum identified any seating proposed within the play spaced adjacent to Building K5 (area between Plots D and K) would have conditions windier than suitable for sitting use. However, inclusion of the proposed landscaping scheme would be beneficial to achieve suitable sitting conditions within these spaces.

