

Chapter 8: Wind Microclimate

WIND MICROCLIMATE	
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SUPPORTING APPENDIX	ES Volume 3, Appendix: Wind Microclimate Annex 1: Planning Policy Context Annex 2: CFD Methodology
KEY CONSIDERATIONS	This ES chapter presents an assessment of the likely wind microclimate effects of the Proposed Development, in terms of pedestrian level wind comfort and safety. The key wind microclimate considerations are: • Whether the Proposed Development causes a risk to pedestrian safety due to strong winds either on-site or in the surrounding area during construction works and once completed; • Whether the Proposed Development causes unsuitable comfort conditions due to high wind speeds on-site, in terms of conditions for building entrances, back of house spaces and amenity spaces during construction works and once completed; and • Whether the Proposed Development causes unsuitable comfort conditions due to high wind speeds within the local area off site (i.e. off-site), in terms of conditions for thoroughfares, roadways, pedestrian crossings, building entrances and elevated amenity spaces during construction works and once completed.
CONSULTATION	An EIA Scoping Opinion Request Report was submitted to the LBH on 27 July 2026 (hereafter referred to as the 'EIA Scoping Report') to request an EIA Scoping Opinion from the LBH and statutory consultees regarding the scope of the EIA. The EIA Scoping Report is provided in ES Volume 3, Appendix: EIA Methodology – Annex 1. At the time of writing, an EIA Scoping Opinion has not yet been received.

ASSESSMENT METHODOLOGY

CFD Approach

- 8.1
- Computational Fluid Dynamics (CFD) is a digital modelling technique, which simulates the effect of wind for the built environment. The air is divided into hundreds of millions of “cells”, within which the equations of motion are solved. GIA uses cloud computing from Amazon Web Services (AWS) to run the simulations, to ensure vast scalability and appropriate resource availability for any project.
- 8.2
- In the absence of specific requirements from the London Borough of Haringey with regard to the Wind Microclimate Assessment, CFD was selected as the appropriate approach for this study. GIA’s CFD methods have been extensively correlated to physical data to ensure accuracy and allow for a greater level of detail (such as terrain undulations and fine building details) to be captured by the model, as well as allowing the ability to test at full scale.
- 8.3
- Wind speeds on and around the site were measured at 1.5m above any surfaces expected to be used for pedestrian activity, to determine the conditions at and around the site. The model was run at full scale from 18 wind angles, spaced using 10° or 30° increments such that no sector contributes more than 10% of the annual wind.
- 8.4
- On-site and local wind speeds (both mean and peak gust speeds) were combined with 30 years’ worth of combined weather data from London Heathrow and London City Airports, corrected for terrain local to the airports and the site, to obtain annual and seasonal frequency and magnitude of wind speeds across the model. This allows the ‘grading’ of the pedestrian level winds according to the Lawson Comfort Criteria, which are explained later in this ES chapter.
- 8.5
- The wind microclimate effects are assessed annually and seasonally. The windiest season (typically the winter months of December, January and February) are reported as this is when the strongest winds are expected, summer conditions (June, July, August) are reported as this is the season when pedestrian usage of outdoor spaces is expected to be highest.

Defining the Baseline

- 8.6
- Baseline conditions have been established using a 3D model, extending a 400m radius around the site, tested using high resolution CFD.
- 8.7
- The existing baseline conditions are defined as the current site conditions at the time the wind assessment was undertaken, with current surrounding properties and those schemes with consent that are currently under construction (i.e. construction has commenced) given the certainty that these will be completed and operational by the time the Proposed Development commences. As such, it is considered reasonable that these schemes are assumed to be fully built out for the purposes of the baseline scenario. Strategic Development Partnership (SDP) Sites (HGY/2018/2223 – Plots A, C, D and E) and 29-33, The Hale (HGY/2021/2304) have been included in the baseline for this reason. Plot B of the Strategic Development Partnership (SDP) Sites (HGY/2018/2223), although under construction and largely complete has not been included in this assessment due to its distance from the site.
- 8.8
- Existing mature trees to the west of the site, within Down Lane Park have been included within all configurations of the assessment.
- 8.9
- The Baseline Scenario (Configuration 1) is primarily suitable for a mixture of sitting, standing, leisure walking and business walking in the windiest season; as described later in this chapter.

Evolution of the Baseline

- 8.10
- The cumulative schemes (presented within **ES Volume 1, Chapter 2: EIA Methodology** and **ES Volume 3, Appendix: EIA Methodology - Annex 3**) were reviewed to determine which would be relevant to wind conditions on and directly around the site.
- 8.11
- Of the cumulative schemes identified, the following schemes are considered sufficiently advanced and were therefore included in the baseline:

• Strategic Development Partnership Sites (HGY/2018/2223, It’s noted that Plot F is not yet under construction, however, would be imperceptible in the model and have no weight on the baseline wind conditions); and

• 29-33 The Hale (HGY/2021/2304).
- 8.12
- The following cumulative scheme was included in Configuration 4:

• Berol Quarter (HGY/2023/0261 & HGY/2025/0930);
- 8.13
- The following quantitative and qualitative cumulative assessments have been carried out:

• Cumulative Assessment 1 – the Proposed Development with quantitative consideration of Berol Quarter; and

• Cumulative Assessment 2 – the Proposed Development with qualitative consideration of the Tottenham Hale Retail Park; and

• Cumulative Assessment 3 – the Proposed Development with qualitative consideration of the Tottenham Hale Retail Park site allocation and, in addition, qualitative consideration of the emerging Cannon Factory proposals during enabling and construction works and once the Proposed Development and surrounding cumulative schemes are complete and operational.

Impact Assessment Methodology

Enabling and Construction

- 8.14
- Enabling and construction effects have not been measured directly in CFD, due to the constantly changing building form during the construction process. The potential effects during construction were assessed based on GIA professional judgement, taking into account an assessment of the background wind microclimate at the

site and an understanding of the effects of wind in the built environment. As construction works progress through the phased delivery of the Proposed Development, the conditions in and around the site are expected to gradually transition between those of the existing baseline and the final completed Proposed Development, which is typically considered to represent the worst-case scenario in terms of wind comfort off site.

- 8.15** This approach is taken assuming that the activity on-site during this time (i.e. construction activity) is less sensitive to wind conditions (due to protection from site hoarding, and site access being restricted to site workers) than when the Proposed Development is completed and occupied (which would include new building entrances and outdoor seating with amenity spaces, for example). In addition, there would be appropriate health and safety measures implemented (through a Construction Environment Management Plan ('CEMP')) to ensure that the construction workers were adequately protected.
- 8.16** With regard to the use of cranes on-site, it can be noted that these are typically slender and relatively 'open' in structure. Cranes would therefore not be expected to introduce any material microclimate effects to the site or surrounding area, that would require assessment in this ES.

Completed Development

CFD Testing

- 8.17** A 3D model of the Proposed Development was included in the CFD model and wind speeds were measured on and around the site to determine the strength and frequency of pedestrian level wind speeds.
- 8.18** A suitable atmospheric boundary layer (to accurately capture the effect of local buildings and terrain on atmospheric wind speeds and turbulence) was generated.

Target Conditions

- 8.19** Conditions are assessed against the London Docklands Development Corporation (LDDC) variant of the Lawson Comfort Criteria, which is the industry standard measure for assessing wind conditions¹
- 8.20** The desired wind microclimate would typically need to have areas acceptable for sitting, standing (including at entrances of buildings) and walking. Table 8. 1 and Table 8. 2 set out the description of the comfort categories to classify wind conditions.

Table 8.1 Lawson Comfort Criteria (LDDC Variant)

Key	Comfort Category	Mean Wind Speed (5% exceedance)	Description
	Sitting	0-4m/s	Acceptable for outdoor sitting use (e.g. cafes, benches)
	Standing	4-6m/s	Acceptable for main building entrances, pick-up / drop-off points and bus stops
	Leisure Walking	6-8m/s	Acceptable for strolling
	Business Walking	8-10m/s	Acceptable for external pavements, walking purposefully without lingering
	Uncomfortable	>10m/s	Not comfortable for regular pedestrian access

Table 8.2 Lawson Safety Criteria (LDDC Variant)

Key	Category	Mean Wind Speed (0.025% exceedance)	Description
	Safe	<15m/s	An acceptable level of wind safety risk
	Distress Exceedance (S15)	15m/s	Presents a safety risk to more vulnerable members of the public and cyclists
	Safety Exceedance (S20)	20m/s	Presents a safety risk to all members of the public

- 8.21** Any areas identified as being either subject to strong winds i.e. a distress exceedance or a safety exceedance in accordance with Table 8.2, or uncomfortable (during the windiest season) require mitigation, unless they are in locations where pedestrian access can be controlled in the event of strong winds. This applies to all thoroughfares, entrances, amenity spaces, crossings and walkways (for pedestrians) and roads (for cyclists) in and around the Proposed Development.
- 8.22** The target is for most thoroughfares to be suitable for leisure walking. Localised regions of business walking can be tolerated as a transitory pedestrian will pass through them relatively quickly, but an extensive region of business walking is not acceptable.
- 8.23** Within roadways and pedestrian crossings, business walking is acceptable as these areas will only be used by people undertaking high energy activities such as cycling or brisk walking to cross the road. There are pedestrian crossings to the west of the Proposed Development along Park View Road, to the southwest of the Proposed Development along Hale Road and to the southeast of the Proposed Development, along Ashley Road.
- 8.24** At bus stops, standing is acceptable as these areas will be used for waiting. However, there are no bus stops within the study area.
- 8.25** The areas immediately outside any building entrances should be suitable for standing during the windiest season to provide a "buffer" between the still conditions in interior spaces and those at the general thoroughfares.
- 8.26** Existing off-site mixed amenity spaces which have the potential to be affected include the area south of Pavilion Pre-School, the amenity area south of the Rosa Luxemburg Apartments, Down Lane Park directly to the west, and existing private residential gardens, to the south of the site. These are targeted to be suitable for a mixture of standing and sitting in summer conditions or remain consistent in suitability as in the baseline scenario.
- 8.27** There are existing off-site amenity terraces at the Rosa Luxemburg Apartments, West Apartments, and East Apartments. These are targeted to be suitable for a mixture of standing and sitting in summer conditions or remain consistent in suitability as in the baseline scenario.
- 8.28** There is also a play area within the public realm of the Proposed Development. This is targeted to be suitable for a mixture of standing and sitting in summer conditions.
- 8.29** There are proposed private residential gardens to the north of the affordable housing block within the site. These are targeted to be suitable for a mixture of standing and sitting in summer conditions.
- 8.30** There are specific proposed seating areas within the public realm of the Proposed Development (within the Ashley Link). These are targeted to be suitable for sitting in summer conditions.
- 8.31** There are also proposed terraces on Level 7 and Level 21 of the proposed Shared Living Block (Block A). These are targeted to be suitable for a mixture of sitting and standing in summer.

¹ Building Aerodynamics, T Lawson (2001)

8.32 There are proposed balconies across the Proposed Development. These are required to be suitable for sitting or standing in summer conditions.

Assessment Scenarios

8.33 The purpose of these tests is to ensure that target conditions could be achieved when the Proposed Development is complete and in use with its current surroundings.

8.34 The following five configurations were assessed:

- Configuration 1: The Existing site with the Existing Surrounding Buildings and existing landscaping (assessed in the 'Baseline Conditions' section of this ES chapter);
- Configuration 2: The Proposed Development (excluding proposed landscaping) with the Existing Surrounding Buildings and existing landscaping (assessed in the 'Potential Effects' section of this ES chapter);
- Configuration 3: The Proposed Development and proposed landscaping with the Existing Surrounding Buildings and existing landscaping (assessed in the 'Mitigation, Monitoring and Residual Effects' section of this ES chapter); and
- Configuration 4: The Proposed Development and proposed landscaping with the cumulative surrounding buildings and existing landscaping (assessed in the 'Cumulative Effects Assessment').
- Configuration 5: The Proposed Development and proposed landscaping with the Cannon Factory and Tottenham Hale Retail Park (assessed qualitatively in the 'Cumulative Effects Assessment').

8.35 The existing site, as tested in Configuration 1, is shown in Figure 8.1. The Proposed Development, as tested in Configuration 2, 3 and 4 is shown in Figure 8.2.

8.36 The existing surrounding buildings, as tested in Configurations 1, 2 and 3, are shown in Figure 8.3.

8.37 The cumulative surrounding buildings, as tested in Configuration 4, are shown in Figure 8.3.

8.38 The existing trees to the immediate west of the Proposed Development were included in all runs (Configurations 1, 2, 3 and 4) as part of the existing and cumulative surrounding context, whilst the proposed trees and soft landscaping were not initially included in the model (Configurations 1 and 2), to ensure that a reasonable worst-case scenario was captured for the Proposed Development. They were however included in Configuration 3 and 4.

Figure 8.1 CFD Model as Tested (Existing Site, Tested in Configuration 1)

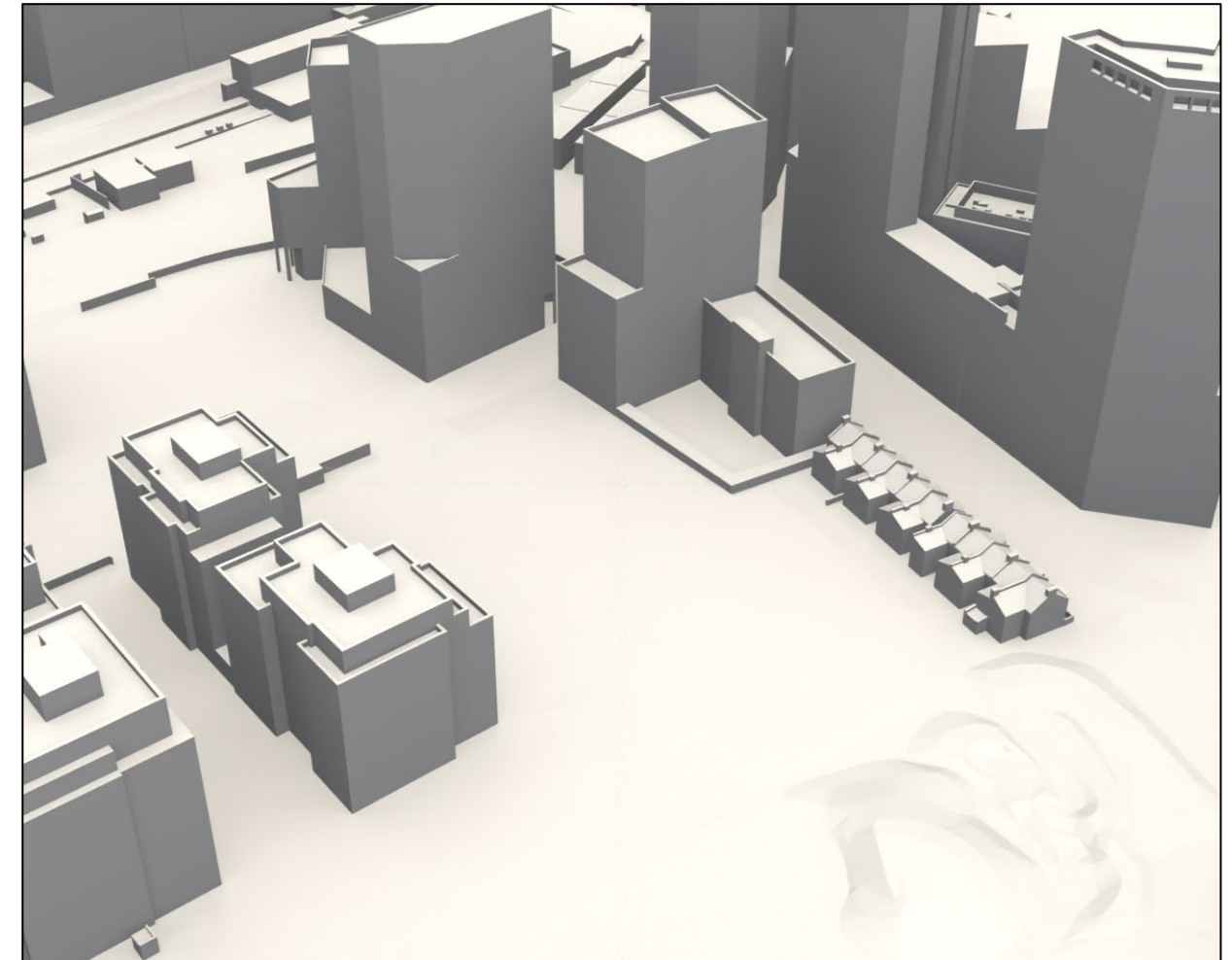


Figure 8.2 CFD Model as Tested (Proposed Development, Tested in Configuration 2)

