

Chapter 10: Wind Microclimate

WIND MICROCLIMATE	
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COMPARISON OF EFFECTS	The assessment presented within this ES Chapter is based on the revised proposals (referred to as the 'Proposed Development'), as described in ES Volume 1, Chapter 0 'Preface' and ES Volume 1, Chapter 4 'The Proposed Development'. A comparison of the findings and conclusions of this assessment against those of the December 2018 ES in relation to wind microclimate is provided in the section of this ES Chapter titled 'Comparison of Effects'.
SUPPORTING APPENDIX	ES Volume 3 – Appendix: Wind Microclimate: Annex 1: Legislative and Planning Policy Context; and Annex 2: Wind Microclimate Technical Report.
KEY CONSIDERATIONS	This ES Chapter assesses the wind microclimate effects of the Proposed Development on the site and if the resulting changes in wind speeds would be suitable, in regard to comfort and safety, for the intended usage of sensitive locations in and around the site.
CONSULTATION	<p>An EIA Scoping Report was prepared and submitted to the LBS for discussion on the 24th September 2018 in relation to the 2018 Environmental Statement (ES) (see ES Chapter 2 – EIA Methodology (Volume 1)). Informal feedback on the Scoping Report was received from the LBS on the 29th November 2018 in the form of a high level review (the 'LBS Review') with recommendations for consideration within the ES. The LBS Review comments were incorporated where appropriate within the 2018 ES that was submitted in support of the planning application to the LBS. A summary of the key points raised in the LBS Review in terms of the approach and methodology is presented within Annex A of this ES Chapter. This table signposts where these issues have been addressed within the ES Chapter.</p> <p>In addition to the Scoping Process, the 2018 ES was reviewed by an independent third party (Land Use Consultants (LUC)) on behalf of the LBS. The feedback received from LUC on the 2018 ES was responded to at the time and has been, as relevant, incorporated into this 2021 ES, thus ensuring that the 2021 ES for the revised scheme is comprehensive in terms of scope and addresses requested clarifications and additional information points raised previously by LUC on behalf of the LBS pursuant to Regulation 25 of the EIA Regulations. The LUC review comments and subsequent responses relating to the wind microclimate assessment have been considered in this ES Chapter where relevant.</p> <p>The 2018 scoping process was undertaken in detail and has provided the Applicant, Trium and RWDI with sufficient knowledge of the site and the surrounding area to be able to determine the scope of the EIA for the 2021 revised scheme.</p> <p>In October 2020, an EIA scoping note was issued to the GLA (see ES Chapter 2 – EIA Methodology (Volume 1)). The note confirms that in determining the scope of the EIA for the amended scheme, reference has been made to the September 2018 Scoping Report, the November 2018 LBS Review, the 2018 ES and the LUC Review. A further scoping meeting (virtual) was held with the GLA on 8th September 2021 to review and confirm the approach to the EIA.</p>

ASSESSMENT METHODOLOGY

Defining the Baseline

Current Baseline Conditions

- 10.1 The baseline conditions across the existing site and the surroundings have been defined using wind tunnel testing to provide a detailed, quantitative assessment. The baseline conditions are reflected within the wind scenario – 'Configuration 1: Existing Site with Existing Surrounding Buildings' (also referred as the 'Baseline Scenario'). The on-site baseline scenario is considered to be the temporary food, drink and art market currently occupying the site as, due to the presence of the market being expected to remain prior to construction of the Proposed Development. As such, wind conditions in this scenario would be those pedestrians who would be acclimatised to at and surrounding the site.
- 10.2 It should be noted that the baseline assessments within this ES Chapter were undertaken in December 2020, for the December 2020 ES, as part of the December 2020 scheme. However, a desktop review of the Baseline Conditions has been carried out since then in order to determine whether there would be any material changes. It is considered that the assessment of the Baseline undertaken in December 2020 remains materially unchanged (the site and the area surrounding the site in terms of built form has not changed since the Baseline Conditions were tested in the wind tunnel for the December 2020 ES) and as such, it is considered that an updated Baseline assessment is not required.
- 10.3 Mean and peak wind speeds have been measured (for both the windiest season (normally winter) to show the worst case scenario, and summer season for amenity spaces (amenity spaces are assessed during the

summer season as these areas are expected to be used most frequently during this period with an expectation of calmer conditions compared to other times of the year)) at locations across the existing site and at other surrounding buildings, paths, roads and areas of open spaces for 36 wind directions in 10° increments within a 360m radius of the site which is considered a large enough scale to ensure all wind effects are captured. Details of the tunnel test methodology is presented in the section 'Wind Tunnel Test Methodology' of this ES Chapter.

- 10.4 The results have been combined with long-term meteorological climate data for the London area (Heathrow and London City Airports). The meteorological data used in this assessment is deemed to be representative of the local wind microclimate for the London area. The meteorological data used is presented within 'Baseline Condition – Meteorological Data' section and shown in **Figure 10.1**.

- 10.5 Further detail on the wind tunnel testing methodology can be found in **ES Volume 3 – Appendix: Wind Microclimate**.

Evolution of the Baseline

- 10.6 The evolution of the baseline condition (in the event that the Proposed Development does not come forward) has been considered using professional judgement informed by the results of the Baseline Scenario (test Configuration 1) and the wind tunnel results undertaken as part of the cumulative effects assessment (see section 'Assessment of Future Environment – Cumulative Effects Assessment' of this ES Chapter).

- 10.7 The cumulative scenario provides information on the general changes, if any, in wind conditions around the site as a result of the cumulative schemes. This cumulative effect assessment takes account of the other cumulative schemes within the area surrounding the site (presented within **ES Chapter 2 – EIA Methodology (Volume 1)**).

Impact Assessment Methodology

Demolition and Construction

- 10.8 The potential microclimate effects during demolition and construction are assessed using the professional judgement of an experienced wind engineer, based on an assessment of the background wind climate at the site (the results of the tested configurations for the baseline and completed development scenarios) and an understanding of the likely effects based on RWDI's experience of assessing wind in the built environment.

- 10.9 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). Windier conditions (in terms of pedestrian comfort) will be tolerable across the active demolition and construction site as this area is not for typical pedestrian use (see section 'Assumptions and Limitations' below).

Assumptions and Limitations

- 10.10 It is assumed that there will be restricted access (i.e. not accessible to the general public) across the site during the demolition and construction works, and therefore windier conditions will be tolerable as the area is not for typical pedestrian use where the tolerable wind speed threshold would be lower.

Completed Development

2020 Wind Tunnel Testing and Approach to the Assessment of the 2021 Design Evolution

- 10.11 The assessment presented within this ES Chapter is based on the results of wind tunnel tests of the December 2020 scheme. Throughout 2021 further discussions have been held between the Applicant and the GLA / LBS on the design of the Proposed Development and these discussions have resulted in some further design improvements to the December 2020 scheme that are considered to be of relevance to the wind tunnel assessment and assessment of the likely significant wind microclimate effects of the Proposed Development.

- 10.12 The design evolution that is considered to be of relevance for these purposes is as follows:
 - A relocation of the affordable workspace entrances to the stair core between the warehouse and office lift core;
 - The introduction of new entrance locations to the north and south of the retail hall; and
 - A massing alteration of the eastern end of the building at the upper floors.

10.13 The 2021 design evolution is described in more detail in *ES Chapter 3 - Alternatives and Design Evolution (Volume 1)*.

10.14 RWDI has reviewed the 2021 design evolution and has concluded (drawing on the results of the previous wind tunnel testing undertaken in December 2020 and in their professional opinion) that the evolved design is not materially different enough from the December 2020 scheme to warrant a rerun of the wind tunnel testing. This is for the following reasons:

- The amendments would move the location of the affordable workspace entrances connecting Fenning Street to Vinegar Yard north by a few metres. The entrances are in alcoves and will be closed from both the western (Fenning Street) and eastern (Vinegar Yard) sides with limited access in the evenings. Wind would not be able to flow between Fenning Street and Vinegar Yard and the entrances would remain sheltered within the alcoves. During the winter (worst case / windiest season), the conditions at the entrances would be suitable for sitting use (minor beneficial not significant effect).
- Access to the retail hall is amended with the addition of entrance doors to the retail hall from St Thomas Street to the east of the entrance assessed in the wind tunnel and additional entrances from the south from Vinegar Yard. Wind conditions on St Thomas Street along the northern side of the Proposed Development are suitable for sitting use during the windiest season. To the south of the retail hall, the conditions are suitable for sitting use during the windiest season and are suitable for entrance use. During the winter (worst case / windiest season), the conditions at the entrances would be suitable for sitting use (minor beneficial not significant effect).
- The terrace level change would consist of a reduction in height of one of the terrace levels. This reduction in height would add an additional step in the building and would not be expected to substantially change the wind flow at this level. Furthermore, the wind conditions at all terrace levels defined by the wind tunnel testing are suitable for sitting use, the calmest category of the Lawson Criteria. As such, wind conditions would be expected to remain suitable for sitting use during the summer season on the amended roof terrace (negligible, not significant effect).

10.15 Furthermore, since the wind tunnel testing, there have been minor changes to the planning status of some cumulative schemes. However, and as discussed further in the 'Cumulative Effects Assessment' section of this ES Chapter, these changes are not considered such as to require an updated cumulative assessment.

10.16 Throughout the remainder of this ES Chapter, references to the Proposed Development therefore refers to the December 2020 scheme as tested in the wind tunnel and the subsequent design evolution (discussed above) which has resulted in the October 2021 scheme. The approach to this assessment (specifically the qualitative review of the design evolution and conclusions drawn on the likely significant wind microclimate effects of the Proposed Development based on previous wind tunnel testing and professional opinion (as well as review of the status of the cumulative schemes)) was discussed and agreed with the GLA at the EIA scoping meeting on the 8th September 2021.

Wind Tunnel Testing Methodology

10.17 To predict the local wind environment associated with the completed development, and the resulting pedestrian comfort within and in the area surrounding the site, wind tunnel testing of the Proposed Development has been undertaken within the wind tunnel.