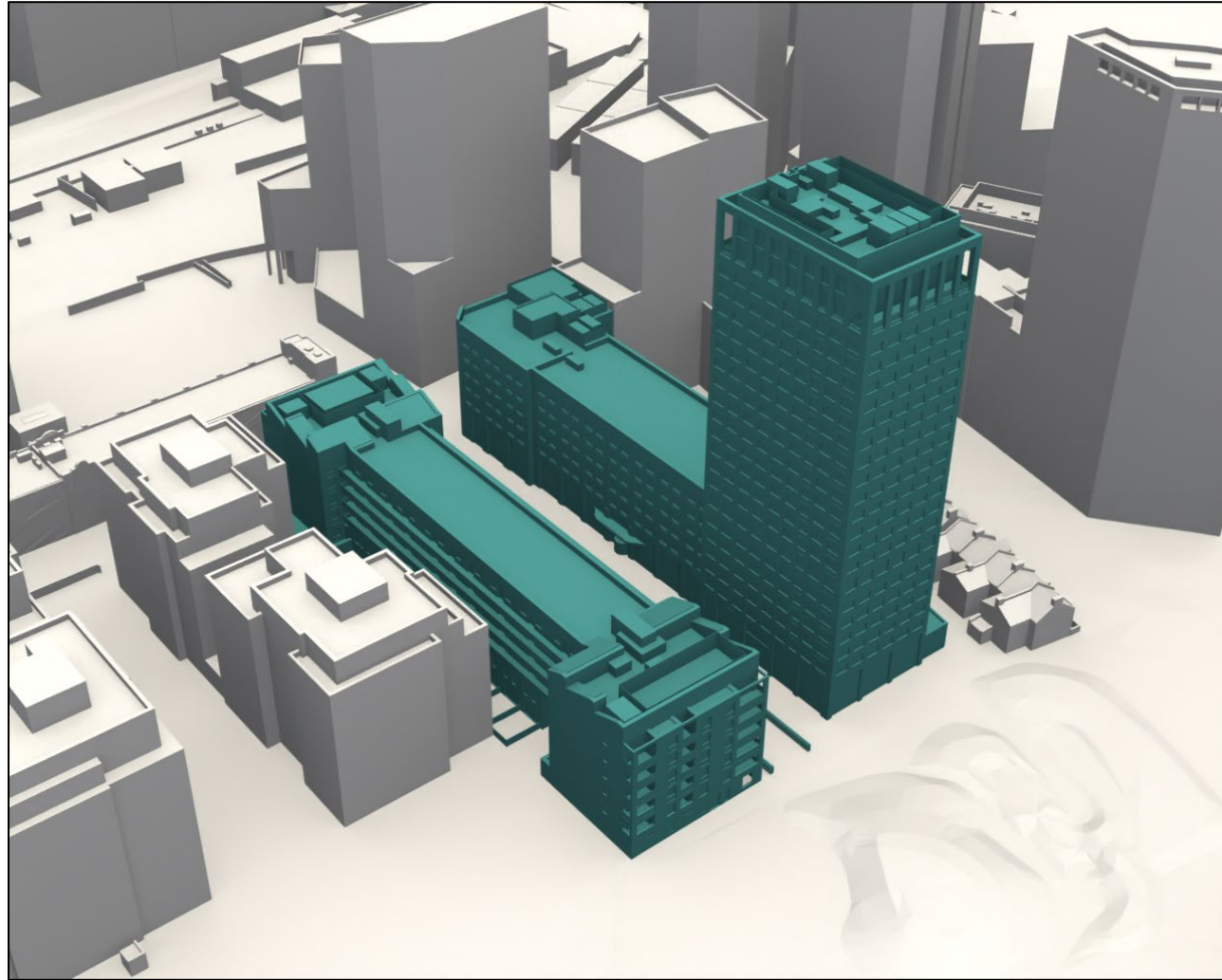
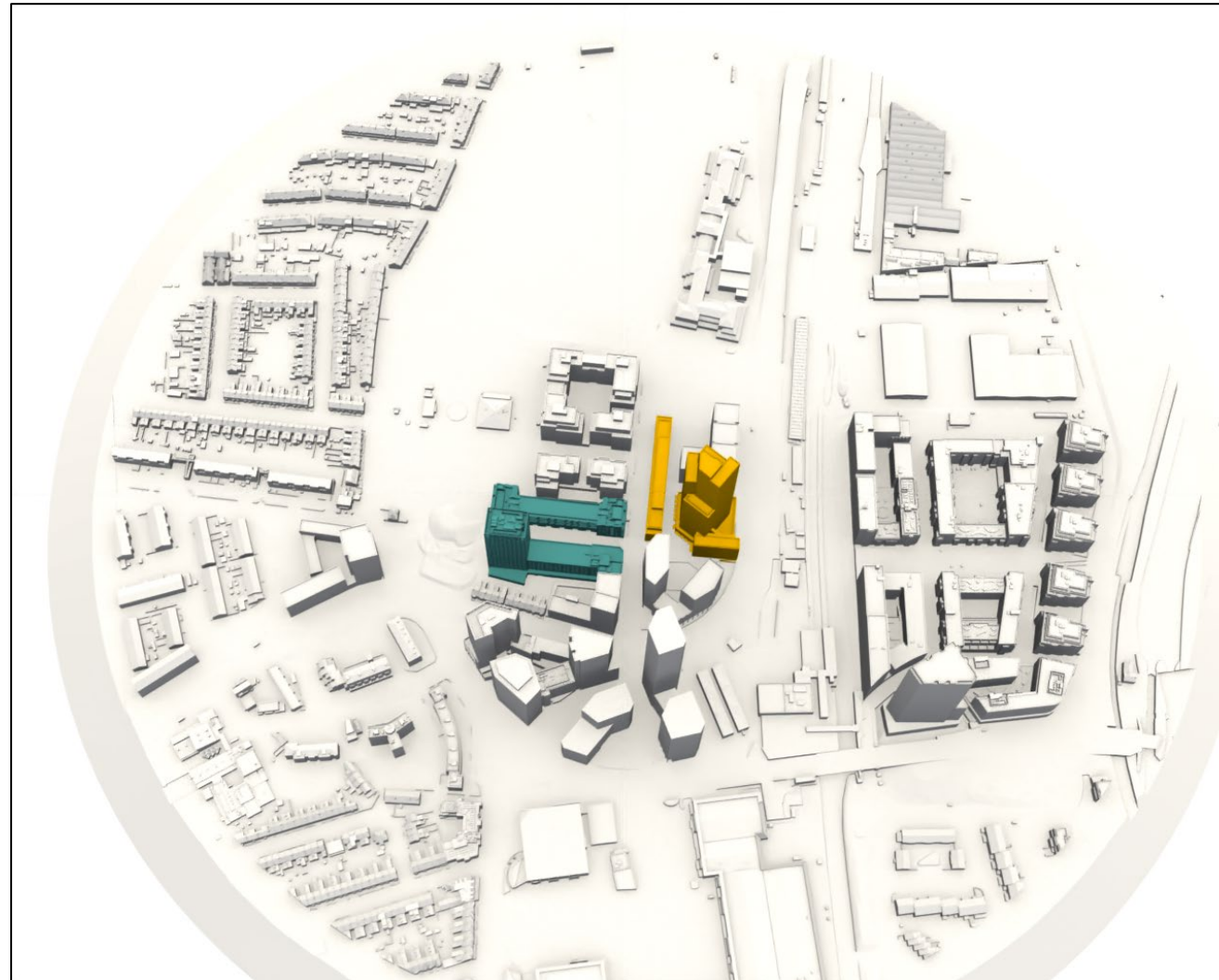


Figure 8.3 Surrounding Context (Existing), as tested in Configuration 1, 2 and 3 (Shown with Proposed Development from Configuration 2).



Figure 8.4 Surrounding Context (Cumulative), as tested in Configuration 4.



Assumptions and Limitations

8.39 The assessment is based upon the following assumptions:

- There is an inherent assumption that on-site wind speeds will scale linearly with the measured wind speeds at the airports (i.e. that the ways in which the wind speed varies in the 30 years of measured airport wind data will be representative of how the wind speed varies on-site);
- The accuracy of the results is dependent upon the accuracy of the architectural computer-aided design (CAD) used to construct the model;
- During the construction process, wind conditions will gradually change from the baseline conditions to the conditions for the completed Proposed Development; and
- On-site activity during construction (i.e., construction workers) will be able to withstand a higher category of pedestrian comfort level than for the completed Proposed Development.

Methodology for Defining Effects

Receptors and Receptor Sensitivity

- 8.40 Receptors are identified according to the expected pedestrian activities for different areas in the site and surrounding area. All receptors are considered of high sensitivity to strong winds, as these can pose a risk to the safety of pedestrians and cyclists.
- 8.41 General thoroughfares are of medium sensitivity to pedestrian comfort, as users are not expected to dwell for significant periods in the region of an individual probe. Building entrances, public realm and amenity spaces are of high sensitivity to pedestrian comfort.

Magnitude of Impact

- 8.42 Any exceedance of the required wind comfort or safety levels is treated as giving rise to a materially adverse impact because it has the potential to make a pedestrian area unsuitable for its intended use if not mitigated.

Defining the Effect

- 8.43 Beneficial effects are those where conditions are calmer than required for the intended use. Adverse effects are those where conditions are windier than required for the intended use, or there is a risk to safety due to strong winds.
- 8.44 The scale and nature of wind effects is defined as set out below:
- **Major Beneficial:** wind conditions are three categories calmer than required (for off-site locations, unless consistent with or windier than the baseline conditions);
 - **Moderate Beneficial:** wind conditions are two categories calmer than required (for off-site locations unless consistent with or windier than the baseline conditions);
 - **Minor Beneficial:** wind conditions are one category calmer than required (for off-site locations unless consistent with or windier than the baseline conditions);
 - **Negligible / No Effect:** wind conditions are those required, or are consistent with the baseline conditions or wind conditions are calmer than required and windier than the baseline, or wind conditions are windier than required but calmer than the baseline;
 - **Minor Adverse:** wind conditions are one category windier than required (for off-site locations unless consistent with or calmer than the baseline conditions);
 - **Moderate Adverse:** wind conditions are two categories windier than required (for off-site locations unless consistent with or calmer than the baseline conditions); and
 - **Major Adverse:** wind conditions are three categories windier than required (for off-site locations unless consistent with or calmer than the baseline conditions).

- 8.45 Additionally, any risk to pedestrian safety due to strong winds is classified as a **Major Adverse** effect.

Geographic Extent

- 8.46 All wind effects will be either site or local effects. For the purposes of this study, a site effect is classified as one which is measured anywhere within the site boundary, and a local effect is one which is measured elsewhere in the study area across Down Lane Park, Park View Road, Hale Road, Ashley Road and surrounding land.

Duration of Effect

8.47 All effects for the completed and operational Proposed Development will be permanent or medium to long term effects, and any effects during construction will be temporary or short-term effects.

Direct and Indirect Effects

8.48 All wind effects are direct effects resulting from the impact of the Proposed Development on the local wind environment.

Categorising Likely Significant Effects

8.49 For the purposes of this ES chapter, any adverse effects (for strong winds and comfort) are categorised as 'significant', as these will require mitigation in order to achieve acceptable comfort and safety conditions. Any negligible or beneficial effects will have suitable conditions for the intended use without mitigation, so are classified as 'not significant'.

RECEPTORS AND RECEPTOR SENSITIVITY

Existing Receptors

8.50 The existing sensitive receptors include thoroughfares around the site, pedestrian crossings, off-site entrances to buildings within the study area, mixed amenity spaces and off-site amenity terraces.

8.51 The locations for these receptors are shown in Table 8.3 and are also marked in Figure 8.5 and Figure 8.6.

Introduced Receptors

8.52 New sensitive receptors will be introduced by the Proposed Development, including the entrances to the buildings of the Proposed Development, mixed amenity space, play areas, seating, residential gardens, amenity terraces, and balconies within the Proposed Development. The locations for these receptors are shown in Table 8.3 and Figure 8.5, Figure 8.6 and Figure 8.7.

Table 8.3 Sensitive Receptors

Receptor Type (Relevant Assessment Season)	Receptor Reference
On-site (introduced)	
Thoroughfares (Windiest)	Spaces away from direct building proximity within the site.
Entrances (Windiest)	Entrances to the Proposed Development (coloured orange and marked "E" in Figure 8.5).
Play Areas (Summer)	Play area within the public realm (coloured yellow and marked "P1" Figure 8.5)
Private Residential Gardens (Summer)	Private residential gardens within the Proposed Development (coloured dark green and marked "G2" in Figure 8.5).
Seating (Benches) (Summer)	Seating in the form of benches within the public realm (coloured blue and marked "S1" in Figure 8.5).
Amenity Terraces (Summer)	Mixed amenity terraces (coloured light green in Figure 8.6) at: - Level 7 of the Shared Living Block; and - Level 21 of the Shared Living Block.
Balconies (Summer)	Balconies on the affordable housing block (coloured magenta in Figure 8.7).
Off-site (existing)	
Thoroughfares (Windiest)	Spaces away from direct building proximity outside the site boundary.
Pedestrian Crossings (Windiest)	Pedestrian Road Crossings within the surrounding area (coloured purple and marked "PC1", "PC2" and "PC3" in Figure 8.5).

Receptor Type (Relevant Assessment Season)	Receptor Reference
Entrances (Windiest)	Entrances to existing buildings within the surrounding area (coloured orange and marked "O" in Figure 8.5) outside the site boundary.
Mixed Amenity (Summer)	Down Lane Park (coloured pink and marked "DLP" in Figure 8.8), amenity lawns to the west and south of Rosa Luxemburg Apartments (coloured pink and marked "A1" and "A2" respectively in Figure 8.5).
Private Residential Gardens (Summer)	Private residential gardens within the surrounding area (coloured dark green and marked "G1" in Figure 8.5) outside the site boundary.
Seating (Summer)	Spill-out seating to the east of Rosa Luxemburg Apartments (coloured blue and marked "S2" in Figure 8.5)
Amenity Terraces (Summer)	Off-site mixed amenity terraces at Rosa Luxemburg Apartments, West Apartments and East Apartments (coloured light blue in Figure 8.6).

Figure 8.5 Sensitive Receptor Locations, Ground Level (with Proposed Development in situ)

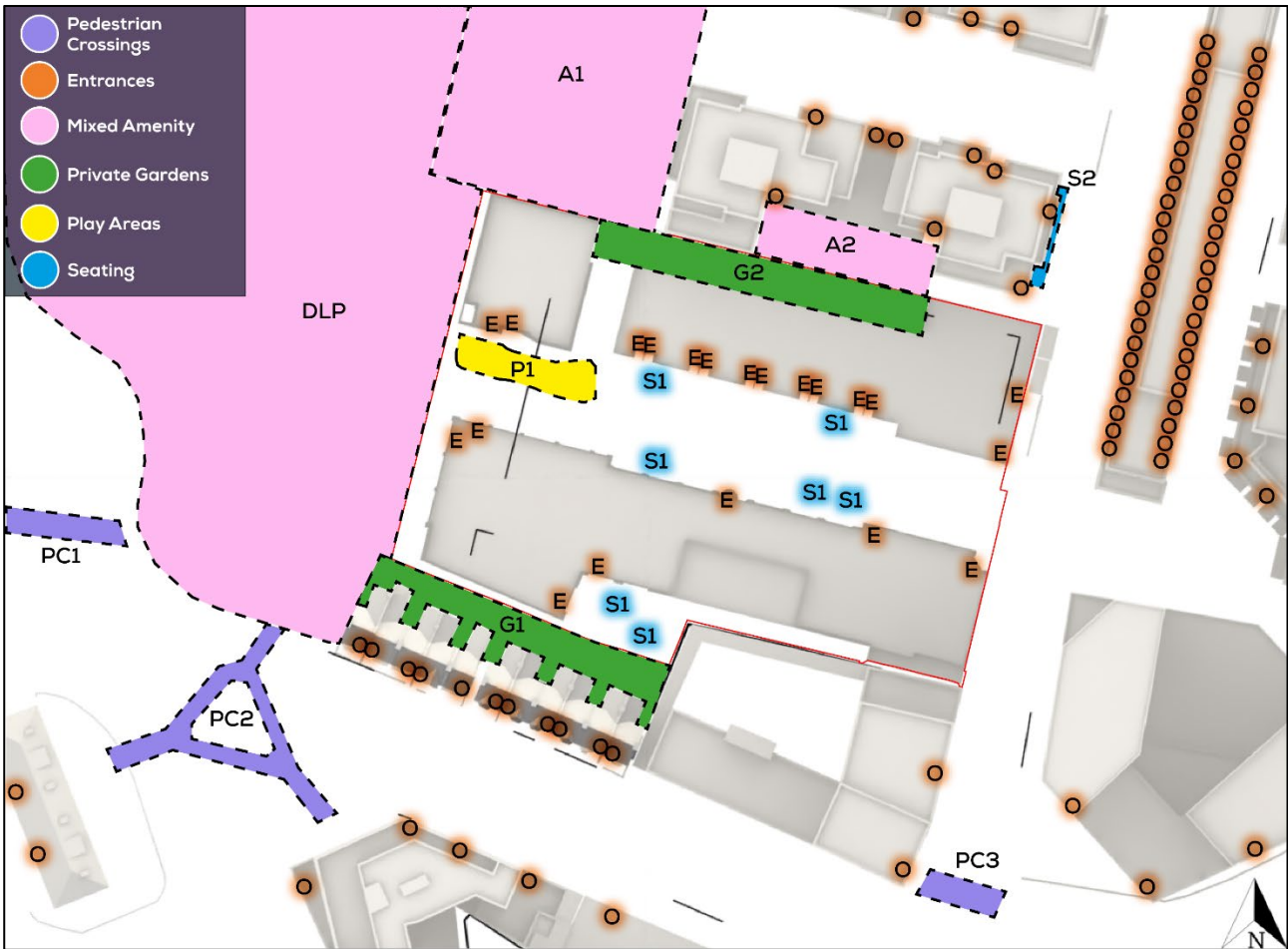


Figure 8.6 Sensitive Receptor Locations, Terraces (with Proposed Development in situ)