10.18 Wind tunnel testing allows the pedestrian level wind microclimate at and surrounding the site to be quantified and classified in accordance with the accepted criteria (refer to 'Assessment Criteria' section of this ES Chapter).

10.19 Wind tunnel testing delivers a detailed assessment of the mean and gust wind conditions in and around the site for the tested wind directions in terms of pedestrian comfort and safety and provides a basis to assess the potential wind microclimate impacts and likely effects of the Proposed Development with regards to its intended use.

10.20 It is acknowledged that a direct comparison with the baseline conditions would be useful to understand changes from the existing (baseline) wind conditions across the site due to the Proposed Development. However, a comparison of the measured wind environment for the Proposed Development with the existing conditions does not take into account any change in pedestrian activity that would usually accompany development. Comparisons between the baseline scenario and 'completed development' scenario have therefore been made where possible.

10.21 The methodology for quantifying the pedestrian level wind environment is outlined below within four steps. Further details of the assessment methodology are presented within *ES Volume 3 – Appendix: Wind Microclimate*.

- Step 1: The site's induced wind speeds are measured for the appropriate configuration(s) at the appropriate pedestrian level(s) in the wind tunnel;
- Step 2: Standard meteorological data is adjusted to account for conditions at a subject site (for this assessment, meteorological data has been derived from the meteorological stations at three London airports (Heathrow and London City Airports));
- Step 3: Data from Step 1 and Step 2 is combined to obtain the expected frequency and magnitude of wind speed for the appropriate configuration(s) and at the appropriate pedestrian level(s); and
- Step 4: The results of Step 3 are compared with the Lawson Comfort Criteria (and where relevant, the change in the wind microclimate conditions between appropriate test configuration(s)) to 'grade / score' the conditions within and around the site.

10.22 To produce the results within the wind tunnel, a 1:300 scale model comprising the site and the surrounding area (including relevant existing buildings and other topographical features) was constructed on a 2.4m diameter disc allowing for the surrounding area within a 360 metre (m) radius of the centre of the Proposed Development to be modelled (the radius is determined based on the scale model and due to the physical constraints of the modelling in the wind tunnel). This radius is considered a large enough scale to ensure all likely wind effects are captured.

10.23 Wind is unsteady, or gusty, and this 'gustiness' or turbulence, varies depending upon the site. In order to model the likely effects of gustiness or turbulence (which depends on the geographical location), a series of grid, barrier and floor roughness elements have been employed in the wind tunnel in order to create a 'boundary layer' that is representative of the urban location of the site. The detailed wind tunnel model around the Proposed Development is used to fine-tune the flow and create conditions similar to those expected at full scale.

10.24 Other developments outside the 360m radius of the site would not individually be expected to modify the wind approaching the site and as such have not been included within the analysis of the surrounding terrain.

10.25 To test the impact of the Proposed Development, a scale model of the buildings comprising the completed Proposed Development has been constructed (Configuration 2: The Proposed Development with Existing Surrounding Buildings).

10.26 Wind speed measurements within and around the site for the tested configurations were established using 'Irwin probes'. These sensors are able to measure the mean and gust wind speeds at a full-scale height of approximately 1.5 m above the surface upon which the probe is located.

10.27 The wind speed was measured at up to 168 locations under the configurations for all wind directions in equal increments, with 0° representing wind blowing from the north and 90° wind from the east and so on.

Model Configurations Assessed

10.28 The assessment of the wind microclimate is based on the results from a series of tests of physical models within the wind tunnel to provide a detailed, quantitative assessment. Each configuration was initially assessed devoid of landscaping on-site / associated with the Proposed Development, in order to consider a worst-case scenario.

10.29 Configurations tested within the wind tunnel include:

- Configuration 1: The Existing Site with Existing Surrounding Buildings (the Baseline Condition);
- Configuration 2: Proposed Development with Existing Surrounding Buildings;
- Configuration 3: Proposed Development with Existing Surrounding Buildings and Capital House;
- Configuration 4: Proposed Development with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme;
- Configuration 5: Proposed Development with Cumulative Surrounding Buildings, Capital House, The Edge, and Sellar Scheme; and

- Configuration 6: Proposed Development with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme, with developed Mitigation and Proposed Landscaping.

10.30 Cumulative schemes identified within the 360m radius of the site assessed in the wind tunnel model are:

- Melior Place – 18/AP/3229; and
- Guinness Court – 16/AP/3819.

Assessment Criteria

Lawson Comfort Criteria

- 10.31 The assessment of the wind conditions requires a standard against which the measurements can be compared. This assessment of the wind tunnel results presented in this ES Chapter adopts the Lawson Comfort Criteria ('the Lawson Criteria'), which have been established for over 30 years.
- 10.32 The Lawson Criteria described in **Table 10.1** is presented to define the reaction of an average pedestrian to the wind. If the measured wind conditions exceed the threshold wind speed for more than 5 % of the time, then they are unacceptable for the stated pedestrian activity and the expectation is that there may be complaints of nuisance or people will not use the area for its intended purpose.
- 10.33 The Lawson Criteria set out four pedestrian activities (comfort categories) and reflect the fact that less active pursuits require more benign wind conditions. The four categories are: sitting, standing, strolling and walking, in ascending order of activity level, with a fifth category for conditions that are uncomfortable for all uses. In other words, the wind conditions in an area required for sitting need to be calmer than a location that people merely walk past.
- 10.34 The coloured key in **Table 10.1** corresponds to the presentation of wind tunnel test results.

Table 10.1 Lawson Comfort Criteria

Key	Comfort Category	Threshold	Description
●	Uncomfortable	>10 m/s	Winds of this magnitude are considered a nuisance for most activities, and wind mitigation is typically recommended.
●	Walking	8-10 m/s	Relatively high speeds that can be tolerated if the objective is to walk, run or cycle without lingering.
●	Strolling	6-8 m/s	Moderate breezes that would be appropriate for strolling along a city/town centre street, plaza or park.
●	Standing	4-6 m/s	Gentle breezes suitable for main building entrances, pick-up/drop-off points and bus stops.
●	Sitting	0-4 m/s	Light breezes desired for outdoor restaurants and seating areas where one can read a paper or comfortably sit for long periods.

Target Wind Conditions

- 10.35 For a mixed-use urban environment, such as the Proposed Development and surrounding area, the desired wind microclimate would typically need to have areas suitable for sitting, standing/entrance use and strolling (Table 10.1).
- 10.36 The walking and uncomfortable classifications may be acceptable in isolated areas, but these classifications are also associated with occasional strong winds (which are described below) and so the aim has been to avoid conditions in these categories.

Amenity Areas

- 10.37 The target condition for seating in amenity areas is a wind microclimate that is suitable for sitting during the summer season. This is because these areas are more likely to be frequently used during the summer when pedestrians would expect to be able to sit comfortably. If an area is classified as suitable for sitting in the

summer, the windier conditions that occur during the winter season usually mean that the area would be classified as suitable for standing in the windiest season, unless additional shelter was provided.

- 10.38 Large amenity spaces and upper level terraces are assessed on the basis that these are amenity spaces intended for good-weather use only. Sitting or standing conditions during the summer would be acceptable in these areas.

Entrances

- 10.39 Near building entrances, a wind environment suitable for standing or calmer is desired, as pedestrians will transition from the calm indoors to the windier outdoors throughout the year. The assessment for building entrances therefore focuses on the windiest season result.

- 10.40 An entrance which is recessed, then the recessed zone provides a transition area for pedestrians existing the building. If strolling conditions are observed on the pavement outside a recessed entrance, acceptable standing conditions would be expected at the recessed entrance.

Thoroughfares, Crossings

- 10.41 The consideration of the target condition for 'Crossings' is also guided by this description.

- 10.42 A pedestrian thoroughfare should be suitable for strolling during the windiest season. The assessment for pedestrian thoroughfares therefore focuses on the windiest season result.

- 10.43 Localised occurrence of walking conditions may be acceptable in areas with limited footfall, or service areas, as long as the strong wind criteria (see section 'Strong Winds') is not exceeded.

Roadways

- 10.44 The Lawson Criteria does not specify criteria for acceptable wind conditions for cyclists; however, the occurrence of winds exceeding the strong winds threshold (as described below) would be considered unsuitable for cyclists. The assessment for roadways focusses on the windiest season.

Strong Winds

- 10.45 The Lawson Criteria also specifies a strong wind threshold when winds exceed 15m/s for more than 0.025% of the time (approximately 2.2 hours of the year). Exceedance of this threshold may indicate a need for remedial measures or a careful assessment of the expected use of that location; e.g. is it reasonable to expect older adults or young children to be present at the location on the windiest day of the year?

- 10.46 Wind Speeds that exceed 20m/s for more than 0.025% of the time (approximately 2 hours of the year) represent safety issue for all members of the population, which would require mitigation to provide an appropriate wind microclimate environment.

- 10.47 Strong winds are generally associated with areas which would be classified as acceptable for walking or as uncomfortable. In a mixed-use urban development scheme, walking and uncomfortable conditions would not usually form part of the 'target' wind environment and would usually require mitigation due to pedestrian comfort considerations. This mitigation would also reduce the frequency of, or even eliminate, any strong winds.

Assumptions

- 10.48 This assessment is based on worst-case wind speeds, expected to be encountered during the winter season (December, January and February) in the UK. Additional consideration has been made for summer wind conditions due to the presence of terraces on the elevated levels of the Proposed Development. This complies with the standard methodology set out by Lawson for wind-microclimate assessments.

- 10.49 It is expected that use of outdoor amenity spaces and rooftop terraces for sitting will be limited to the summer season. During the winter, it would be expected that these spaces would increase a criteria level to standing use.

Methodology for Defining Effects

Receptors and Receptor Sensitivity

- 10.50 The sensitivity of receptors is related to the intended pedestrian usage at each location; there are no definitions for sensitivity, as the important consideration is whether the wind conditions experienced at a particular receptor location are suitable for the intended use (in terms of comfort and strong winds) at that particular location. All receptors are considered to be highly sensitive to the local wind microclimate conditions and are given an equal weighting.