BASELINE CONDITIONS

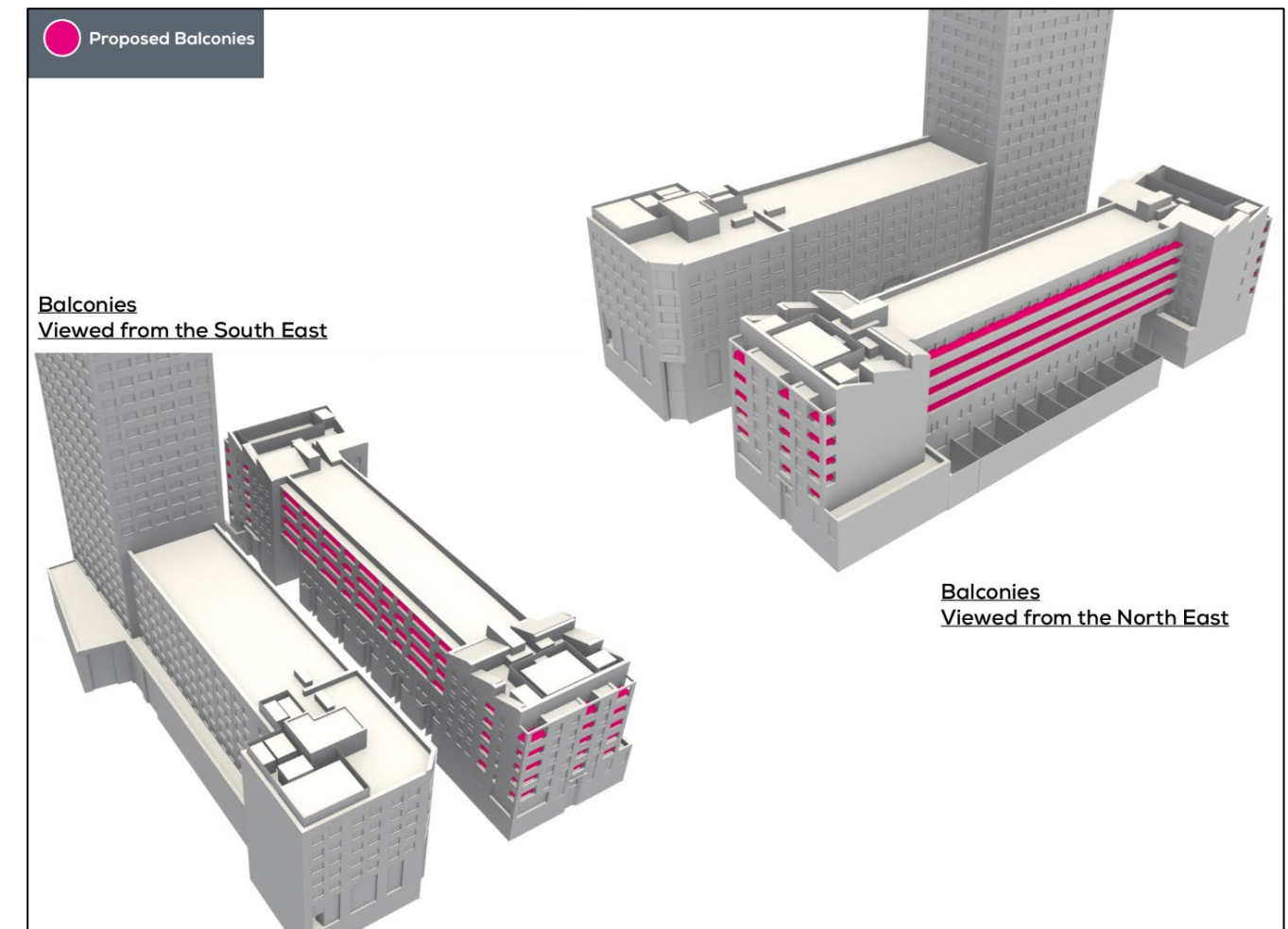
Current Baseline Conditions

Meteorological Data

- 8.53** Meteorological data from a combined wind data set based on weather data from London Heathrow and London City airports has been used for this assessment and is representative of wind conditions for the Greater London area.
- 8.54** Approximately 30 years of meteorological data has been used in the assessment. The data was corrected to account for the difference in terrain roughness between the City of London region and the site, using ESDU 2010 Item 01008².
- 8.55** Seasonal wind roses for the data are shown in Figure 8.8. The dominant wind direction is from the southwest.

² Computer program for wind speeds and turbulent properties: flat or hilly sites in terrain with roughness changes', ESDU 2010 Item 01008.

Figure 8.7 Sensitive Receptor Locations, Proposed Balconies



Configuration 1: Existing Site with Existing Surrounds

- 8.56** Windiest season conditions at ground level for the existing site with existing surrounds are shown in Figure 8.9
- 8.57** Summer conditions at ground level for the existing site with existing surrounds are shown in Figure 8.10.
- 8.58** Strong winds at ground level for the existing site with existing surrounds are shown in Figure 8.11.
- 8.59** Summer conditions at elevated levels for the existing surrounds are shown in Figure 8.12.
- 8.60** Strong winds at elevated levels for the existing surrounds are shown in Figure 8.13.

Pedestrian Comfort

- 8.61** Conditions range between suitable for sitting, standing, leisure walking and business walking in winter and sitting, standing and leisure walking in summer.
- 8.62** The locations of pedestrian crossings, principal off-site entrances, and mixed amenity spaces are shown in Figure 8.9, Figure 8.10, Figure 8.11 and Figure 8.12.
- 8.63** Conditions for the pedestrian crossings along Park View Road and Hale Road (marked PC1 and PC2 in Figure 8.9) are suitable for leisure walking in the windiest season. Conditions for the pedestrian crossing along Ashley Road (marked PC3 in Figure 8.9) are suitable for a mix of standing and leisure walking in the windiest season. This is suitable for the intended use.

Entrances

- 8.64** Conditions for all principal off-site entrances (marked O) are suitable for either sitting or standing in all seasons. The exception to this is an entrance to the southwest of the Proposed Development, along The Hale (marked O" and circled in Figure 8.9). However, this entrance is situated within a colonnade, which has similar sheltering effects to a recessed entrance. This is suitable for the intended use.

Ground level Amenity

- 8.65** Conditions for the mixed amenity spaces (marked A1 and A2 in Figure 8.10) are suitable for a mix of sitting and standing in summer. This is suitable for the intended use.
- 8.66** Conditions for Down Lane Park, to the west of the Proposed Development (marked DLP in Figure 8.10) are suitable for a mix of sitting, standing and leisure walking in summer. This is one category windier than the target conditions but reflects the existing baseline condition.
- 8.67** Conditions for the private residential gardens to the south of the Proposed Development (marked G1 in Figure 8.10) are suitable for a mix of sitting and standing in summer. This is suitable for the intended use.

Seating

- 8.68** Conditions for the spill-out seating located to the east of the Rosa Luxemburg Apartments (marked S2 in Figure 8.10) are suitable for sitting in summer. This is suitable for the intended use.

Terrace Level Amenity

- 8.69** Conditions for the off-site mixed amenity terraces at Rosa Luxemburg Apartments, West Apartments and East Apartments (marked in Figure 8.12) are suitable for sitting and standing in summer. This is suitable for the intended use.

Strong Winds

- 8.70** There are no winds exceeding strong wind limits (exceeding 15m/s for 0.025% of the year) at either ground or elevated levels.

Figure 8.8 Seasonal Wind Roses for London Combined (30 years data)



Figure 8.9 Configuration 1: Existing Site with Existing Surrounds, Ground, Windiest Season (Annotated as described in Table 8.3)

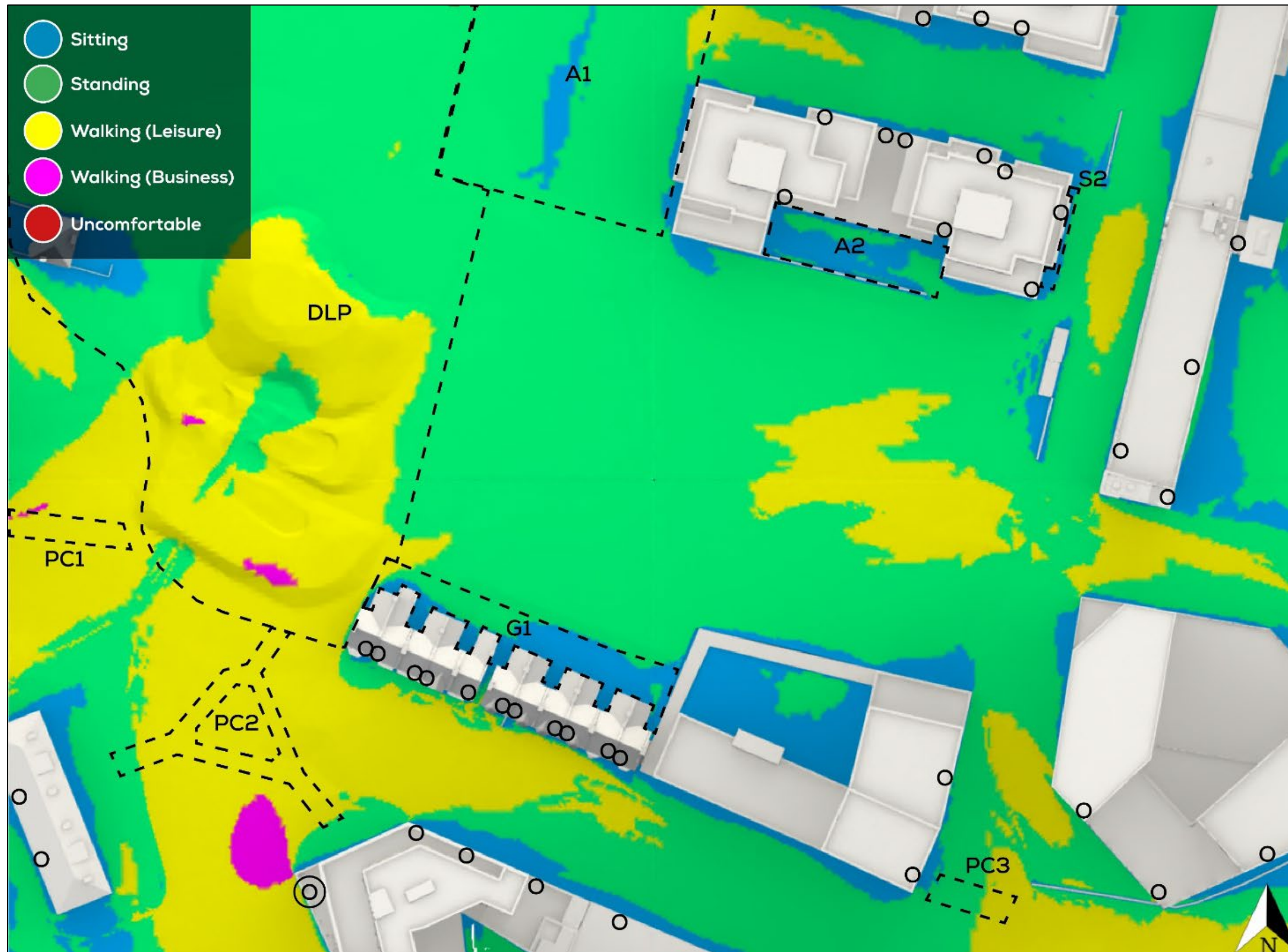


Figure 8.10 Configuration 1: Existing Site with Existing Surrounds, Ground, Summer (Annotated as described in Table 8.3)

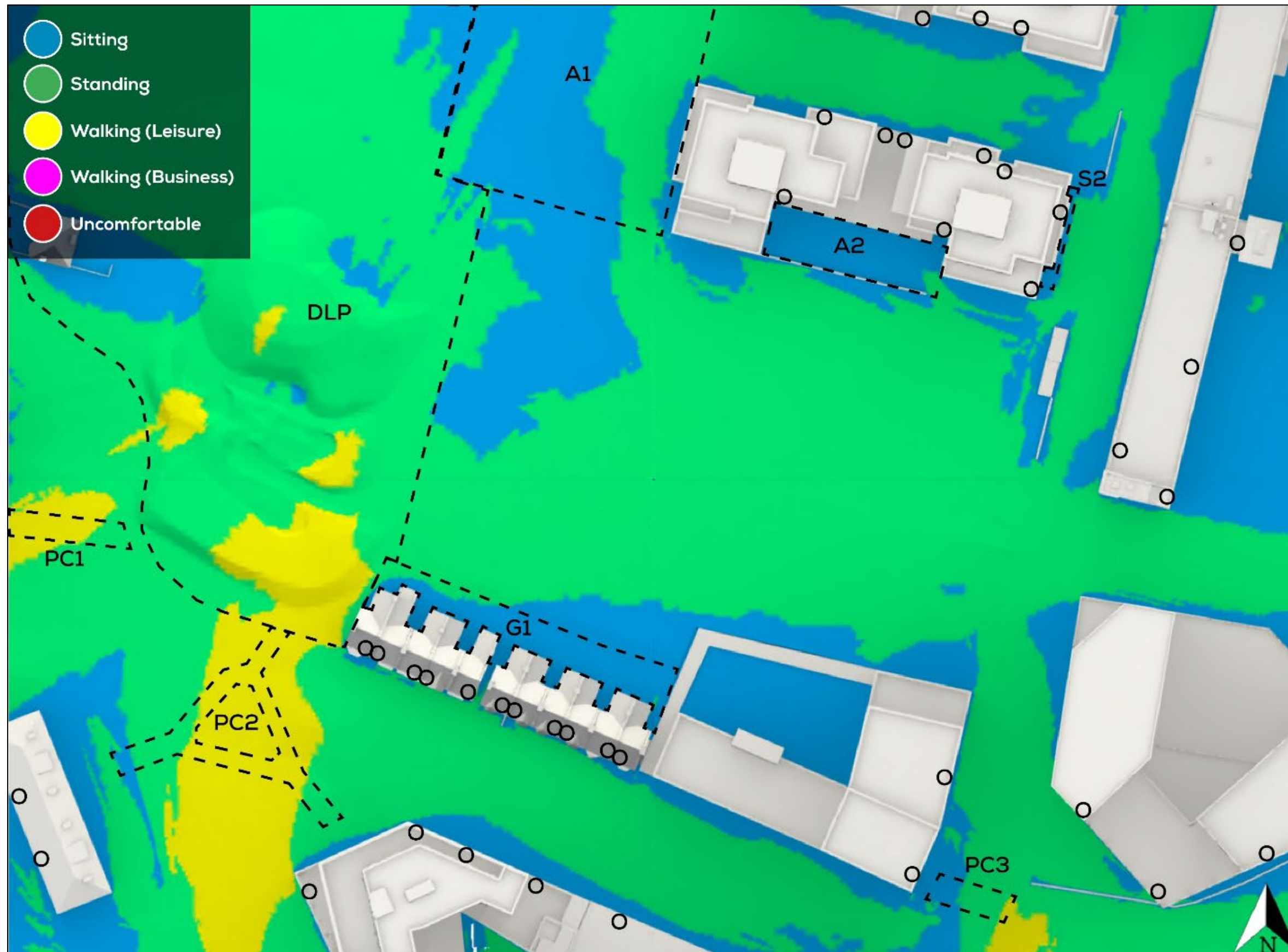


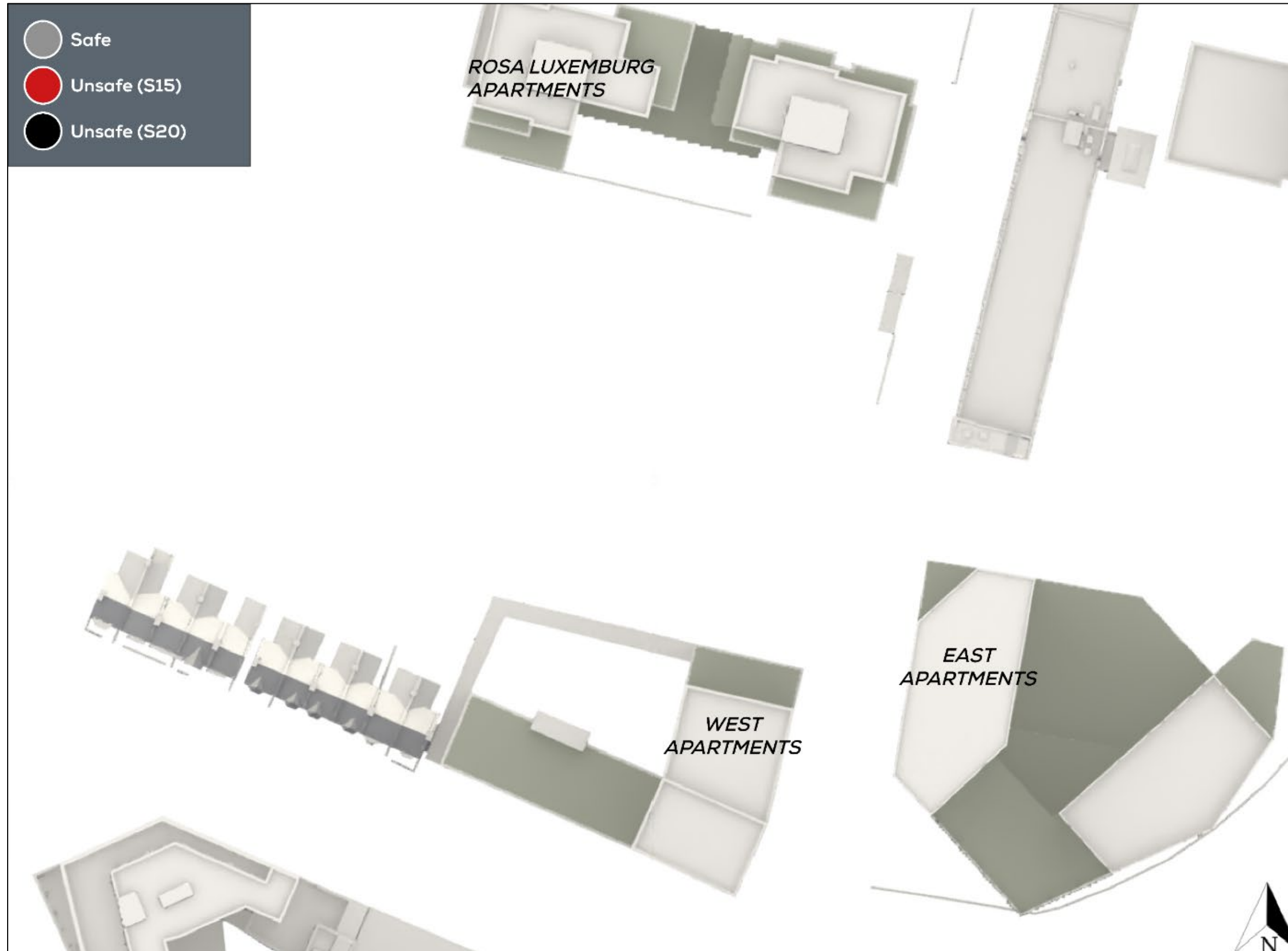
Figure 8.11 Configuration 1: Existing Site with Existing Surrounds, Ground, Strong Winds (Annotated as described in Table 8.3)



Figure 8.12 Configuration 1: Off-site Amenity Terraces, Summer (Annotated as described in Table 8.3)



Figure 8.13 Off-site Amenity Terraces, Strong Winds (Annotated as described in Table 8.3)



POTENTIAL EFFECTS

Enabling and Construction

- 8.71 During the enabling and construction of the Proposed Development, it is expected that conditions will gradually change from those measured for the Existing Site with Existing Surrounds (Configuration 1) to those measured for the Proposed Development with landscaping in the Existing Surrounds (Configuration 3). As such (in accordance with industry best practice for wind microclimate assessments), enabling and construction effects can be inferred from completed development effects.
- 8.72 Following implementation of the embedded and tested mitigation measures, all residual operational wind effects are negligible (not significant); accordingly, the associated enabling and construction effects are also considered negligible (not significant).