10.51 The wind conditions are compared with the intended pedestrian use. With respect to the site itself, sensitive receptors will include the following locations (where present of the Proposed Development) with the required wind conditions specified for each use:

- Thoroughfares – targeting strolling wind conditions; and
- Entrances – targeting standing wind conditions.

10.52 In addition, the wind conditions in the surrounding area will also be considered within the area that would potentially be influenced by the Proposed Development. For sensitive receptors surrounding the site, consideration will be given to the uses listed above where appropriate, as well as:

- Pedestrian crossings – targeting walking wind conditions;
- Roadways – targeting walking wind conditions; and
- Amenity spaces – targeting sitting wind conditions during the summer season.

Magnitude of Impact

10.53 The magnitude of impact for all receptors are defined as high. The impact of all receptors is consistent (in respect of the specific wind direction and speed defined by standard meteorological data) and the effect at each probe location is in accordance with the Lawson Comfort Criteria, described in **Table 10.1**. The impacts to all receptors are the same, as any receptor which has wind conditions windier than required for the intended use will require mitigation, regardless of location.

Defining the Effect

10.54 The criteria used in the assessment of both potential and residual effects is based upon the relationship between the desired pedestrian use of an area of the Proposed Development and its immediate surroundings (based on the categories defined by the Lawson Comfort Criteria) and, the predicted wind conditions at that area. This also allows for the assessment to account for any change in pedestrian activity that might arise because of the Proposed Development.

10.55 In terms of the nature of the effect, effects can either be beneficial (calmer conditions than required) or adverse (windier conditions than required). An adverse effect implies that a location has a wind environment that is unsuitable for its intended use and mitigation would therefore be required.

10.56 A seven-point scale has been used within this assessment to assess the scale and nature of an effect:

- **Major Beneficial:** wind conditions are three categories calmer than required;
- **Moderate Beneficial:** wind conditions are two categories calmer than required;
- **Minor Beneficial:** wind conditions are one category calmer than required;
- **Negligible:** wind conditions are those required;
- **Minor Adverse:** wind conditions are one category windier than required;
- **Moderate Adverse:** wind conditions are two categories windier than required; and
- **Major Adverse:** wind conditions are three categories windier than required.

10.57 The minor, moderate and major categories indicate the degree of the difference between the desired microclimate and the predicted (measured) microclimate. As an example, if the desired wind conditions at a particular location are required to be suitable for standing, but the predicted wind conditions are suitable for strolling, the difference between the desired and predicted wind condition is one category windier than desired. In this case, the scale of the effect would be identified as minor adverse.

10.58 Any adverse effect is a 'significant effect' because it implies that a location, or area, has a wind microclimate that is unsuitable for the desired use of that area. On this basis, effects that are adverse need mitigating.

10.59 Beneficial effects (minor, moderate and major) as well as negligible effects are not considered significant as they do not require wind mitigation measures. Significant effects are those where further wind mitigation measures are required.

10.60 Effects during the demolition and construction works are **direct, local** and **short-term (temporary)**.

10.61 Effects once the Proposed Development is completed are **direct, local** and **long-term (permanent)**.

10.62 The geographical extent of the wind microclimate is expected to be within the site and its immediate surroundings, i.e. a **local impact**, for all receptors.

10.63 Strong winds (affecting pedestrian safety) are not assigned a scale of effect and so overall significance but, are reported separately, as any strong wind exceedance is significant and cannot be scaled to major / moderate / minor. Where strong winds occur, mitigation is required (as per adverse effects related to pedestrian comfort).

Off-site locations

10.64 Based on the results of the wind tunnel testing and taking the baseline conditions into consideration, the likely effect at particular locations off-site have also been determined.

10.65 Should an off-site location be windier than required for the intended use with the Proposed Development in situ, but these wind conditions also occur in the baseline (existing or evolved baseline scenario as relevant), this would represent a negligible effect.

10.66 Off-site locations can only be deemed to have a beneficial effect if the wind conditions have been made better because of the Proposed Development. This means, if the wind conditions are calmer than required in both the baseline (existing or evolved baseline scenario as relevant) and the complete and operational Proposed Development scenarios, this would represent a negligible effect.

10.67 If off-site wind conditions have been made worse because of the Proposed Development, but still acceptable for the intended pedestrian usage, this would also represent a negligible effect.

10.68 Where wind conditions are suitable for the intended use in the baseline scenario (existing or evolved baseline scenario as relevant) and become windier than required with the Proposed Development in situ, the significant effect is as discussed for on-site locations as above.

BASELINE CONDITIONS

Baseline Conditions

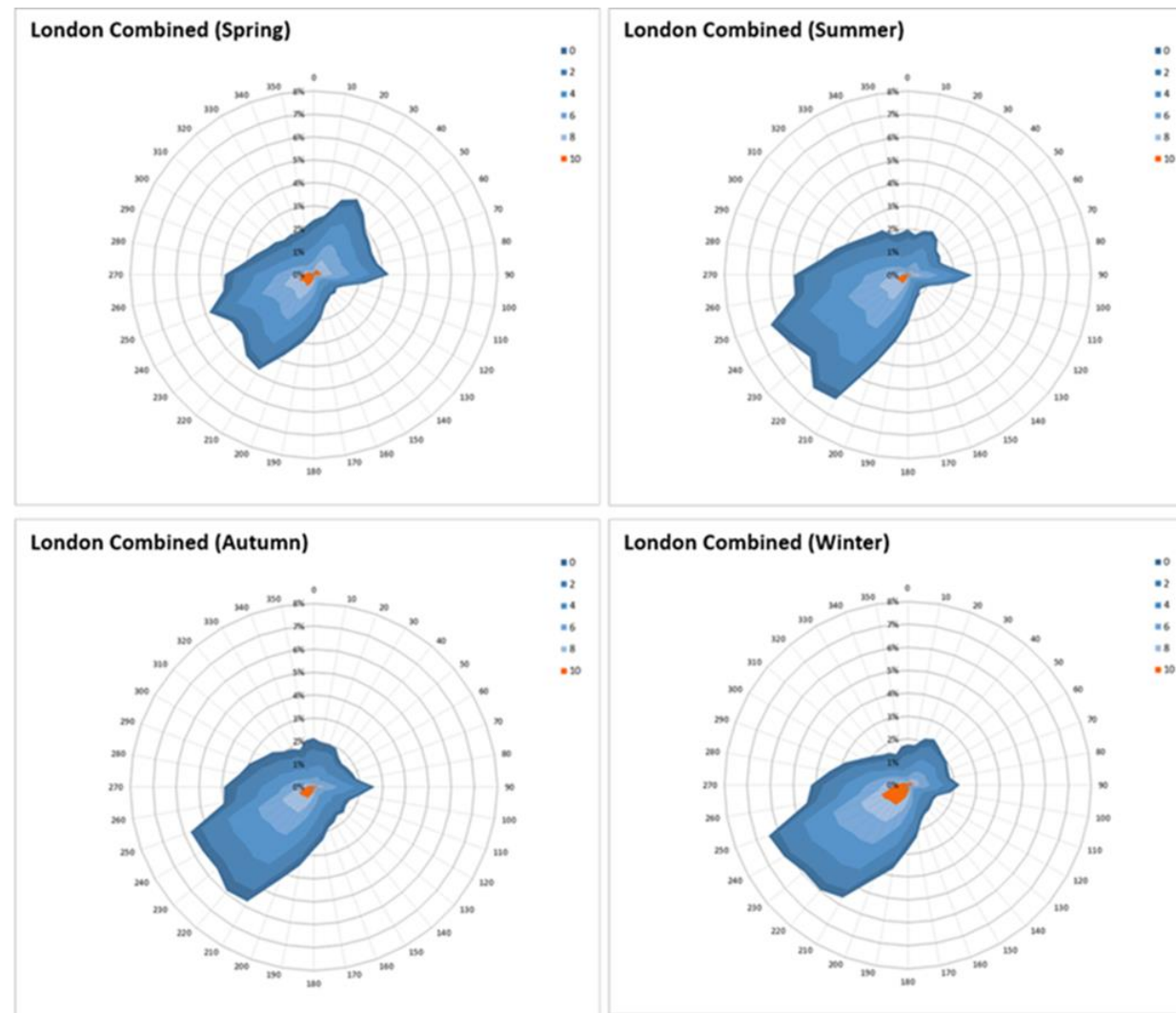
Meteorological Data

10.69 The UK Meteorological Office supplies records of the number of hours that wind occurs for ranges of wind speed (m/s) and by direction. Meteorological data for London (Heathrow and London City Airports), shown in the wind rose in **Figure 10.1**, has been used in this assessment as this is deemed to provide an accurate representation of the local wind microclimate for the London area. The meteorological station data is then adjusted to the site conditions using the methodology set out in ESDU 010081.

10.70 The meteorological data obtained for London indicates that the prevailing wind throughout the year is from the south-west (i.e. 210 to 240 degrees on the compass). This is typical for many areas of southern England. There is a secondary peak from the north-east during the late spring and early summer. The winds from the north-east are not as strong as the prevailing winds from the south-west, although the winds are colder.

¹ ESDU International, Computer program for wind speeds and turbulence properties: flat or hilly sites in terrain with roughness changes, ESDU 01008, 2001 01008

Figure 10.1 Seasonal Wind Roses for London (London City and Heathrow Airports) - Radial axis indicates the percentage time for which the stated velocity range is exceeded



Configuration 1: Existing Site with Existing Surrounding Buildings

10.71 Wind conditions for Configuration 1 (baseline scenario) are presented in **Figures 10.2** and **10.3** for the windiest and summer season respectively. Instances of strong winds exceeding 15 m/s for more than 2.2 hours per years are presented in **Figure 10.4**.

Pedestrian Comfort

10.72 Within the baseline scenario, wind conditions at the site and within the surrounding area are suitable for sitting to standing use during the windiest season (**Figure 10.2**).

10.73 During the summer season (**Figure 10.3**), wind conditions at the site and the surrounding area are suitable for sitting use, with standing use wind conditions at measurement location 11 along St Thomas Street.

10.74 These wind conditions are suitable for the current use of the site as a temporary market including outdoor seating provisions and the uses of the surroundings.

Strong Winds

10.75 There are no instances of winds exceeding 15m/s for more than 0.025% of the time at the existing site (**Figure 10.4**).

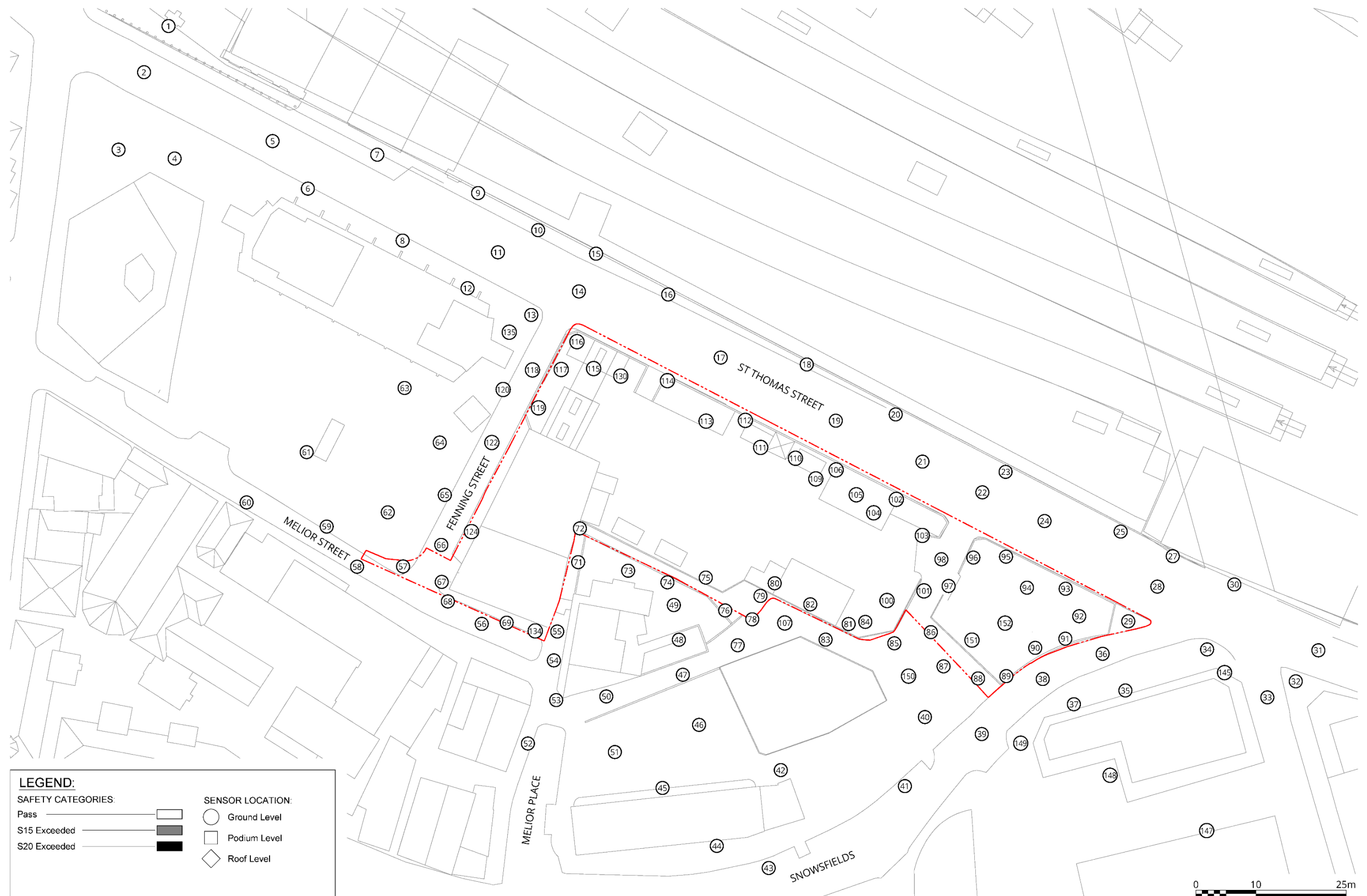
Figure 10.2 Configuration 1: Existing Site with Existing Surrounding Buildings – Ground Level: Windiest Season



Figure 10.3 Configuration 1: Existing Site with Existing Surrounding Buildings – Ground Level: Summer Season



Figure 10.4 Configuration 1: Existing Site with Existing Surrounding Buildings – Ground Level: Wind Safety Conditions



RECEPTORS AND RECEPTOR SENSITIVITY

Existing

- 10.76** In assessing the wind microclimate there are no definitions for the sensitivity of receptors, with each receptor being highly sensitive to changes to the local wind microclimate conditions. Receptors likely to be affected by the Proposed Development include all pedestrians using/visiting the Proposed Development and the surrounding areas, as well as pedestrians and cyclists on surrounding thoroughfares, retained entrances to the Proposed Development and those of surrounding buildings and surrounding amenity spaces, including café spill out space and outdoor seating.
- 10.77** There is an overall total of 168 measurement locations (refer to **Table 10.2**) across the Proposed Development and surrounding area, which have been assessed. The locations of the probes are fixed and have been subjectively determined based on examination of architectural drawings, reflecting the use of the Proposed Development.
- 10.78** The following description of receptor categories for the site and the approach taken to the allocation of the probe locations to the categories is as follows:
- On-Site
 - Pedestrian Thoroughfares: includes areas that are immediately adjacent to the Proposed Development (i.e. within 5m of the building line). This also includes thoroughfares within the Proposed Development;
 - Entrances: includes entrances at ground level;
 - Amenity areas: ground floor and roof terrace (includes terraces located on the upper levels of the buildings); and
 - Off-Site locations: includes all receptors falling outside the definition of the boundary of site, such as along roadways and entrances to the surrounding buildings.

Table 10.2 Likely Resource / Receptor

Receptor Type (Season)	Receptor Reference (Probe Measurement Numbers)
Configuration 1:	
On-Site	
Pedestrian Thoroughfares (Windiest)	29, 57, 67-69, 74, 76,79, 86, 88, 97-99, 101, 103, 121, 123, 124, and 134
Crossings (Windiest)	/
Entrances (Windiest)	/
Ground Floor Amenity (Summer)	75, 80-82, 84, 89-96, 100, 102, 104-106, 109-117, 115, 119, 130, 151-152
Roadway (Windiest)	/
Off-Site	
Pedestrian Thoroughfares (Windiest)	6-10, 13, 15, 16, 18, 32, 37, 46, 47, 49-55, 59, 62-65, 71, 73, 87, 120, 121, 157, 147, 148, and 150
Crossings (Windiest)	2, 28, 33, and 34
Entrances (Windiest)	1, 12, 35, 44, and 45
Ground Floor Amenity (Summer)	48
Roadway (Windiest)	5, 11, 14, 17, 19, 20-25, 27, 30, 31, 36, 38, 39, 41, 43, 56, 58, 60, 66, 77, 83, 85, 107, 118, and 122
Configurations 2-6:	

Receptor Type (Season)	Receptor Reference (Probe Measurement Numbers)
On-Site	
Pedestrian Thoroughfares (Windiest)	29, 57, 67-69, 74, 76,79-82, 84, 86, 88-99, 101-103, 105, 106, 109-117, 119, 121, 123, 124, 130, 131, 134, 151, and 152
Crossings (Windiest)	/
Entrances (Windiest)	69, 72, 75, 100, 104, and 133
Upper Level Amenity (Summer)	153-168
Roadway (Windiest)	/
Off-Site	
Pedestrian Thoroughfares (Windiest)	6-10, 13, 15, 16, 18, 32, 37, 46, 47, 49-55, 59, 62-65, 71, 73, 87, 120, 121, 157, 147, 148, and 150
Crossings (Windiest)	2, 28, 33, and 34
Entrances (Windiest)	1, 12, 35, 44, 45 (3, 4, 138-144 entrances to Capital House) (40, 42, 145, 146, and 149 entrances to the Sellar Scheme), 61, (135-138 entrances to the Edge)
Ground Floor Amenity (Summer)	48
Roadway (Windiest)	5, 11, 14, 17, 19, 20-25, 27, 30, 31, 36, 38, 39, 41, 43, 56, 58, 60, 66, 77, 83, 85, 107, 118 and 122

POTENTIAL EFFECTS

Demolition and Construction

- 10.79** The potential wind microclimate impacts and likely effects during the period of demolition and construction works have not been directly assessed within the wind tunnel, as this is a temporary condition and would be highly variable as the remaining existing buildings are demolished and the Proposed Development is constructed.
- 10.80** Typically for a wind microclimate in London, the potential impacts during the period of demolition and construction works would be assessed using the professional judgement of an experienced wind engineer, based on an assessment of the background wind climate at the site and an understanding of the effects of wind in the built environment. This approach is taken assuming that the activity on-site during this time (i.e. construction activity) is less sensitive to wind conditions than when the Proposed Development is completed and occupied (which would include entrance and amenity space, for example). In addition, there would be appropriate health and safety measures implemented to ensure that the construction workers were adequately protected.
- 10.81** A qualitative assessment of the wind tunnel microclimate during demolition and construction has therefore been undertaken and is based on professional judgement (informed by an assessment of the background wind microclimate in the area, the results of the tested configurations for the baseline and completed development scenarios, and RWDI's experience of assessing wind in the build environment).
- 10.82** The existing site is currently occupied by a temporary market, with a number of temporary structures including shipping containers, surrounded by safety hoarding, with two buildings in the southwest portion of the site. Given the conditions described as part of the description of the baseline environment, it is considered that conditions are not unsuitable for a working construction site or pedestrian thoroughfares around the site (with the hoarding in place). Therefore, the likely effect is expected to be **negligible**.
- 10.83** As construction of the Proposed Development proceeds, the wind conditions at the site would gradually adjust to those of the completed Proposed Development, as described in the following section '*Completed Development*'.