Completed Development

Configuration 2: Proposed Development with Existing Surrounds

- 8.73 Configuration 2 represents the Completed Proposed Development, including existing surrounds. It should be noted that this configuration does not include any proposed landscaping. The sensitive receptor locations are shown in Figure 8.5, Figure 8.6 and Figure 8.7. The following figures are presented with regards to the testing of this configuration:
- Windiest season conditions at ground level for the Proposed Development with Existing Surrounds are shown in Figure 8.14;
 - Summer conditions at ground level for the Proposed Development with Existing Surrounds are shown in Figure 8.15;
 - Strong winds at ground level for the Proposed Development with Existing Surrounds are shown in Figure 8.16;
 - Summer conditions at terrace levels for the Proposed Development with Existing Surrounds are shown in Figure 8.17;
 - Strong winds at terrace levels for the Proposed Development with Existing Surrounds are shown in Figure 8.18.
 - Summer conditions at balcony levels for the Proposed Development with Existing Surrounds are shown in Figure 8.19; and
 - Strong winds at balcony levels for the Proposed Development with Existing Surrounds are shown in Figure 8.20.

Pedestrian Comfort

- 8.74 Conditions range between suitable for sitting, standing, leisure walking and business walking in winter and sitting, standing and leisure walking in summer.
- 8.75 Conditions for the pedestrian crossings along Park View Road and Hale Road (marked PC1 and PC2 in Figure 8.14) are suitable for leisure walking in the windiest season. This is consistent with the baseline and represents a Negligible wind effect (not significant).
- 8.76 Conditions for the pedestrian crossing along Ashley Road (marked PC3 in Figure 8.14) are suitable for a mix of sitting, standing and leisure walking in the windiest season. This is one category calmer than the baseline and represents a Negligible wind effect (not significant).

Entrances

On-Site

- 8.77 Conditions for the entrances to the Proposed Development (marked E in Figure 8.14) are suitable for either sitting or standing in all seasons. This is suitable for the intended use and represents a Negligible effect (not significant).

Off-Site

- 8.78 Conditions for all principal off-site entrances (marked O in Figure 8.14) are suitable for either sitting or standing in all seasons. The exception to this is an entrance to the southwest of the Proposed Development, along The Hale (marked "O" and circled in Figure 8.14). However, this entrance is located within a colonnade, which has similar sheltering effects as a recessed entrance. This is also consistent with the baseline and represents a Negligible wind effect (not significant).

Ground level Amenity

On-Site

- 8.79 Conditions for the play area (marked P1 in Figure 8.15) are suitable for a mixture of standing and leisure walking in summer. This is one category windier than required for the intended use and represents a Minor Adverse effect (**significant**) and requires mitigation through landscaping.
- 8.80 Conditions for the private residential gardens to the north of the Proposed Development (marked G2 in Figure 8.15) are suitable for a mix of sitting and standing in summer. This is suitable for the intended use and represents a Negligible effect (not significant).

Off-Site

- 8.81 Conditions for the mixed amenity spaces (marked A1 in Figure 8.15) are suitable for a mix of sitting and standing in summer. This is consistent with the baseline and represents a Negligible effect (not significant).
- 8.82 Conditions for the mixed amenity spaces (marked A2 in Figure 8.15) are suitable for sitting in summer. This is one category calmer than the baseline and represents a Minor Beneficial effect (not significant).
- 8.83 Conditions for Down Lane Park, to the west of the Proposed Development (marked DLP in Figure 8.15) are suitable for a mix of sitting, standing and leisure walking in summer. This is one category windier than the target conditions, but is consistent with the baseline, representing a Negligible effect (not significant).
- 8.84 Conditions for the private residential gardens to the south of the Proposed Development (marked G1 in Figure 8.15) are suitable for a mix of sitting and standing in summer. This is consistent with the baseline and represents a Negligible effect (not significant).

Seating

On-Site

- 8.85 Conditions for a proposed bench located within the public realm (marked S1 and circled in Figure 8.15) range between being suitable for sitting and standing in summer. This is one category windier than the target conditions and ranges between representing a localised effect ranging from negligible to minor adverse and is treated as significant because mitigation is required to achieve the target sitting condition (**significant**).
- 8.86 Conditions for all remaining seating in the form of benches within the public realm (marked S1 in Figure 8.15) are suitable for sitting in summer. This is suitable for the intended use and represents a Negligible effect (not significant).

Off-Site

8.87 Conditions for the spill-out seating located to the east of the Rosa Luxemburg Apartments (marked S2 in Figure 8.15) is suitable for sitting in summer. This is suitable for the intended use and represents a Negligible effect (not significant).

Terrace Level Amenity

On-Site

- 8.88 Conditions for the proposed Level 7 terrace are suitable for a mix of sitting, standing and leisure walking in summer. This is one category windier than the target conditions and represents a Minor Adverse wind effect (**significant**) and so requires landscaping mitigation.
- 8.89 Conditions for the proposed Level 21 eastern terrace are suitable for a mix of sitting and standing in summer. This is suitable for the intended use and represents a Negligible effect (not significant).
- 8.90 Conditions for the proposed Level 21 western terrace are suitable for a mix of sitting and standing in summer. This is suitable for the intended use and represents a Negligible effect (not significant).

Off-Site

- 8.91 Conditions for the off-site mixed amenity terraces at Rosa Luxemburg Apartments, West Apartments and East Apartments are suitable for a mixture of sitting and standing in summer. This is consistent with the baseline and represents a Negligible effect (not significant).

Balconies

On-Site

- 8.92 Conditions for the proposed balconies are suitable for sitting in summer. This is suitable for the intended use and represents a Negligible effect (not significant).

Strong Winds

- 8.93 There are no winds exceeding strong wind limits (exceeding 15m/s for 0.025% of the year) at either ground or elevated levels.

Figure 8.14 Configuration 2: Proposed Development with Existing Surrounds, Ground, Windiest Season (Annotated as described in Table 8.3)

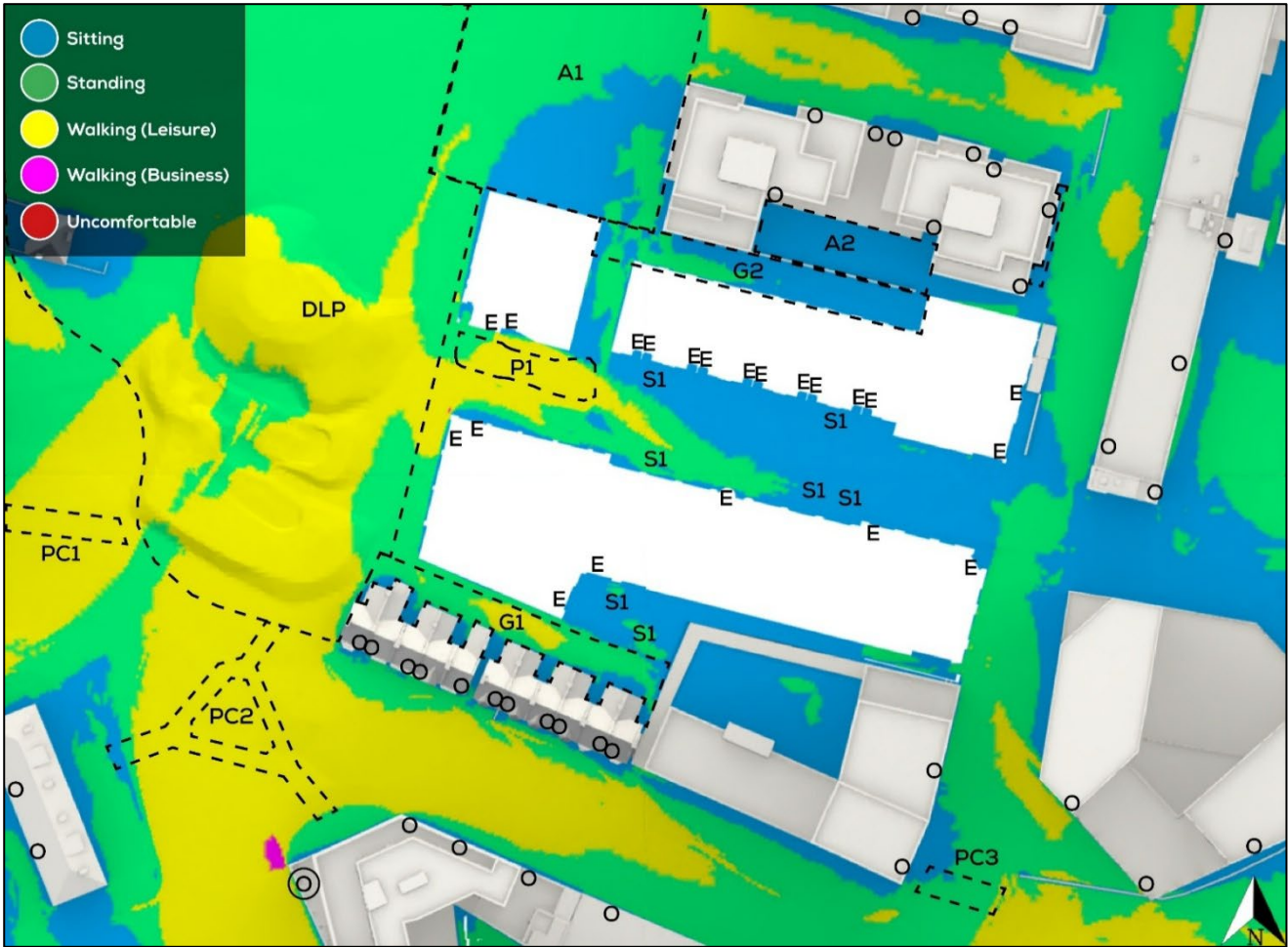


Figure 8.15 Configuration 2: Proposed Development with Existing Surrounds, Ground, Summer (Annotated as described in Table 8.3)

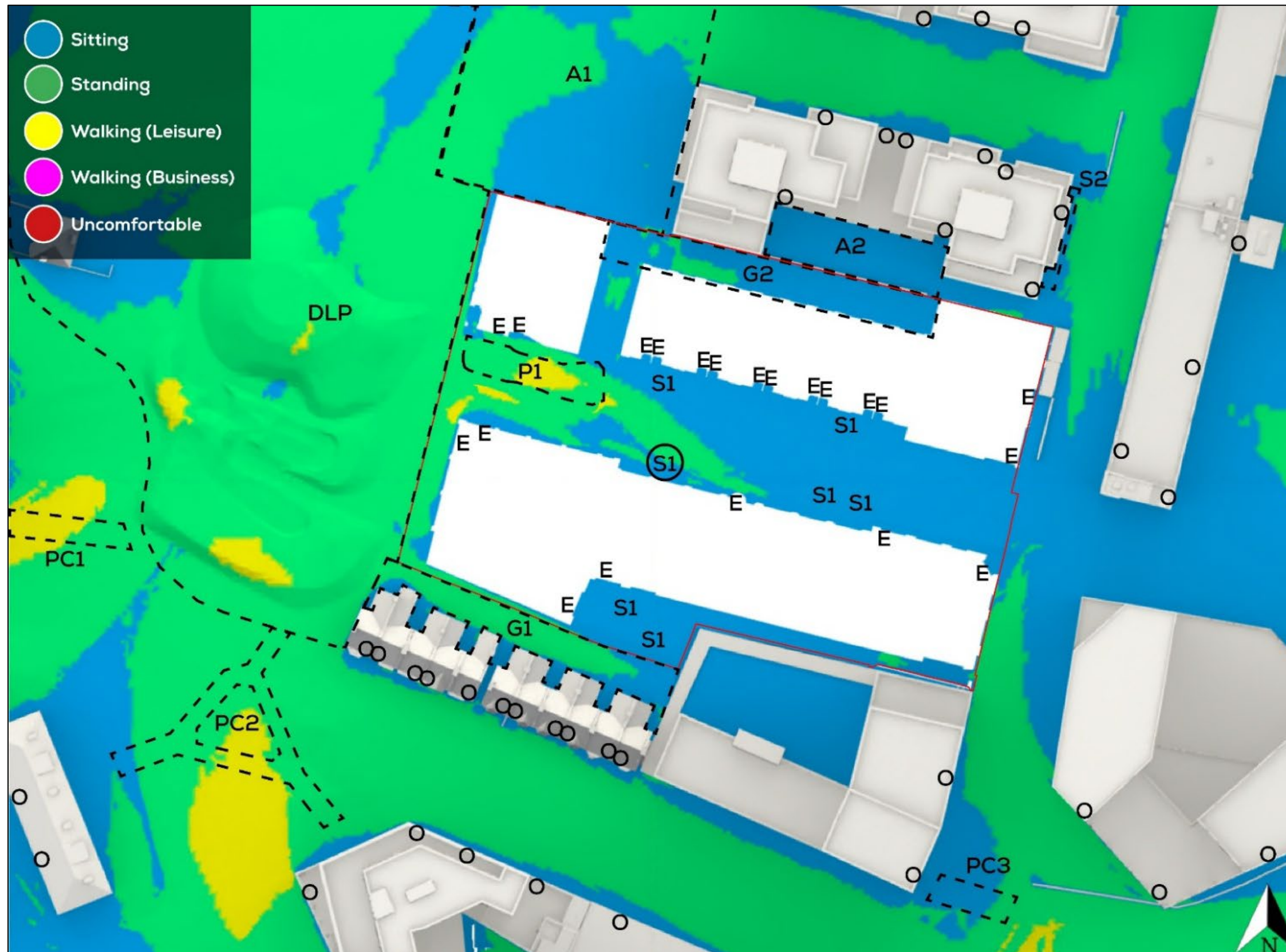


Figure 8.16 Configuration 2: Proposed Development with Existing Surrounds, Ground, Strong Winds (Annotated as described in Table 8.3)



Figure 8.17 Configuration 2: Amenity Terraces, Summer (Annotated as described in Table 8.3)

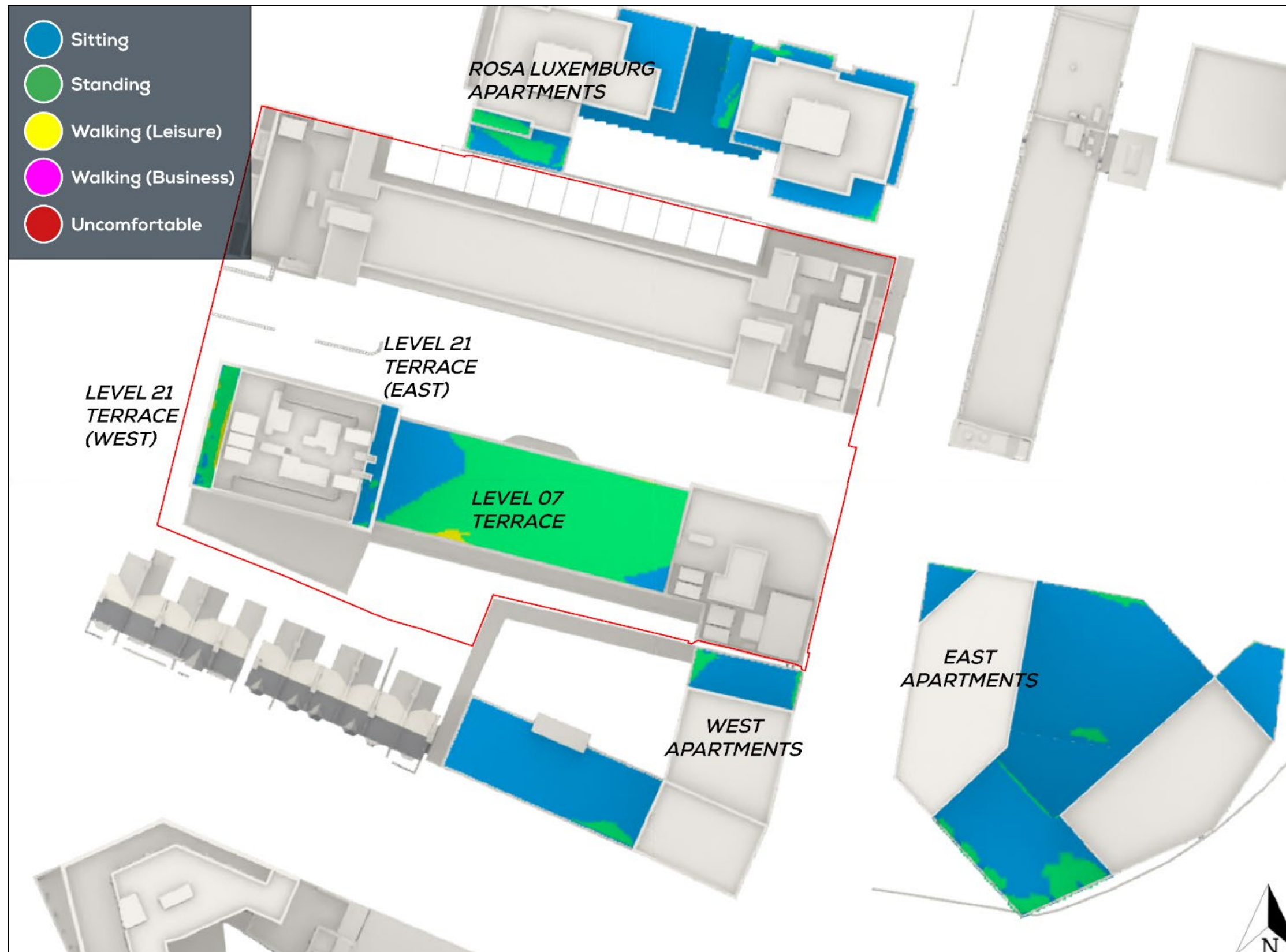


Figure 8.18 Configuration 2: Amenity Terraces, Strong Winds (Annotated as described in Table 8.3)

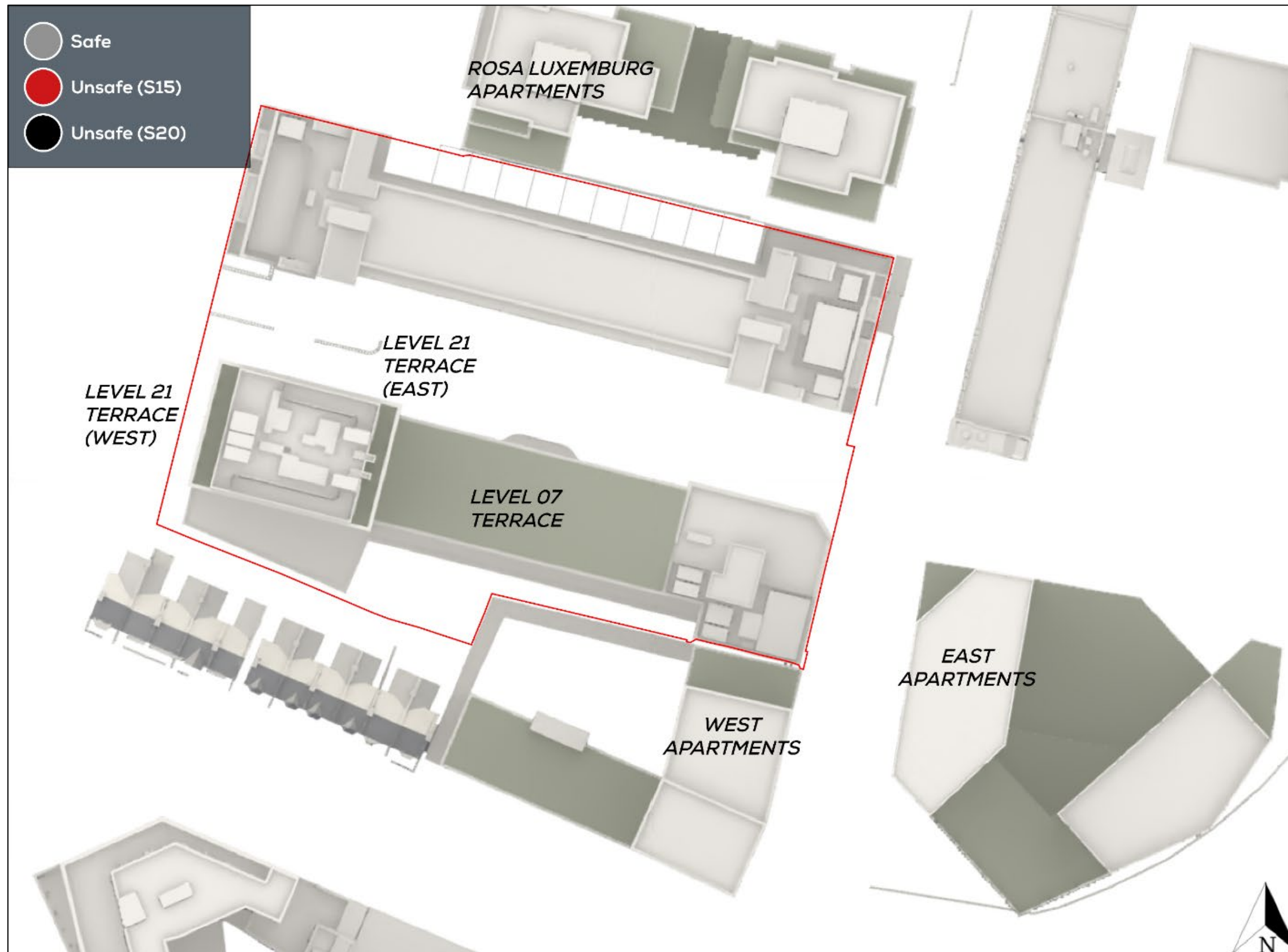


Figure 8.19 Configuration 2: Proposed Balconies, Summer (Annotated as described in Table 8.3)

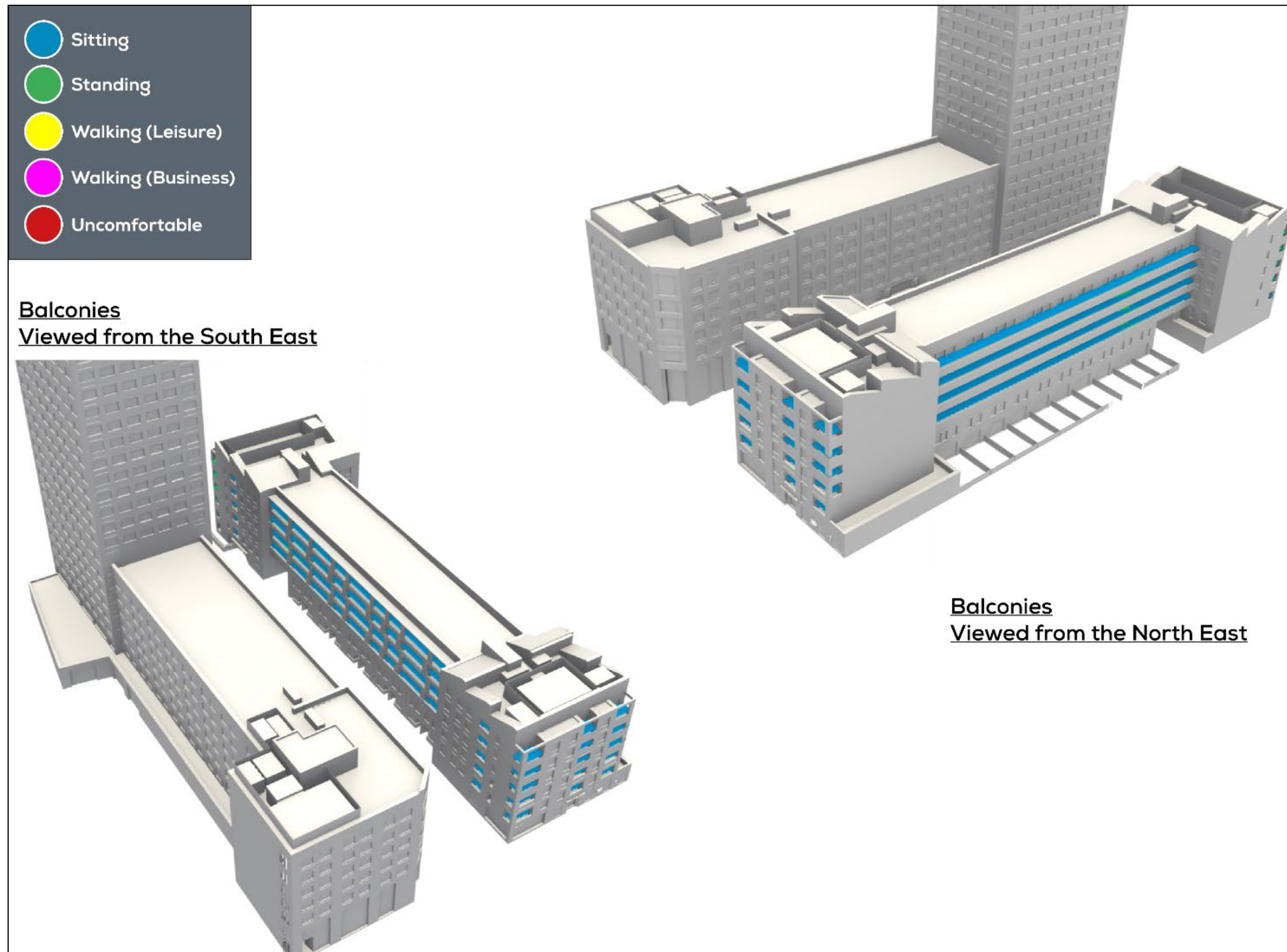
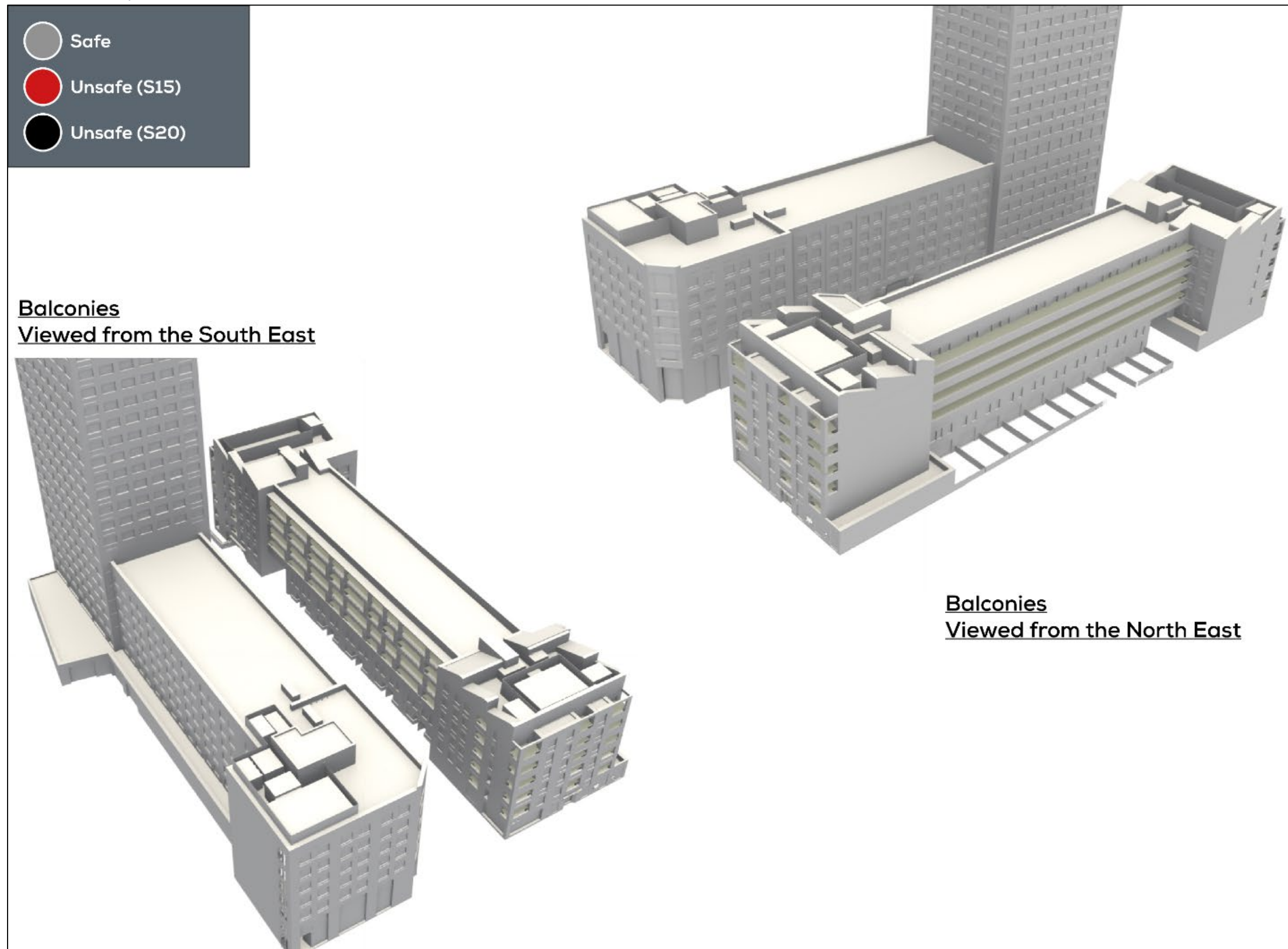


Figure 8.20 Configuration 2: Proposed Balconies, Strong Winds (Annotated as described in Table 8.3)



MITIGATION, MONITORING AND RESIDUAL EFFECTS

Enabling and Construction Mitigation

- 8.94 As all enabling and construction wind effects are considered Negligible (not significant), no specific construction-phase wind mitigation is required beyond the implementation of the operational mitigation measures and standard construction management controls.

Completed Development Mitigation

- 8.95 The receptors requiring mitigation are those locations previously identified as being subject to Minor Adverse (significant) wind effects.

Ground Level Amenity

On site

- 8.96 A Minor Adverse (**significant**) wind effect was identified in the ground level play area (marked P1) where conditions were suitable for a mix of standing and leisure walking, in summer, rather than the target of sitting and standing.
- 8.97 A Minor Adverse (**significant**) wind effect was identified in a ground floor seating location (marked S1 and circled previously) where conditions were suitable for a mix of sitting and standing in summer, rather than the target of sitting.
- 8.98 A Minor Adverse (**significant**) wind effect was identified on the proposed Level 7 terrace where conditions were suitable for a mix of sitting, standing and leisure walking, in summer, rather than the target of sitting and standing.
- 8.99 Mitigation for the above was tested in the form of the proposed tree planting scheme. At ground level this consisted of the following:
- 6 Pinus Pinea (Evergreen), 6m height at installation, 2m clearstem
 - 7 Betula Pendula 'Fastigiata' (Deciduous), 4m height at installation, 2m clearstem
 - 5 Prunus Hillieri Spire (Deciduous), 6m height at installation, 2m clearstem
 - 4 Sorbus Autumn Spire (Evergreen), 5m height at installation, 2m clearstem
 - 5 Tilia Cortada (Deciduous), 6m height at installation, 2m clearstem
 - 11 Gleditsia Triacanthos (Deciduous), 6m height at installation, 2m clearstem
 - 7 Amelanchier Ballerina (Deciduous), 3.5m height at installation, 2m clearstem
 - 5 Fastigate Hornbeam (Semi-Evergreen), 6m height at installation, 2m clearstem
- 8.100 At terrace (Level 7) level this consisted of the following:
- 3 Acer Griseum (Deciduous), 2.5m height at installation, multi-stem
 - 4 Amelanchier Lamarckii (Deciduous), 2.5m height at installation, multi-stem
 - 4 Pinus Mugo (Evergreen), 1.5m height at installation, multi-stem
 - 3 Olea Europaea (Evergreen), 1.5m height at installation, multi-stem

- 8.101 Figure 8.21 shows the tree landscaping plan (existing and proposed) as tested.

- 8.102 Since the CFD testing described above, the tree planting scheme has been revised. The revised scheme incorporates 11 additional trees relative to the layout tested which is inclusive of 6 small trees on the Block A central roof, 2 deciduous Amelanchier Ballerinas (3.5m tall), 1 evergreen Fastigate Hornbeam (6m), 1

deciduous Tilia Cortada (6m), 1 evergreen Sorbus Autumn Spire (5m) and 1 deciduous Prunus Hillieri Spire (6m). The locations have been adjusted for 10 trees, and the specifications have changed for 3 trees at ground level. An exact breakdown of the changes to the tree layout is demonstrated in Figure 8.23.

- 8.103 The revised landscaping scheme has not been separately modelled in CFD. On a qualitative, professional judgement basis, the additional trees are expected to provide a greater sheltering effect than the tested scheme, given the increase in vegetative massing within the same key locations identified as benefiting from mitigation.

- 8.104 On this basis, wind conditions at P1 and the Level 7 terrace following implementation of the revised landscaping scheme are expected to be at least as favourable as, and potentially more favourable than, those identified through CFD testing of the earlier version of the landscaping scheme.

- 8.105 Figure 8.23 shows the revised tree landscaping strategy.