Assumptions

- 10.84** It assumed that there will be restricted access (i.e. not accessible to the general public) to the site during demolition and construction, and therefore windier conditions will be tolerable as the area is not for typical pedestrian use where the tolerable wind speed threshold would be lower.

Completed Development

Configuration 2: Proposed Development with Existing Surrounding Buildings

- 10.85** The discussion of wind conditions at the Proposed Development with the existing surrounding buildings is based on the results presented in **Figure 10.5 and 10.6** for the windiest and the summer season at ground level, while **Figure 10.7** shows the wind conditions at the elevated levels during the summer season; instances of strong winds exceeding 15 m/s for more than 2.2 hours per year are reported in **Figures 10.8 and 10.9**.
- 10.86** Wind conditions were initially assessed devoid of landscaping in order to assess a worst-case (i.e. windy) scenario at the Proposed Development.

Pedestrian Comfort

- 10.87** The wind conditions for the completed Proposed Development would be windier than in the Baseline (Configuration 1), ranging from suitable for sitting use to walking use at ground floor level during the windiest season (**Figure 10.5**).
- 10.88** During the summer season (**Figure 10.6**), wind conditions at ground floor level would range from suitable for sitting to strolling use. At roof terrace level, conditions would range from suitable for sitting to standing use.

Thoroughfares

On-Site

- 10.89** Wind conditions at on-site thoroughfare locations would range from suitable for sitting use to walking use during the windiest season (**Figure 10.5**).
- 10.90** These conditions would represent a **negligible** (measurement locations 82, 84, 86, 88-90, 95-97, , 115-117, 119, 151, and 152) (not significant), **minor beneficial** (measurement locations 29, 57, 67-68, 79, 91-94, 98-99, 101-103, 112, 114, 121, 123, 124, 130, 131 and 134) (not significant), and **moderate beneficial** (measurement locations 69, 74, 76, 80, 105, 106, 109-111 and 113) (not significant) effect; however, walking use wind conditions at measurement location 81 would be one category windier than desired, representing a **minor adverse** effect (significant). This location would require wind mitigation measures.

Off-Site

- 10.91** On the off-site thoroughfares of St. Thomas Street bounding the north of the site, Fenning Street bounding the west of the site and Melior Street to the south-west of the site, wind conditions would be suitable for strolling use or calmer during the windiest season (**Figure 10.5**), windier conditions than in the Baseline (Configuration 1), however acceptable for pedestrian thoroughfares. Conditions on the pedestrian thoroughfare connecting Melior Place to Vinegar Yard to the south of the site would be suitable for standing use, one category calmer than required for a pedestrian thoroughfare.
- 10.92** Although these conditions are windier than the Baseline (Configuration 1), they remain suitable for the intended use and would therefore represent a **negligible** (measurement locations 6-10, 13, 15, 16, 18, 32, 37, 46, 47, 49-55, 59, 62-65, 71, 73, 87, 120, 121, 157, 147, 148, and 150) effect (not significant).

Roadway

Off-Site

- 10.93** Wind conditions on off-site roads (measurement locations 5, 11, 14, 17, 19, 20-25, 27, 30, 31, 36, 38, 39, 41, 43, 56, 58, 60, 66, 77, 83, 85, 107, 118, 122) would be suitable for sitting use to walking use during the windiest season, suitable for the intended use. This represents a **negligible** effect (not significant).

Crossings

Off-Site

- 10.94** Wind conditions at the off-site crossings (measurement locations 2, 28, 33, and 34) would be suitable for standing use during the windiest season, suitable for the intended use (**Figure 10.5**). This represents a **negligible** effect (not significant).

Entrances

On-Site

- 10.95** Entrances to the Proposed Development represented by measurement locations 69, 72, 75, 100, 104, and 133 would have wind conditions suitable for sitting to standing use during the windiest season, suitable for the intended use (**Figure 10.5**).
- 10.96** Conditions at on-site-entrances would represent a **minor beneficial** (measurement locations 69, 72, 75, 100, 104 and 133) (not significant) effect.

Off-Site

- 10.97** Entrances to the surrounding buildings represented by measurement locations 1, 12, 35, 44, and 45 would have wind conditions suitable for sitting use during the windiest season, suitable for the intended use (**Figure 10.5**).
- 10.98** Conditions at off-site entrances would represent a **negligible** effect (not significant).

Ground Floor Amenity Space

Off-Site

- 10.99** The outdoor seating area of the Horseshoe Inn represented by measurement location 48 would be suitable for sitting use during the summer season, suitable for the intended amenity use (**Figure 10.6**).
- 10.100** These conditions would represent a **negligible** effect (not significant).

Upper Level Amenity Spaces

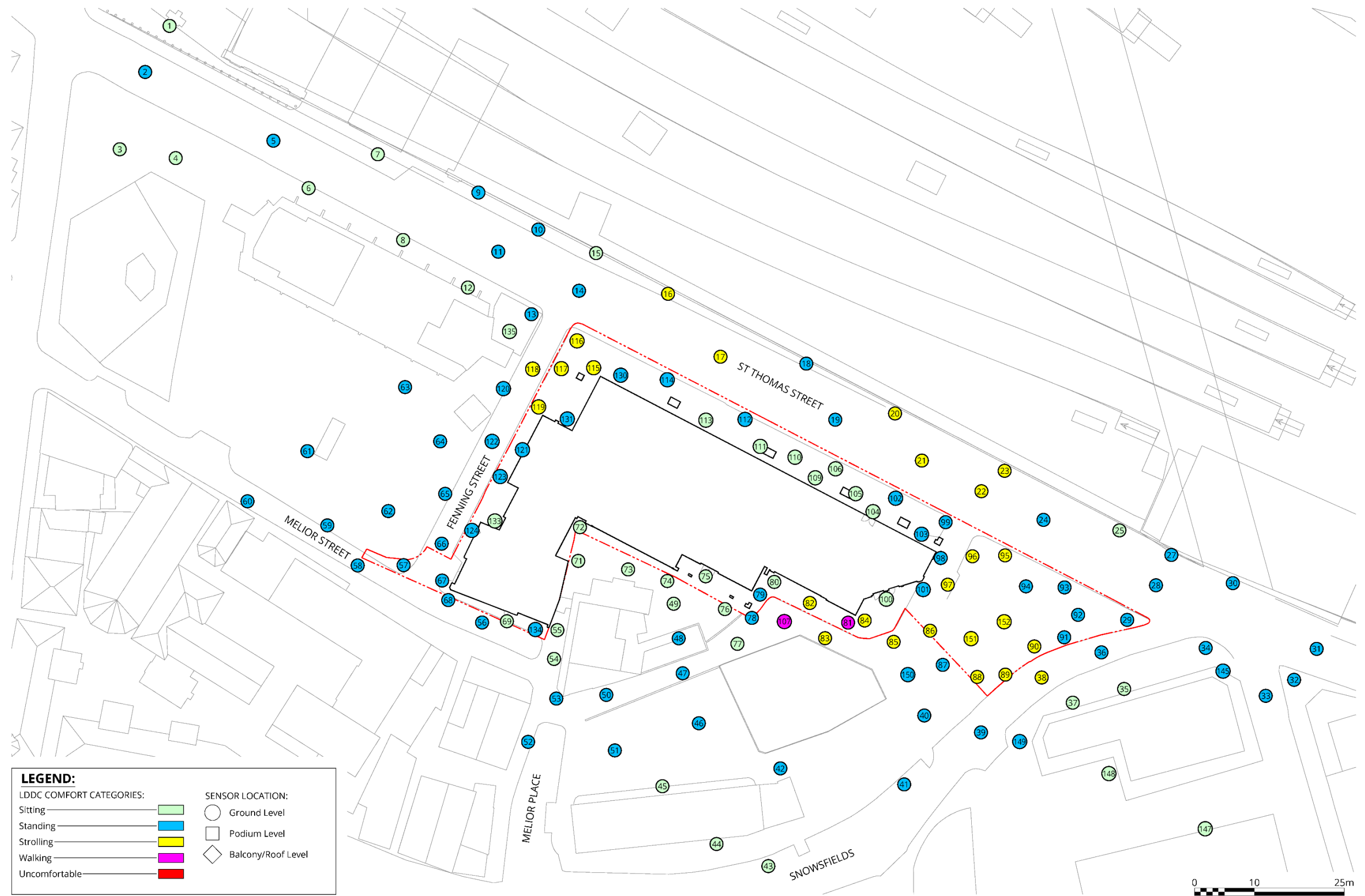
On-Site

- 10.101** Upper level amenity spaces of the Proposed Development are represented by measurement locations 153-168; wind conditions at these locations would be suitable for sitting use during the summer season, with standing use wind conditions at balcony location 158 to the south and terrace location 168 (**Figure 10.7**). If no long-term seating will be intended at these locations, these wind conditions would be suitable for a private amenity space.
- 10.102** Upper level amenity spaces of the Proposed Development would therefore have wind conditions representing a **negligible** (not significant) effect.

Strong Winds

- 10.103** Winds exceeding 15m/s for more than 0.025% of the time (approximately 2.2 hours per year) would have the potential to cause distress to pedestrians and cyclists. Occurrences of these winds at the Proposed Development would require the use of wind mitigation measures.
- 10.104** Instances of strong winds exceeding 15 m/s for more than 2.2 hours per year would occur at measurement locations 81 and 107 to the south- east of the site (**Figure 10.8**); these locations would require mitigation measures.
- 10.105** No instances of strong winds exceeding 15 m/s for more than 2.2 hours per year would occur at elevated terraces of the Proposed Development (**Figure 10.9**).