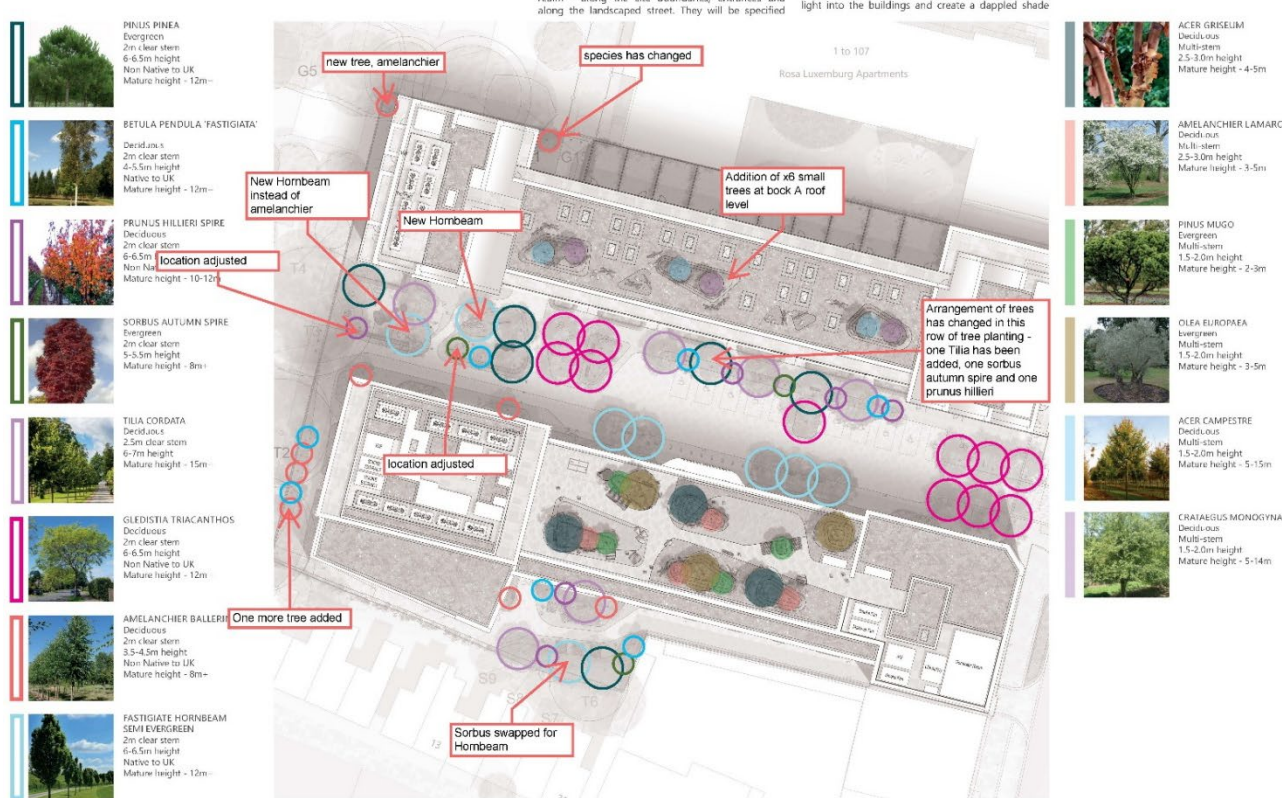
Figure 8.21 Tree Landscaping (existing and proposed) as tested



Figure 8.22 Tree landscaping Strategy as tested



Figure 8.23 Revised Tree Landscaping Strategy



Configuration 3: Proposed Development with Landscaping and Existing Surrounds

8.106 Configuration 3 represents the completed Proposed Development including existing surrounds. It should be noted that, in contrast to Configuration 2, this configuration includes proposed tree planting (as per Figure 8.21). The sensitive receptor locations are shown in Figure 8.5, Figure 8.6 and Figure 8.7. The following figures are presented with regards to the testing of this configuration:

- Windiest season conditions at ground level for the Proposed Development with Landscaping and Existing Surrounds are shown in Figure 8.24;
- Summer conditions at ground level for the Proposed Development with Landscaping and Existing Surrounds are shown in Figure 8.25;
- Strong winds at ground level for the Proposed Development with Landscaping and Existing Surrounds are shown in Figure 8.26 ;
- Summer conditions at terrace levels for the Proposed Development with Landscaping and Existing Surrounds are shown in Figure 8.27;
- Strong winds at terrace levels for the Proposed Development with Landscaping and Existing Surrounds are shown in Figure 8.28;
- Summer conditions at balcony levels for the Proposed Development with Existing Surrounds are shown in Figure 8.29; and
- Strong winds at balcony levels for the Proposed Development with Existing Surrounds are shown in Figure 8.30.

Pedestrian Comfort

8.107 All of the regions which were suitable for Configuration 2 remained suitable for Configuration 3. Conditions are now calmer within the public realm and on the Level 7 terrace of the Proposed Development. Conditions for those regions which were subject to adverse effects are reported below.

Ground Level Amenity

On Site

8.108 The play area (marked P1) required mitigation to achieve conditions suitable for a mixture of sitting and standing in summer. The trees marked "1" to "4" in Figure 8.22 have formed the basis for this mitigation. The play area is now suitable for the intended use, and the residual effect is Negligible (not significant).

Seating

On Site

8.109 The seating area (marked S1 and circled) required mitigation to achieve conditions suitable for sitting in summer. "3" and "4" in Figure 8.22 have formed the basis for this mitigation. This seating area is now suitable for the intended use, and the residual effect is Negligible (not significant).

Terrace Level Amenity

On-Site

8.110 The Level 7 terrace required mitigation to achieve conditions suitable for a mixture of sitting and standing in summer. The trees marked "5" to "7" in Figure 8.22 have formed the basis for this mitigation. This terrace is now suitable for the intended use and the residual effect is Negligible (not significant).

Strong Winds

On-Site

8.111 There are no winds exceeding strong wind limits (exceeding 15m/s for 0.025% of the year) at either ground or elevated levels.

Figure 8.24 Configuration 3: Proposed Development with Landscaping and Existing Surrounds, Ground, Windiest Season (Annotated as described in Table 8.3)

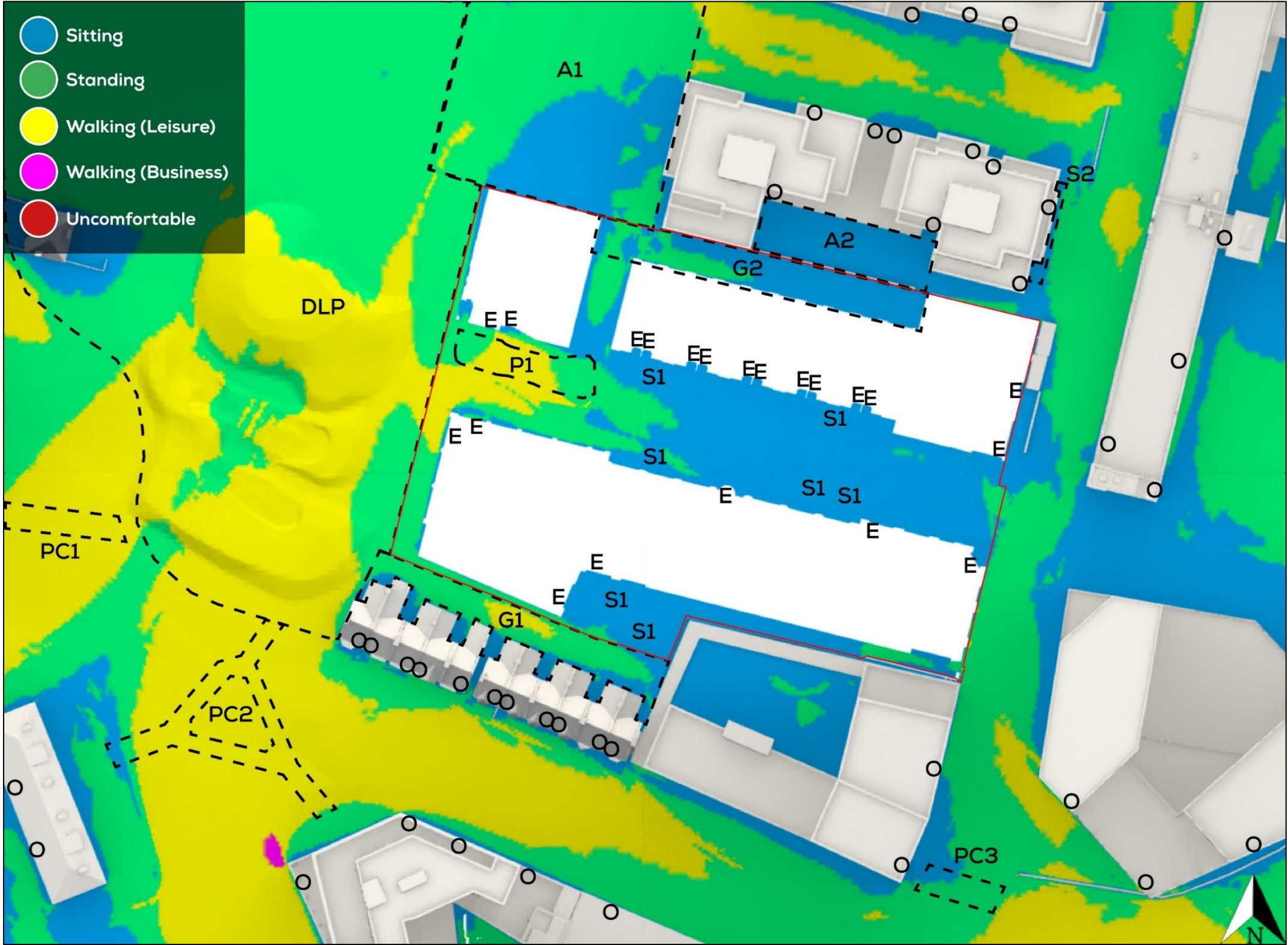


Figure 8.25 Configuration 3: Proposed Development with Landscaping and Existing Surrounds, Ground, Summer (Annotated as described in Table 8.3)

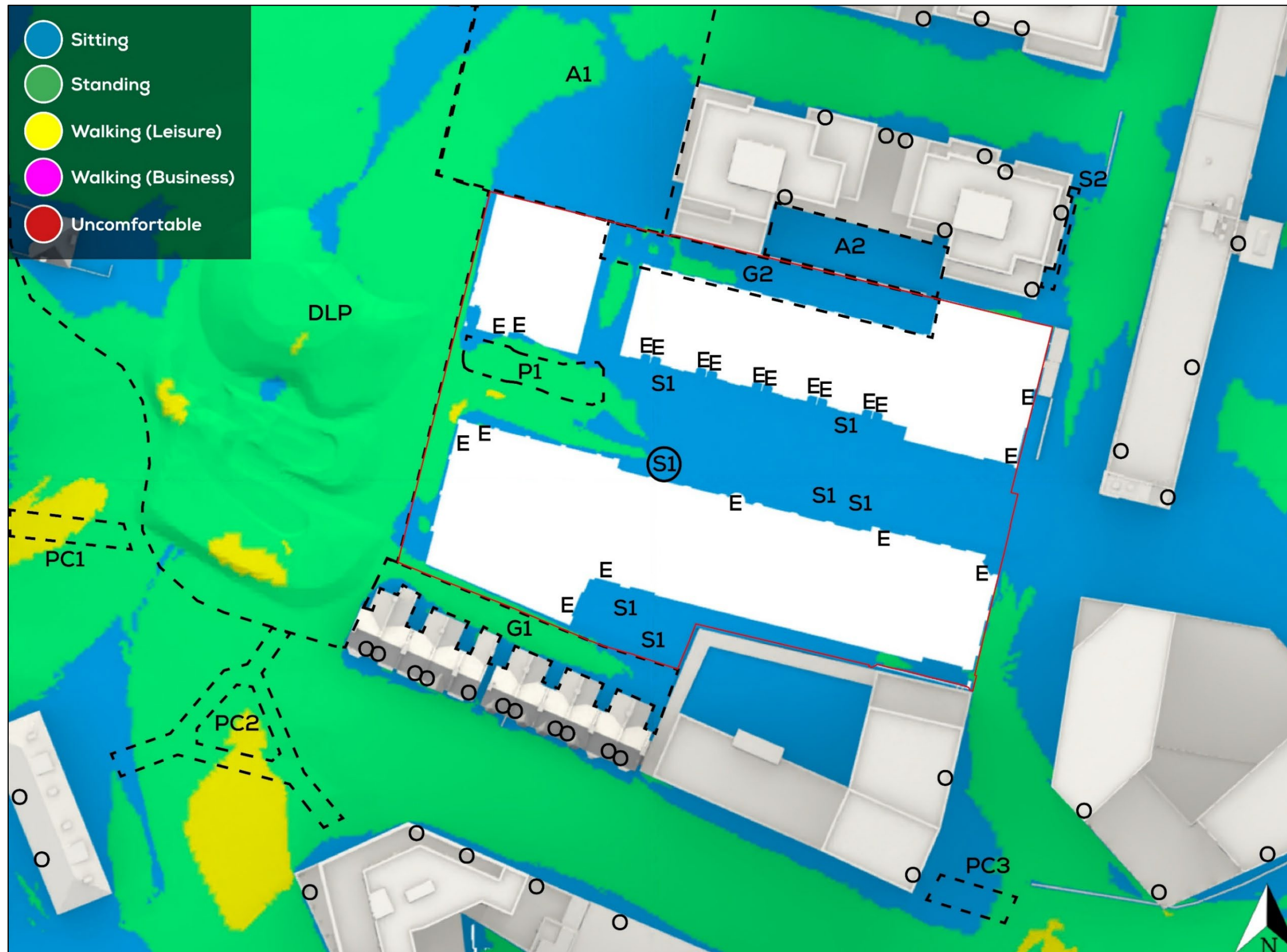


Figure 8.26 Configuration 3: Proposed Development with Landscaping and Existing Surrounds, Ground, Strong Winds (Annotated as described in Table 8.3)



Figure 8.27 Configuration 3: Proposed Development with Landscaping and Existing Surrounds, Amenity Terraces, Summer (Annotated as described in Table 8.3)

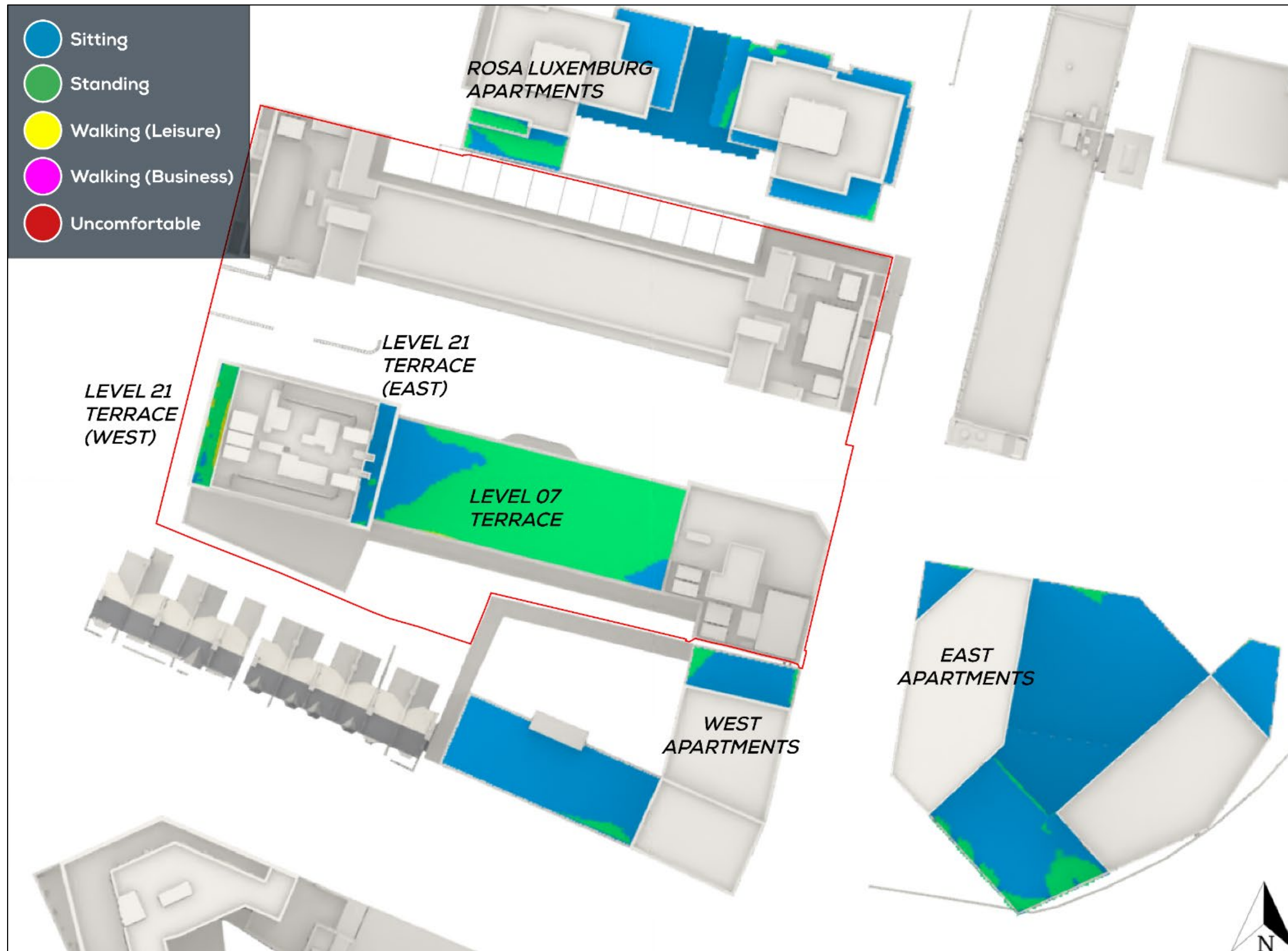


Figure 8.28 Configuration 3: Proposed Development with Landscaping and Existing Surrounds, Amenity Terraces, Strong Winds (Annotated as described in Table 8.3)

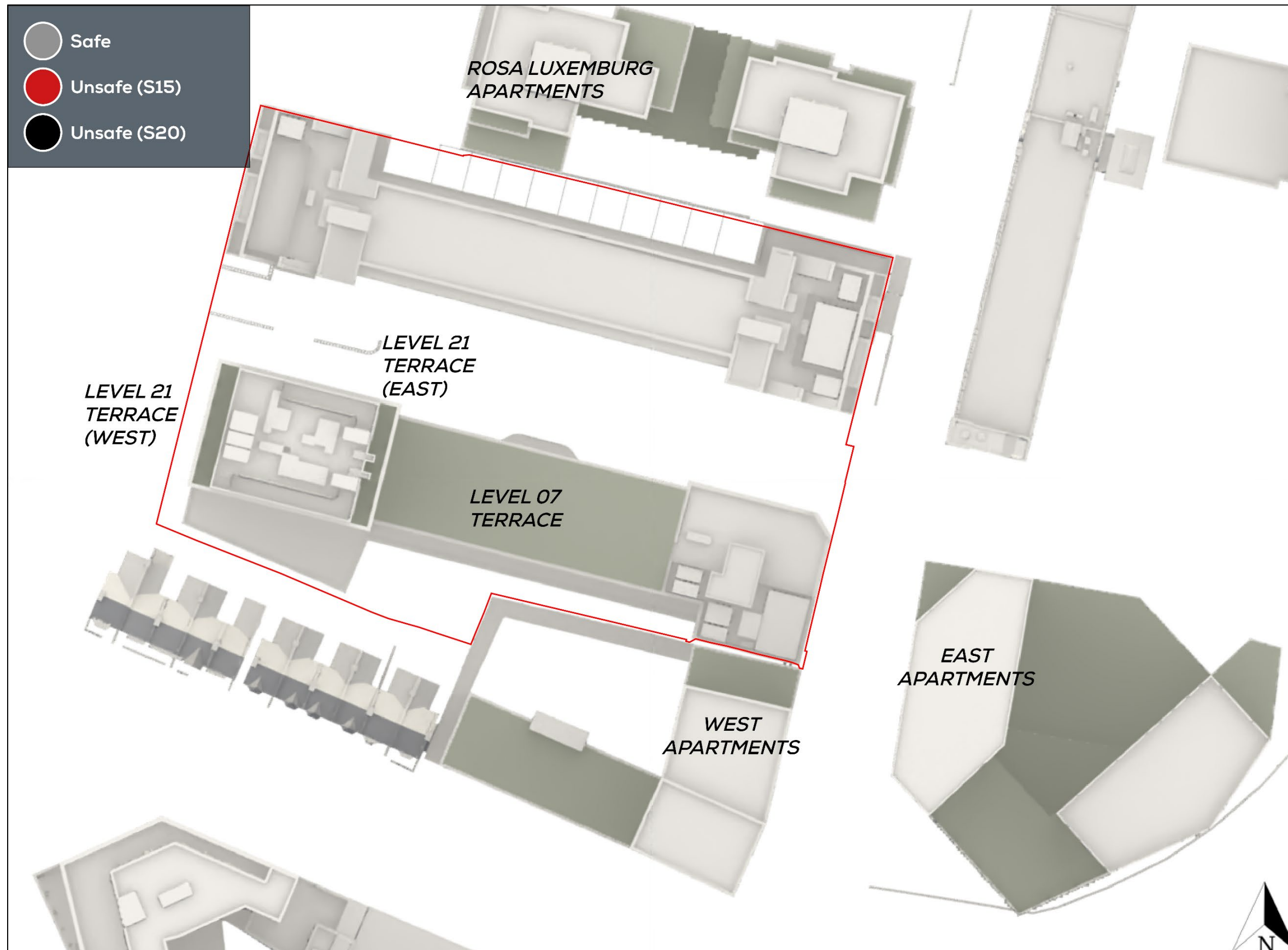


Figure 8.29 Configuration 3: Proposed Development with Landscaping and Existing Surrounds, Proposed Balconies, Summer (Annotated as described in Table 8.3)

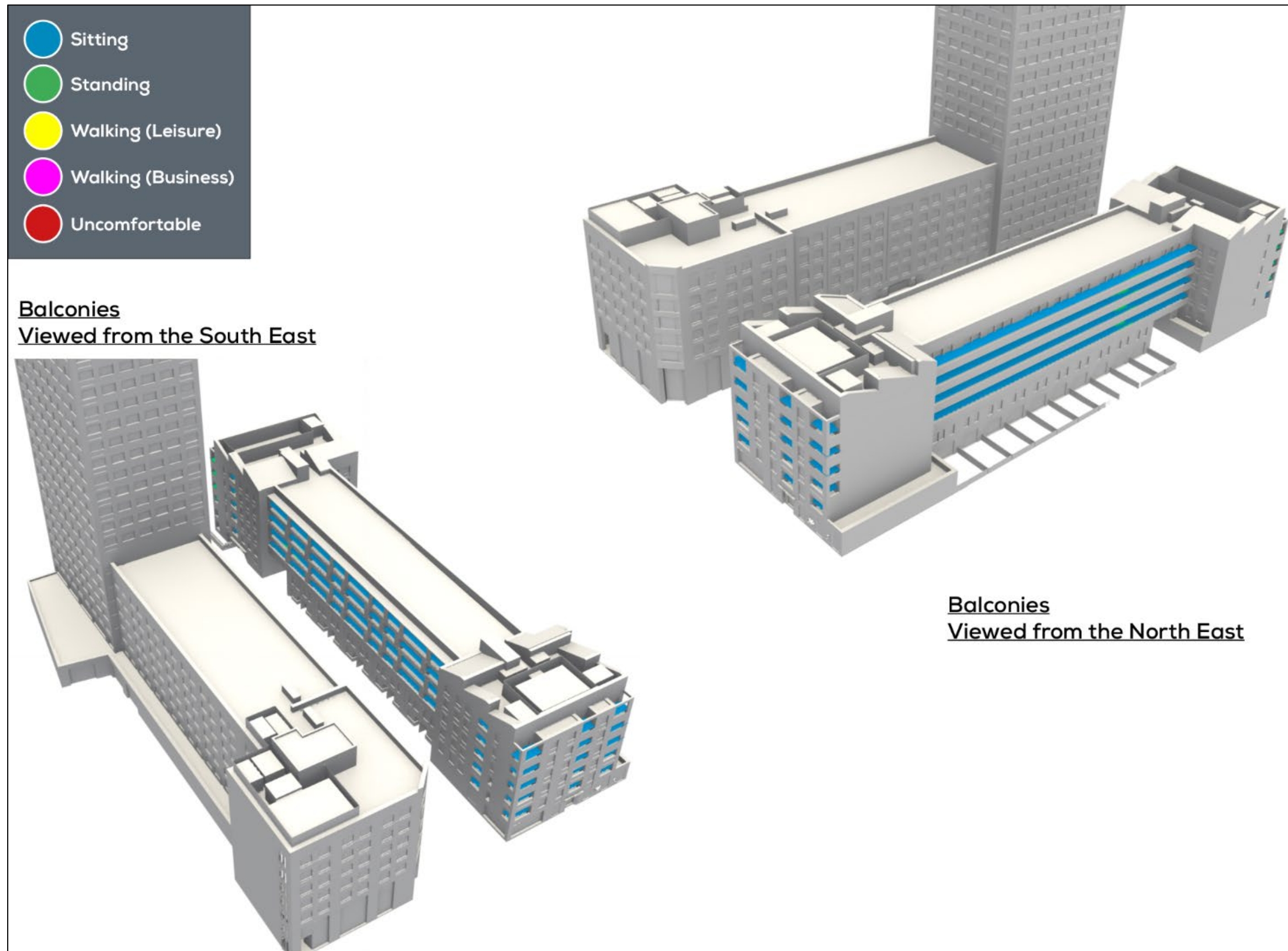
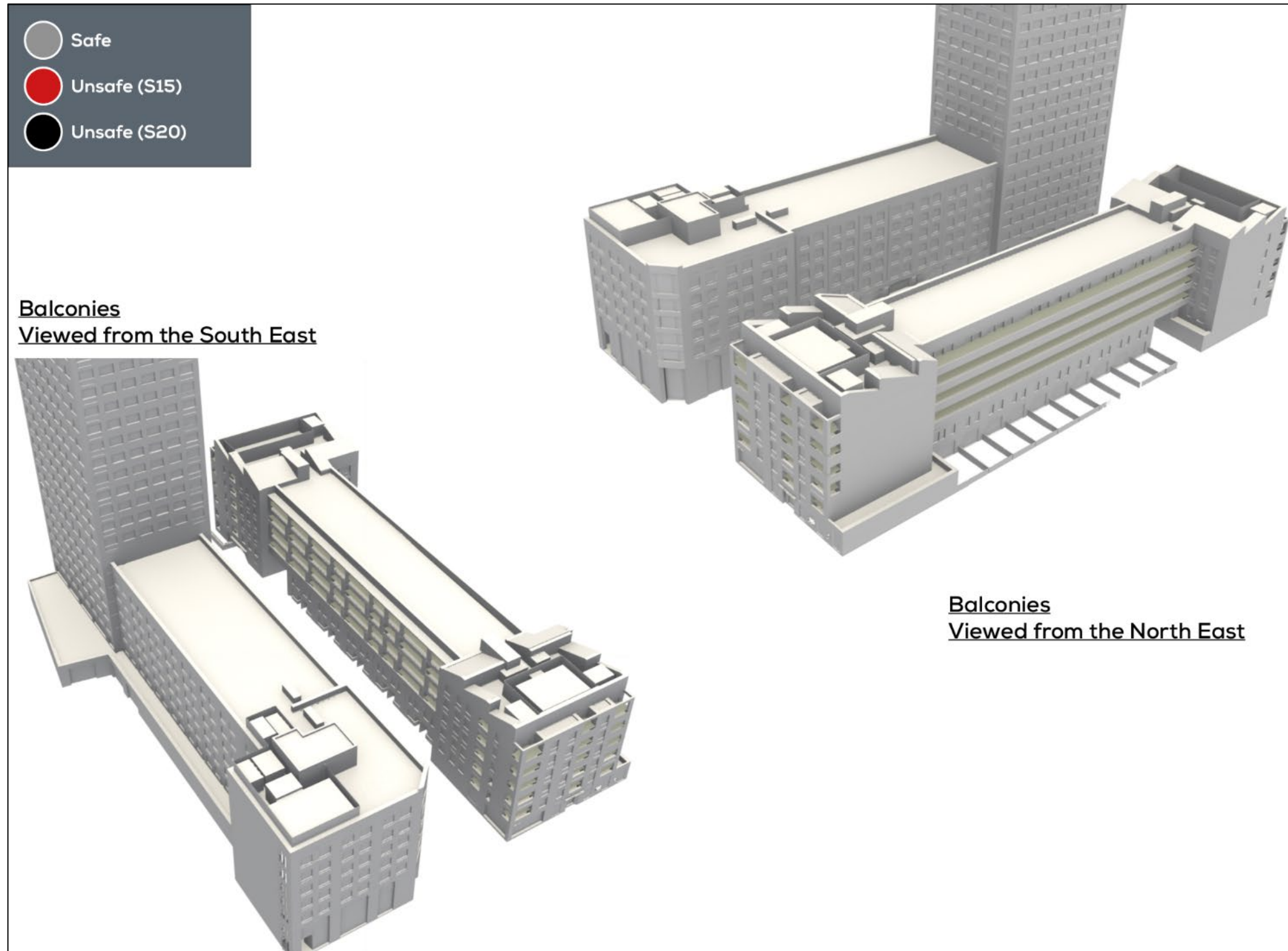


Figure 8.30 Configuration 3: Proposed Development with Landscaping and Existing Surrounds, Proposed Balconies, Strong Winds (Annotated as described in Table 8.3)



Residual Effects

8.112 All of the residual effects resulting from the Proposed Development, are presented in Table 8.4, identifying whether the effect is significant or not.

Table 8.4 Residual Effects

Receptor	Description of the Residual Effect	Scale and Nature	Significant / Not Significant	Geo	D I	P T	St Mt Lt
Enabling and Construction							
On-site pedestrian users and occupants	Thoroughfares	Negligible	Not Significant	L	D	P	Lt
	Strong Winds			L	D	P	Lt
Off-site pedestrian users and occupants	Thoroughfares			L	D	T	St
	Entrances			L	D	T	St
	Amenity Spaces			L	D	T	St
	Private Residential Gardens			L	D	T	St
	Seating / Benches			L	D	T	St
	Pedestrian crossings			L	D	T	St
	Amenity Terraces			L	D	T	St
	Strong Winds			L	D	T	St
Completed Development							
On-site pedestrian users and occupants	Thoroughfares	Negligible	Not Significant	L	D	P	Lt
	Entrances			L	D	P	Lt
	Amenity Spaces			L	D	P	Lt
	Play Areas			L	D	P	Lt
	Private Residential Gardens			L	D	P	Lt
	Seating / Benches			L	D	P	Lt
	Amenity Terraces			L	D	P	Lt
	Balconies			L	D	P	Lt
	Strong Winds			L	D	P	Lt
Off-site pedestrian users and occupants	Thoroughfares			L	D	P	Lt
	Pedestrian Crossings			L	D	P	Lt
	Entrances			L	D	P	Lt
	Amenity Spaces			L	D	P	Lt
	Private Residential Gardens			L	D	P	Lt
	Seating / Benches			L	D	P	Lt
	Amenity Terraces			L	D	P	Lt
	Strong Winds			L	D	P	Lt
	Amenity Space (A2) south of Rosa Luxemburg Apartments	Minor Beneficial	Not Significant	L	D	P	Lt
Notes: Residual Effect - Scale = Negligible / Minor / Moderate / Major - Nature = Beneficial or Adverse Geo (Geographic Extent) = Local (L), Borough (B), Regional (R), National (N) D = Direct / I = Indirect P = Permanent / T = Temporary St = Short Term / Mt = Medium Term / Lt = Long Term							

Receptor	Description of the Residual Effect	Scale and Nature	Significant / Not Significant	Geo	D I	P T	St Mt Lt
N/A = not applicable / not assessed							

ASSESSMENT OF THE FUTURE ENVIRONMENT

Cumulative Effects Assessment

8.113 The cumulative schemes (presented within **ES Volume 1, Chapter 2: EIA Methodology** and **ES Volume 3 Appendix: EIA Methodology - Annex 2**) were reviewed to determine which would be relevant to wind conditions on and directly around the site.

8.114 Of the cumulative schemes identified, the following schemes are considered sufficiently advanced and were therefore included in the baseline:

- Strategic Development Partnership Sites (HGY/2018/2223); and
- 29-33 The Hale (HGY/2021/2304).

8.115 The following cumulative schemes were also included in Configuration 4:

- Berol Quarter (HGY/2023/0261 & HGY/2025/0930);

8.116 The following qualitative cumulative assessments have been carried out:

- Cumulative Assessment 1 – the Proposed Development with quantitative consideration of Berol Quarter; and
- Cumulative Assessment 2 – the Proposed Development with qualitative consideration of the Tottenham Hale Retail Park Site Allocation; and
- Cumulative Assessment 3 – the Proposed Development with qualitative consideration of the Tottenham Hale Retail Park Site Allocation, in addition to qualitative consideration of the emerging proposals for the Cannon Factory across the enabling and construction works and once the Proposed Development and surrounding cumulative schemes are complete and operational.

Cumulative Assessment 1

Enabling and Construction

8.117 During off site enabling and construction, it is expected that conditions will gradually change from those measured for the Proposed Development with landscaping and Existing Surrounds (Configuration 3) to those measured for the Proposed Development with landscaping in the Cumulative Surrounds (Configuration 4). As such (in accordance with industry best practice for wind microclimate assessments), enabling and construction effects can be inferred from completed development effects.

8.118 Following implementation of the embedded and tested mitigation measures, all residual operational wind effects are negligible (not significant); accordingly the associated enabling and construction effects are also considered negligible (not significant)

Completed Development

Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds

8.119 Configuration 4 represents the completed Proposed Development including cumulative surrounds. It should be noted that, in contrast to Configuration 3, this configuration includes proposed tree planting (as per Figure

8.21). The sensitive receptor locations are shown in Figure 8.5, Figure 8.6 and Figure 8.7. The following figures are presented with regards to the testing of this configuration:

- Windiest season conditions at ground level for the Proposed Development with Landscaping and Cumulative Surrounds are shown in Figure 8.31;
- Summer conditions at ground level for the Proposed Development with Landscaping and Cumulative Surrounds are shown in Figure 8.32;
- Strong winds at ground level for the Proposed Development with Landscaping and Cumulative Surrounds are shown in Figure 8.33;
- Summer conditions at terrace levels for the Proposed Development with Landscaping and Cumulative Surrounds are shown in Figure 8.34;
- Strong winds at terrace levels for the Proposed Development with Landscaping and Cumulative Surrounds are shown in Figure 8.35;
- Summer conditions at balcony levels for the Proposed Development with Cumulative Surrounds are shown in Figure 8.36; and
- Strong winds at balcony levels for the Proposed Development with Cumulative Surrounds are shown in Figure 8.37.

Pedestrian Comfort

- 8.120** All of the regions which were suitable for Configuration 3 remained suitable for Configuration 4. Conditions are now calmer within the public realm and on the Level 7 terrace of the Proposed Development. Conditions for those regions which were subject to adverse effects are reported below.

Ground Level Amenity

On Site

- 8.121** The play area (marked P1) remains suitable for the intended use and the residual effect is Negligible (not significant).

Seating

On Site

- 8.122** The seating area (marked S1 and circled) remains suitable for the intended use and the residual effect is Negligible (not significant).

Terrace Level Amenity

On-Site

- 8.123** The Level 7 terrace remains suitable for the intended use and the residual effect is Negligible (not significant).

Strong Winds

On-Site

- 8.124** There are no winds exceeding strong wind limits (exceeding 15m/s for 0.025% of the year) at either ground or elevated levels.

Cumulative Assessment 2

Enabling and Construction

- 8.125** As the Tottenham Hale Retail Park site allocation does not yet have a confirmed construction programme, it is not possible to establish whether the enabling and construction works for this scheme would directly overlap

with the construction programme for the Proposed Development. On a precautionary basis, this assessment assumes the potential for temporal overlap between the two construction programmes.

- 8.126** Where construction programmes overlap, cumulative effects during the enabling and construction phase would primarily relate to temporary alterations to local wind flow arising from the presence of construction plant, hoarding, scaffolding and partially completed structures on the Tottenham Hale Retail Park site. Whilst these features have the potential to locally accelerate or redirect wind flow at ground level, particularly around site boundaries and hoarding lines, given the separation distance of approximately 150m and the presence of Plot B (Ferry Island), any such effects are anticipated to be localised to the immediate vicinity of the Tottenham Hale Retail Park site itself, with limited potential to materially alter wind conditions at pedestrian receptors within the Site during this phase. Therefore, there will be no impact and the scale is Negligible, the geographical extent is localised, indirect and all effects are temporary and short term.

Completed Development

- 8.127** The Tottenham Hale Retail Park site allocation is located approximately 150m south of the site. The allocation covers 4.9ha and provides for 1,500+ homes, with the potential for high-rise buildings.

- 8.128** The site's location, further south of the SPD Site (Plot B - Ferry Island), places it within the same southerly approach as the under construction development that already provides shelter to the site from southerly winds. Should the Tottenham Hale Retail Park allocation come forward with buildings of a comparable or greater scale, it would be expected to reinforce the sheltering effect currently provided by Plot B and result in calmer conditions on site. On this basis, the cumulative effect of this allocated scheme is anticipated to have a negligible impact in wind microclimate terms.