Figure 10.5 Configuration 2: Proposed Development² with Existing Surrounding Buildings – Ground Level: Windiest Season



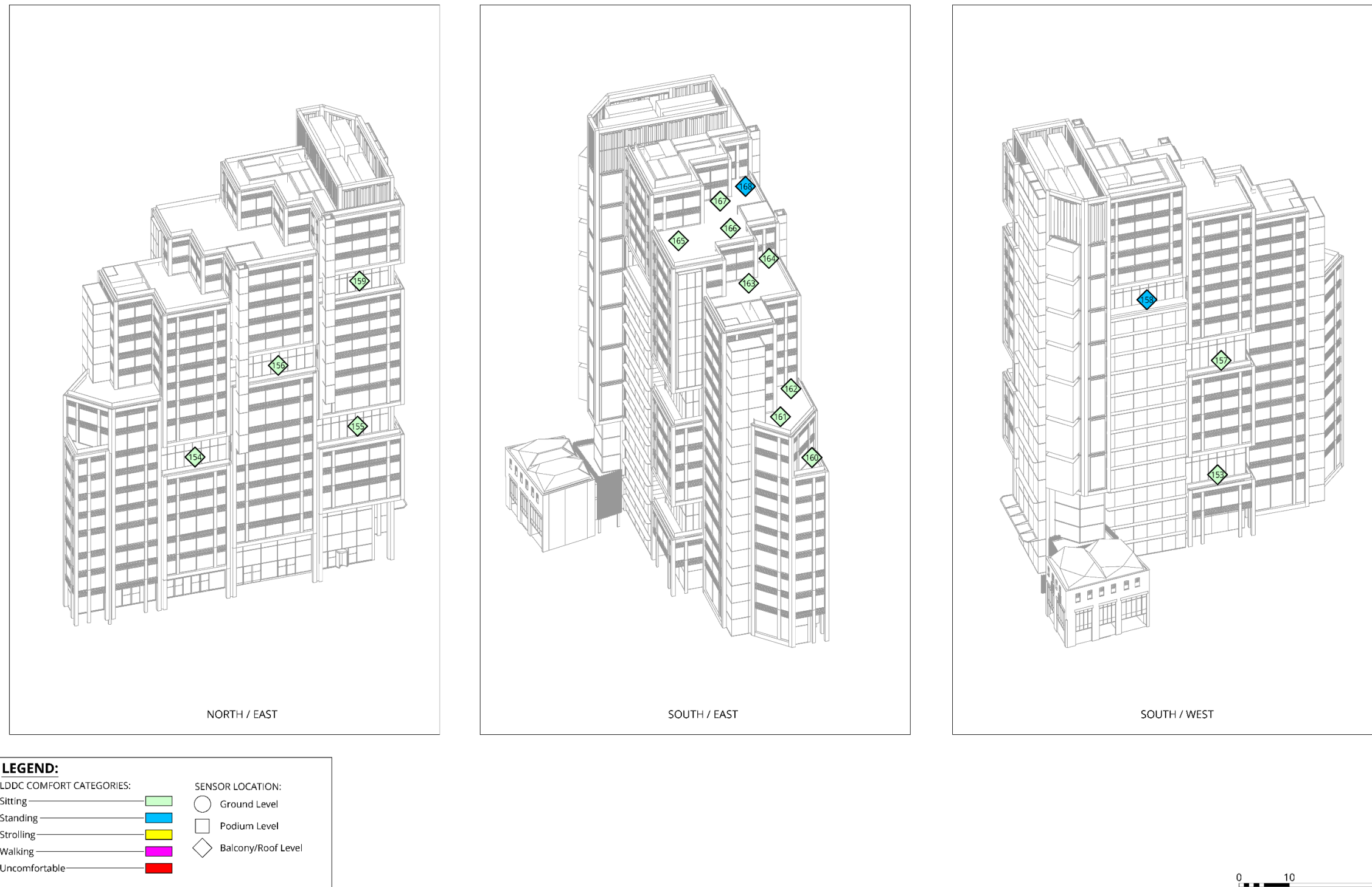
² NOTE: Proposed Development, December 2020 scheme

Figure 10.6 Configuration 2: Proposed Development³ with Existing Surrounding Buildings – Ground Level: Summer Season



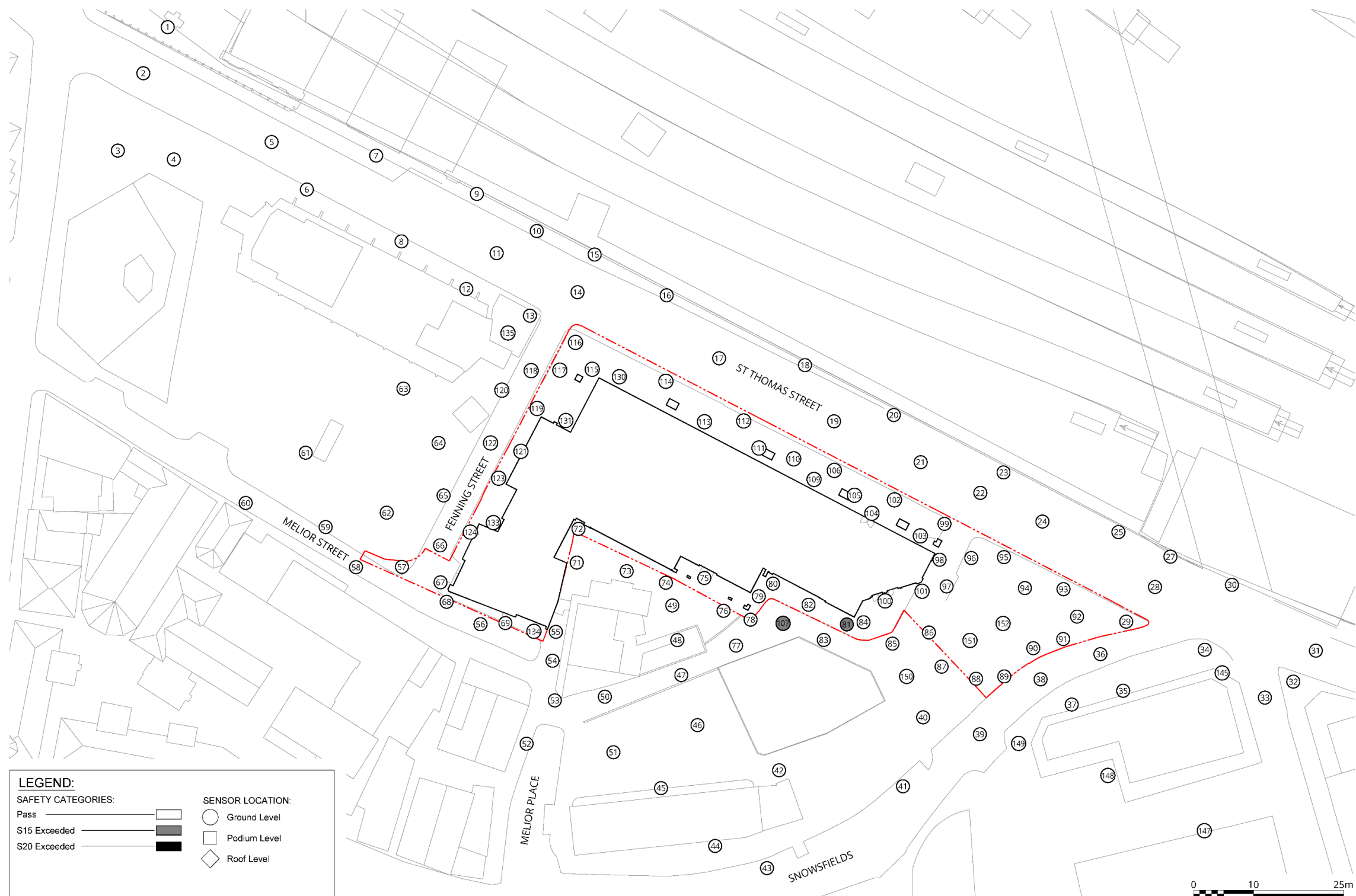
³ NOTE: Proposed Development, December 2020 scheme

Figure 10.7 Configuration 2: Proposed Development⁴ with Existing Surrounding Buildings – Upper Levels: Summer Season