Cumulative Assessment 3

Enabling and Construction

- 8.129** The Cannon Factory site is located to the north-west of the site. As the dominant wind direction affecting the area is south-westerly, the Cannon Factory site does not lie within the principal approach path of the prevailing winds. As such, construction activity on the Cannon Factory site (including plant, hoarding, scaffolding and partially completed structures) would not be expected to influence wind conditions at the Proposed Development.

- 8.130** No additional or new enabling and construction related cumulative effects are anticipated as a result of the Proposed Development coming forward in conjunction with the Cannon Factory scheme. The effect is assessed as:

- Nature: Negligible
- Scale: Negligible
- Geographic extent: N/A (no material effect at the site)
- Direct/Indirect: Indirect
- Permanence: Temporary
- Duration: Short term

- 8.131** This is consistent with the findings of the Cumulative Assessment 2, where no significant construction-phase cumulative effects were identified. The addition of the Cannon Factory scheme does not alter this conclusion, given its downwind location relative to the dominant wind directions.

Completed Development

8.132 Following completion, the Cannon Factory scheme would introduce additional massing to the north-west of the site, providing a sheltering effect, reducing the influence of north-westerly winds at the site and contributing to calmer wind conditions within the Proposed Development.

8.133 The additional cumulative effect of the completed Cannon Factory scheme, in conjunction with the Proposed Development, is assessed as:

- Nature: Beneficial
- Scale: Negligible
- Geographic extent: Localised
- Direct/Indirect: Indirect
- Permanence: Permanent
- Duration: Long term

8.134 This represents a beneficial addition to the findings of the Cumulative Assessment 2, where the general trend of increasing shelter from surrounding development was identified. The Cannon Factory scheme extends this benefit to the north-westerly direction specifically, rather than introducing any new adverse effect not already captured.

LIKELY SIGNIFICANT EFFECTS

8.135 There are no likely significant effects with regards to wind microclimate during the construction stage or the complete and operational stage of the Proposed Development following the implementation of the proposed landscaping mitigation.

Figure 8.31 Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds, Ground, Windiest Season (Annotated as described in Table 8.3)

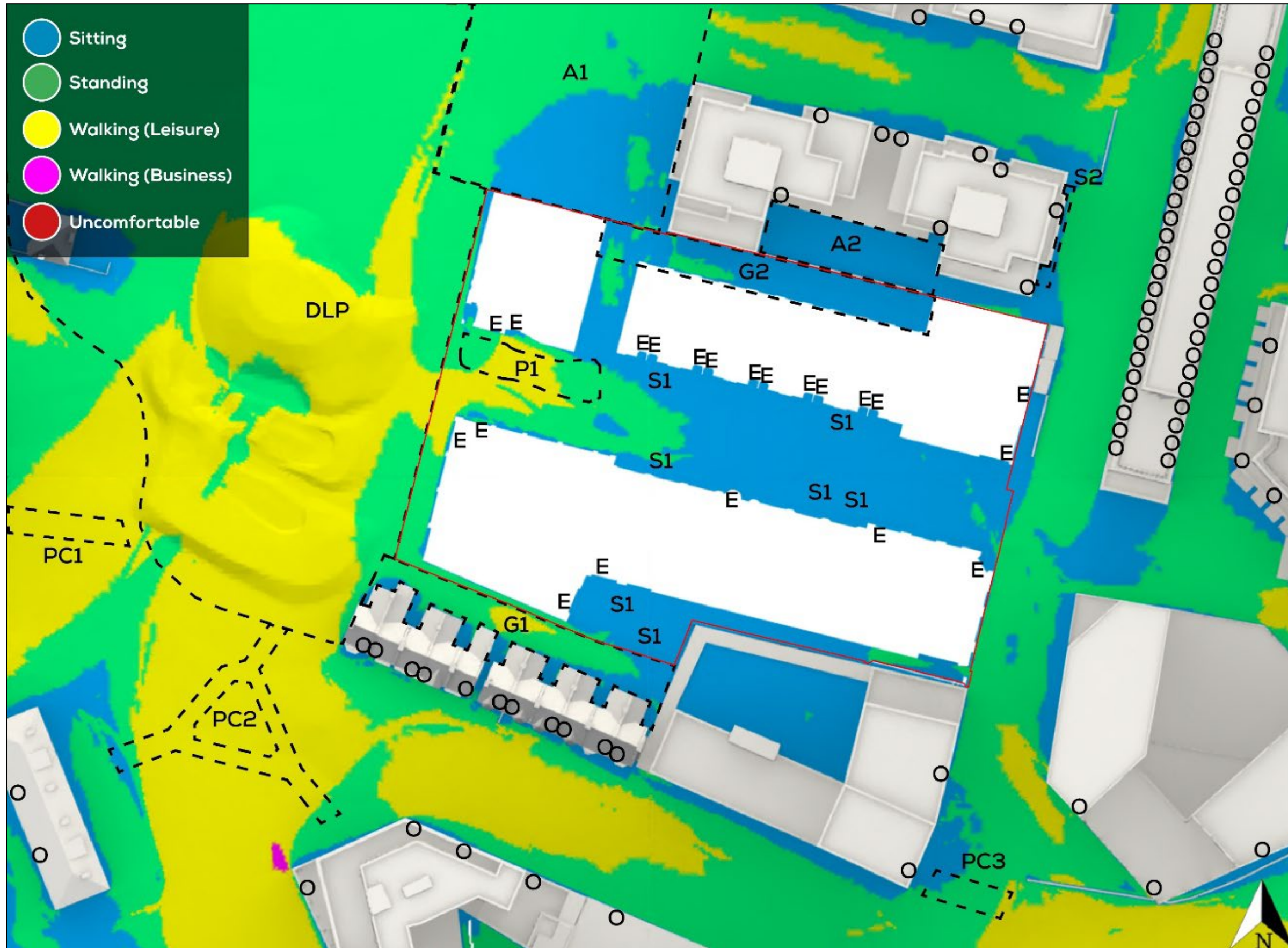


Figure 8.32 Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds, Ground, Summer (Annotated as described in Table 8.3)

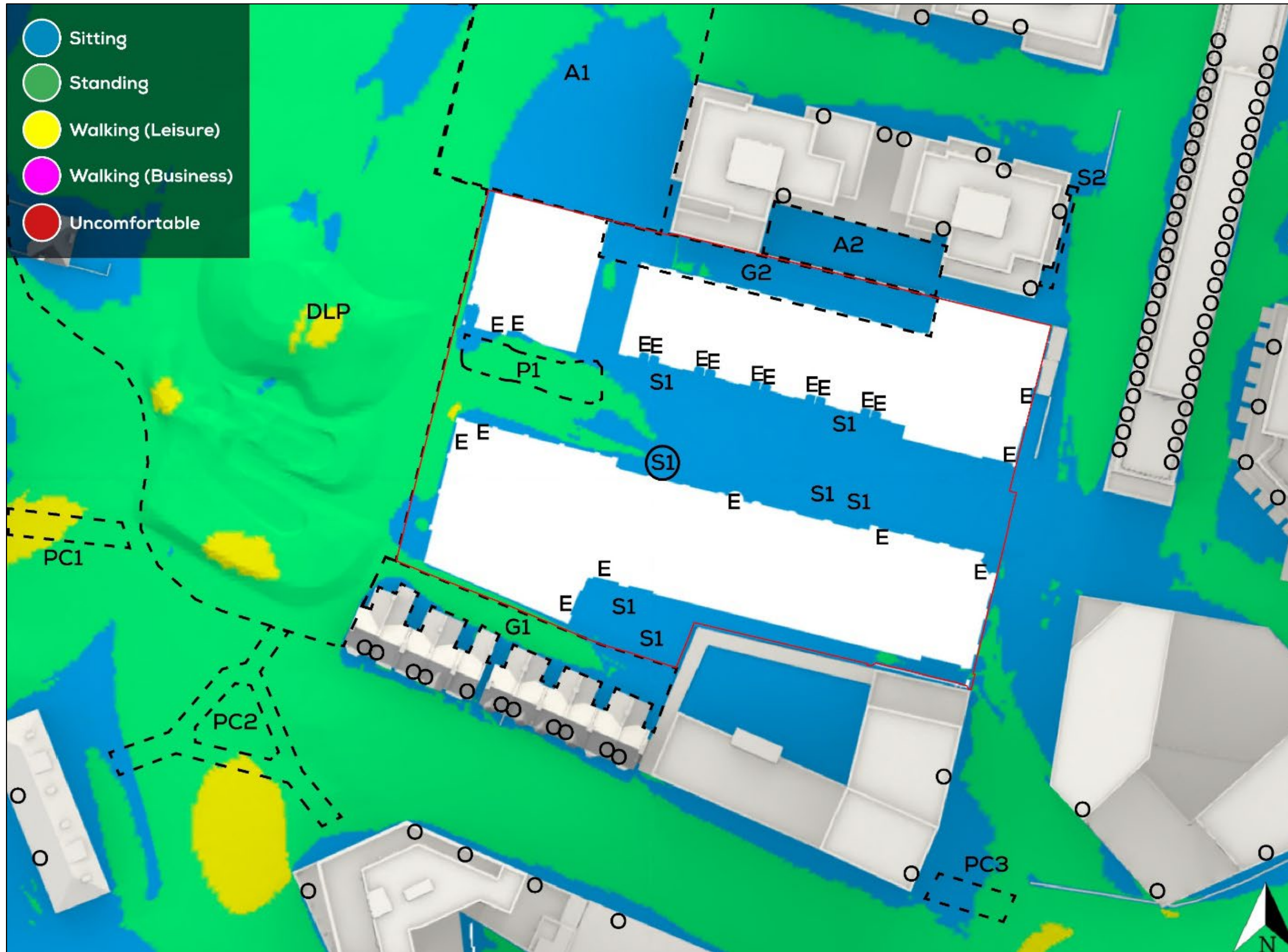


Figure 8.33 Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds, Ground, Strong Winds (Annotated as described in Table 8.3)



Figure 8.34 Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds, Amenity Terraces, Summer (Annotated as described in Table 8.3)



Figure 8.35 Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds, Amenity Terraces, Strong Winds (Annotated as described in Table 8.3)

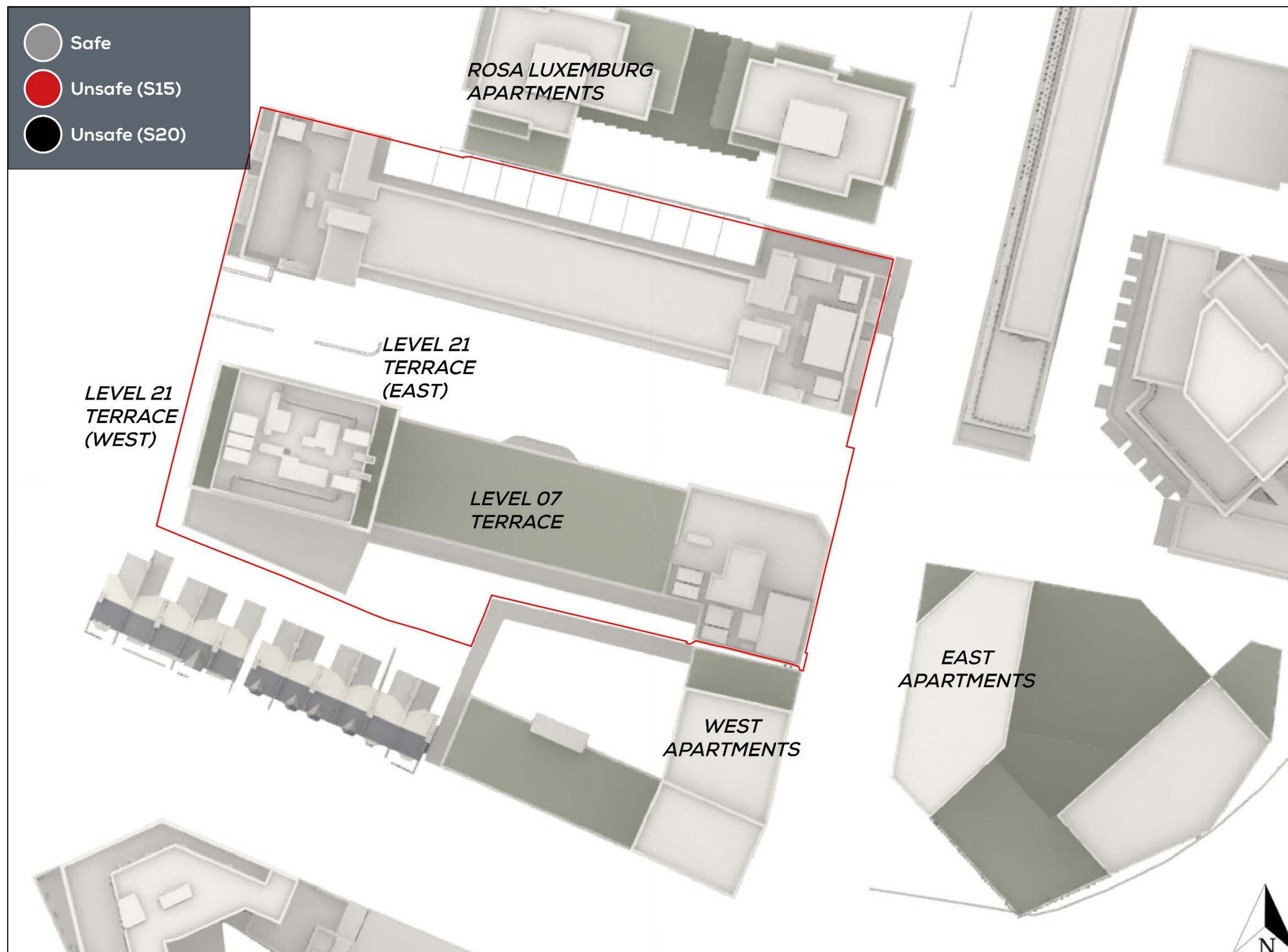


Figure 8.36 Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds, Proposed Balconies, Summer (Annotated as described in Table 8.3)

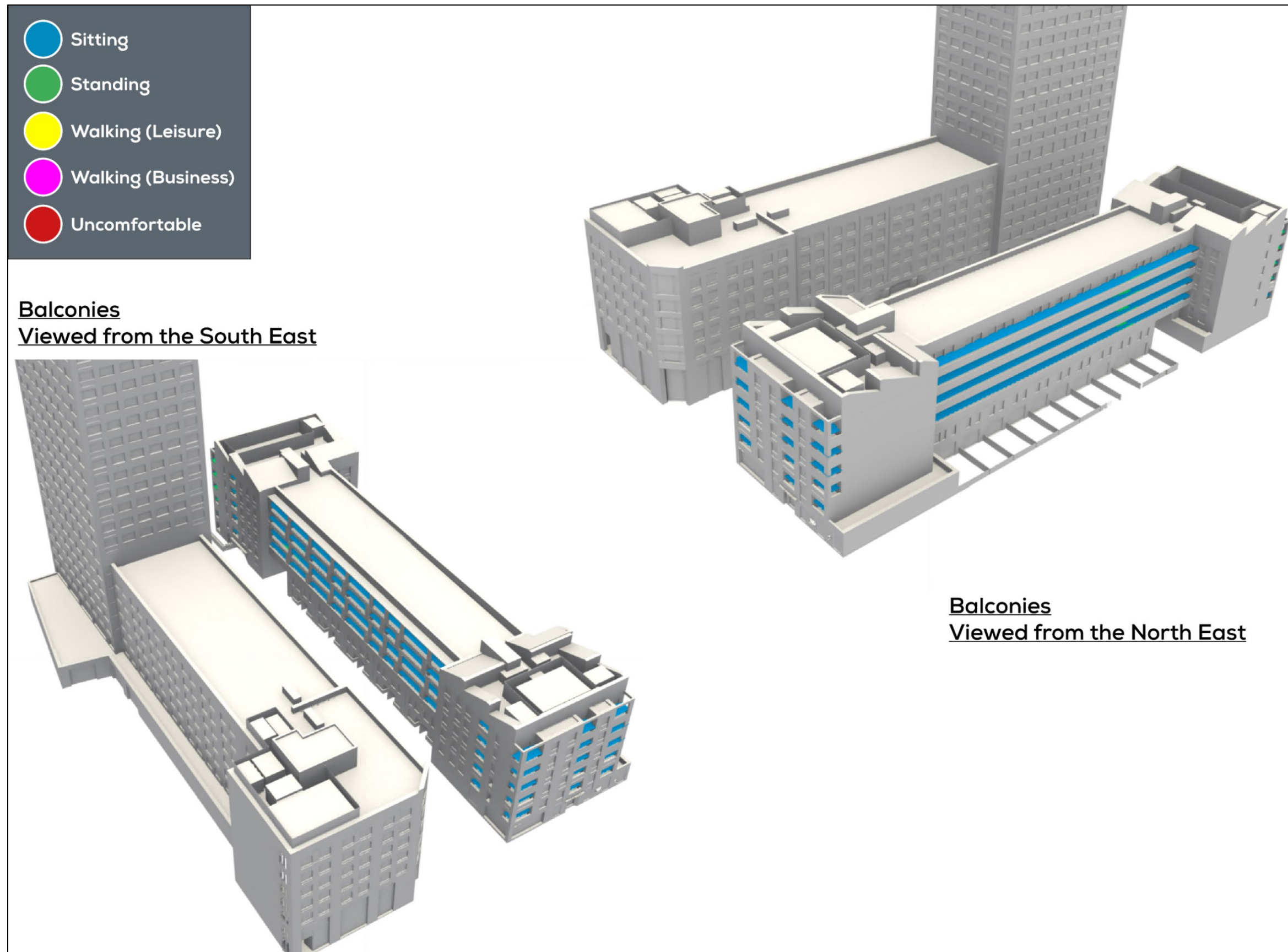


Figure 8.37 Configuration 4: Proposed Development with Landscaping and Cumulative Surrounds, Proposed Balconies, Strong Winds (Annotated as described in Table 8.3)