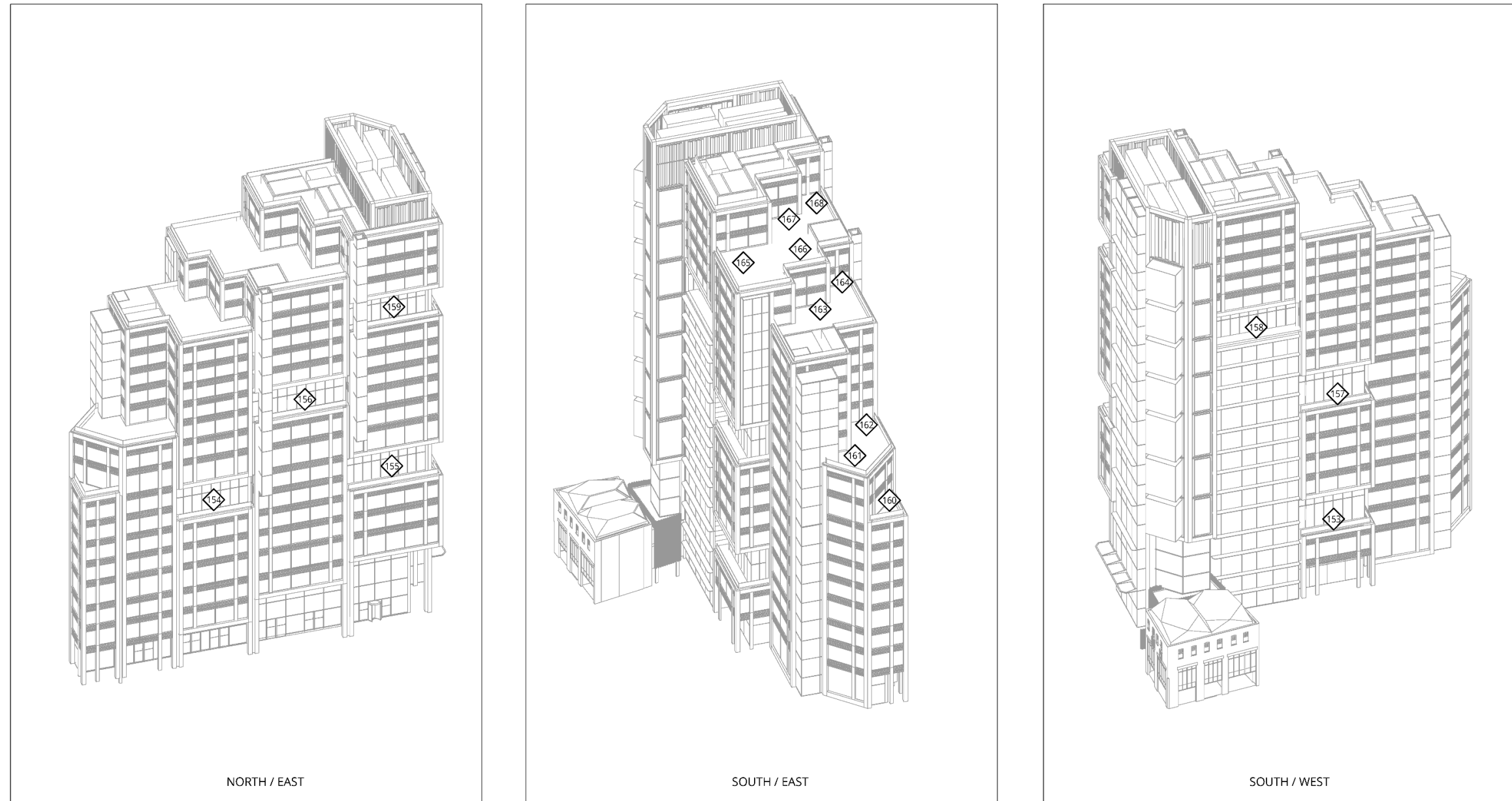
⁴ NOTE: Proposed Development, December 2020 scheme

Figure 10.8 Configuration 2: Proposed Development⁵ with Existing Surrounding Buildings – Ground Level: Wind Safety Conditions



⁵ NOTE: Proposed Development, December 2020 scheme

Figure 10.9 Configuration 2: Proposed Development⁶ with Existing Surrounding Buildings – Upper Levels: Wind Safety Conditions



LEGEND:

SAFETY CATEGORIES:		SENSOR LOCATION:	
Pass		○	Ground Level
S15 Exceeded		◻	Podium Level
S20 Exceeded		◇	Roof Level



⁶ NOTE: Proposed Development, December 2020 scheme

Configuration 3: Proposed Development with Existing Surrounding Buildings and Capital House

10.106 The discussion of wind conditions at the Proposed Development with the existing surrounding buildings and the consented Capital House scheme built up is based on the results presented in **Figure 10.10 and 10.11** for the windiest and the summer season at ground level, while **Figure 10.12** shows the wind conditions at the elevated levels during the summer season; instances of strong winds exceeding 15 m/s for more than 2.2 hours per year are reported in **Figures 10.13 and 10.14**.

10.107 Wind conditions were initially assessed devoid of landscaping in order to assess a worst-case (i.e. windy) scenario at the Proposed Development.

Pedestrian Comfort

10.108 The wind conditions for the completed Proposed Development with Capital House in place would be largely consistent with those in Configuration 2, ranging from suitable for sitting use to walking use at ground floor level during the windiest season (**Figure 10.10**).

10.109 During the summer season (**Figure 10.11**), wind conditions at ground floor level would range from suitable for sitting to walking use. At roof terrace level conditions would range from suitable for sitting to standing use.

Thoroughfares

On-Site

10.110 Wind conditions at on-site thoroughfare locations would range from suitable for sitting use to walking use during the windiest season (**Figure 10.10**).

10.111 These conditions would represent a **negligible** (measurement locations 79, 82, 88-91, 94-97, 115-117, 119, 151, and 152) (not significant), **minor beneficial** (measurement locations 29, 57, 68, 84, 92-93, 98-99, 101-103, 114, 121, 123, 124, 131 and 134) (not significant) and **moderate beneficial** (measurement locations 67, 69, 74, 76, 80, 105, 106, 109-113 and 130) (not significant) effect; however, walking use wind conditions at measurement locations 81 and 86 would be one category windier than desired, representing a **minor adverse** effect (significant). These locations would require wind mitigation measures.

Off-Site

10.112 Wind conditions at off-site thoroughfare locations would range from suitable for sitting use to strolling use during the windiest season (**Figure 10.10**), suitable for the intended use.

10.113 These conditions are suitable for pedestrian thoroughfare, however, windier than the Baseline Condition and would therefore represent a **negligible** (measurement locations 6-10, 13, 15, 16, 18, 32, 37, 46, 47, 49-55, 59, 62-65, 71, 73, 87, 120, 121, 157, 147, 148, and 150) effect (not significant).

Roadway

Off-Site

10.114 Wind conditions on off-site roads (measurement locations 5, 11, 14, 17, 19, 20-25, 27, 30, 31, 36, 38, 39, 41, 43, 56, 58, 60, 66, 77, 83, 85, 107, 118, 122) would be suitable for sitting use to walking use during the windiest season, suitable for the intended use (**Figure 10.10**). This represents a **negligible** effect (not significant).

Crossings

Off-Site

10.115 Wind conditions at the off-site crossings (measurement locations 2, 28, 33, and 34) would be suitable for strolling use or calmer during the windiest season, suitable for the intended use (**Figure 10.10**). This represents a **negligible** effect (not significant).

Entrances

On-Site

10.116 Entrances to the Proposed Development represented by measurement locations 69, 72, 75, 100, 104, and 133 would have wind conditions suitable for sitting to standing use during the windiest season, suitable for the intended use (**Figure 10.10**).

10.117 Conditions at these on-site-entrances would represent a **minor beneficial** (not significant) effect.

Off-Site

10.118 Entrances to the surrounding buildings represented by measurement locations 1, 12, 35, 44, and 45, and entrances to the Capital House scheme (measurement locations 3, 4, 138-144) would have wind conditions suitable for sitting to strolling use during the windiest season (**Figure 10.10**); strolling use wind conditions at the entrance to the Capital House scheme represented by measurement location 3 would be one category windier than desired. This location would require wind mitigation measures.

10.119 Conditions at off-site entrances would represent a **negligible** (measurement locations 1, 4, 12, 35, 44, 45, 138-144) effect (not significant) to **minor adverse** (measurement location 3) effect (significant).

Ground Floor Amenity Space

Off-Site

10.120 The outdoor seating area of the Horseshoe Inn represented by measurement location 48 would be suitable for sitting use during the summer season, suitable for the intended amenity use (**Figure 10.11**).

10.121 These conditions would represent a **negligible** effect (not significant).

Upper Level Amenity Spaces

On-Site

10.122 Upper level amenity spaces of the Proposed Development (represented by measurement locations 153-168) would have wind conditions suitable for sitting use during the summer season, with standing use wind conditions at balcony location 158 to the south and terrace location 168 (**Figure 10.12**). If no long-term seating will be intended at these locations, these wind conditions would be suitable for a private amenity space.

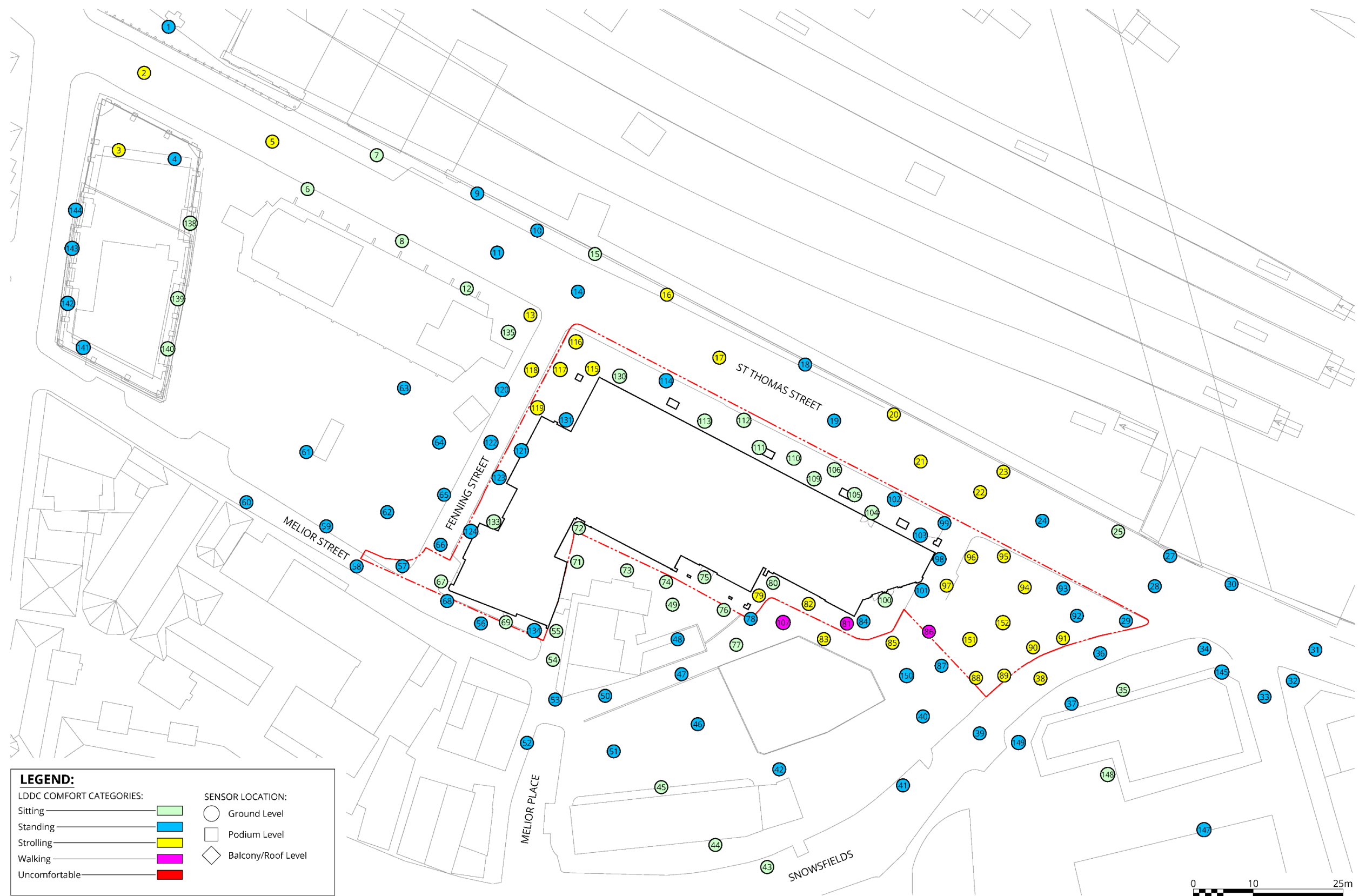
10.123 Upper level amenity spaces of the Proposed Development would therefore have wind conditions representing a **negligible** (not significant) effect.

Strong Winds

10.124 Instances of strong winds exceeding 15 m/s for more than 2.2 hours per year would occur at measurement locations 3, 81, and 107 (**Figure 10.13**); these locations would require mitigation measures.

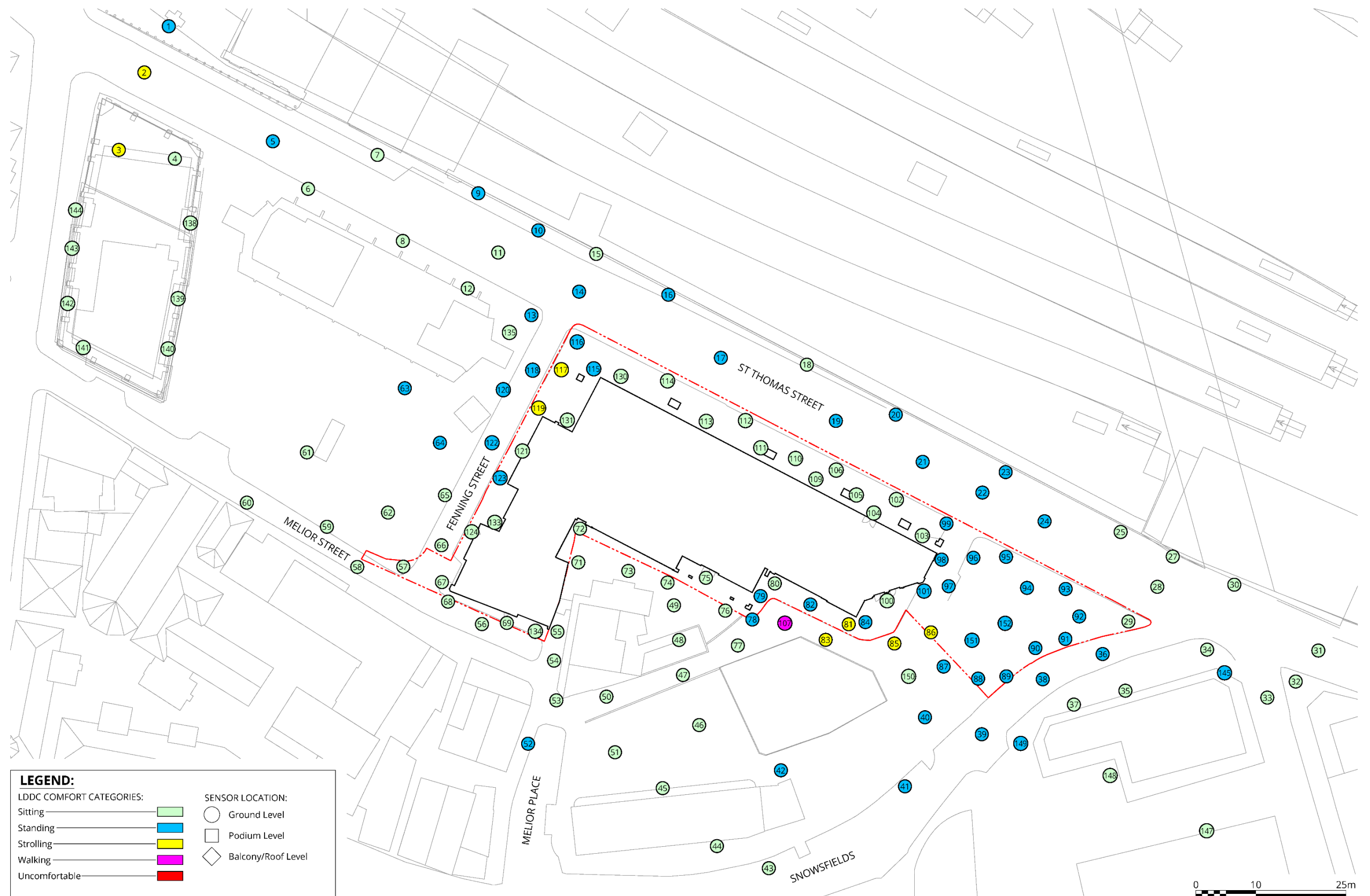
10.125 No instances of strong winds exceeding 15 m/s for more than 2.2 hours per year would occur at elevated terraces of the Proposed Development (**Figure 10.14**).

Figure 10.10 Configuration 3: Proposed Development⁷ with Existing Surrounding Buildings and Capital House– Ground Level: Windiest Season



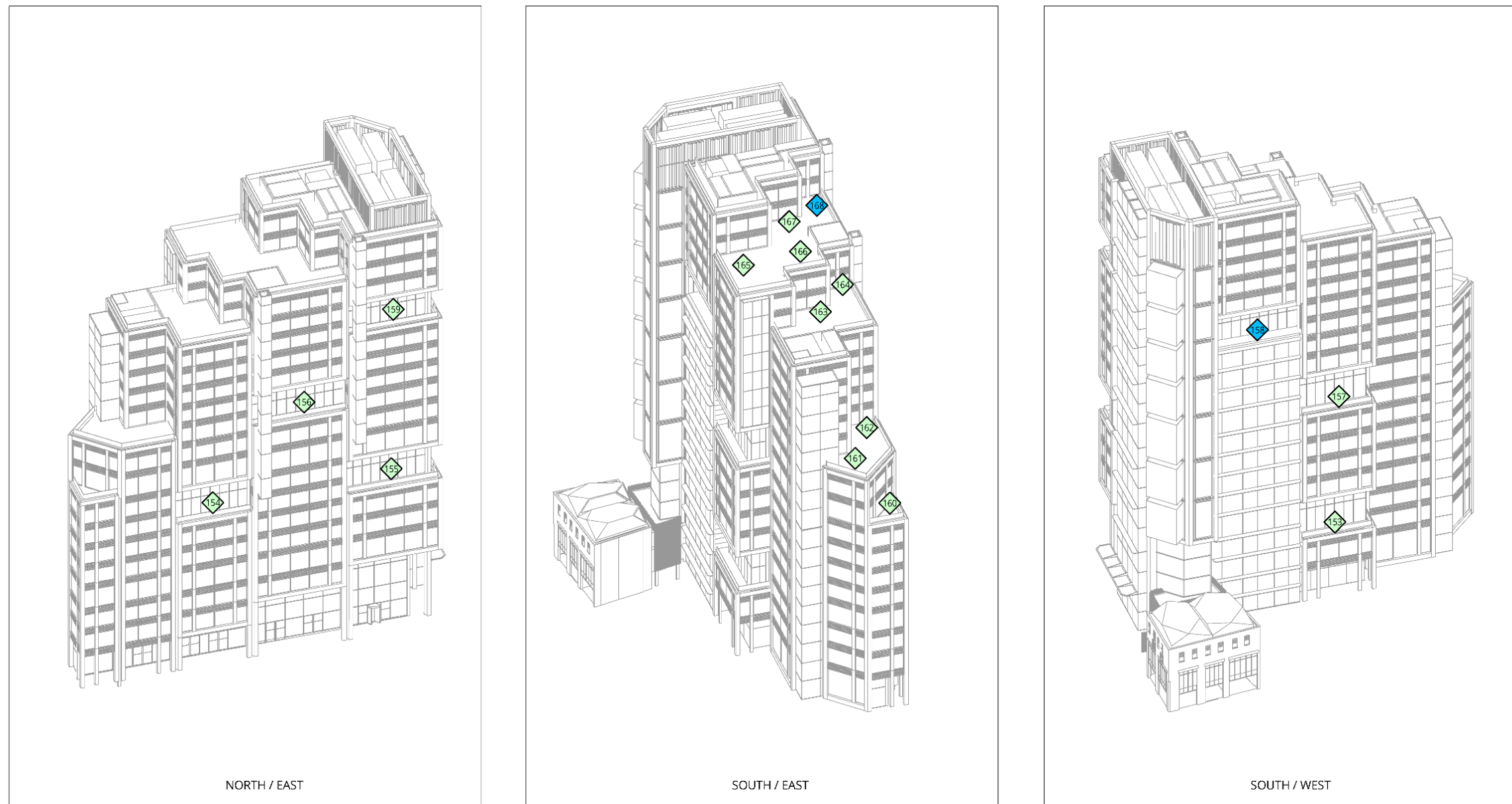
⁷ NOTE: Proposed Development, December 2020 scheme

Figure 10.11 Configuration 3: Proposed Development⁸ with Existing Surrounding Buildings and Capital House – Ground Level: Summer Season



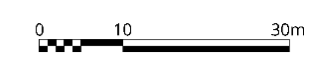
⁸ NOTE: Proposed Development, December 2020 scheme

Figure 10.12 Configuration 3: Proposed Development⁹ with Existing Surrounding Buildings and Capital House – Upper Levels: Summer Season



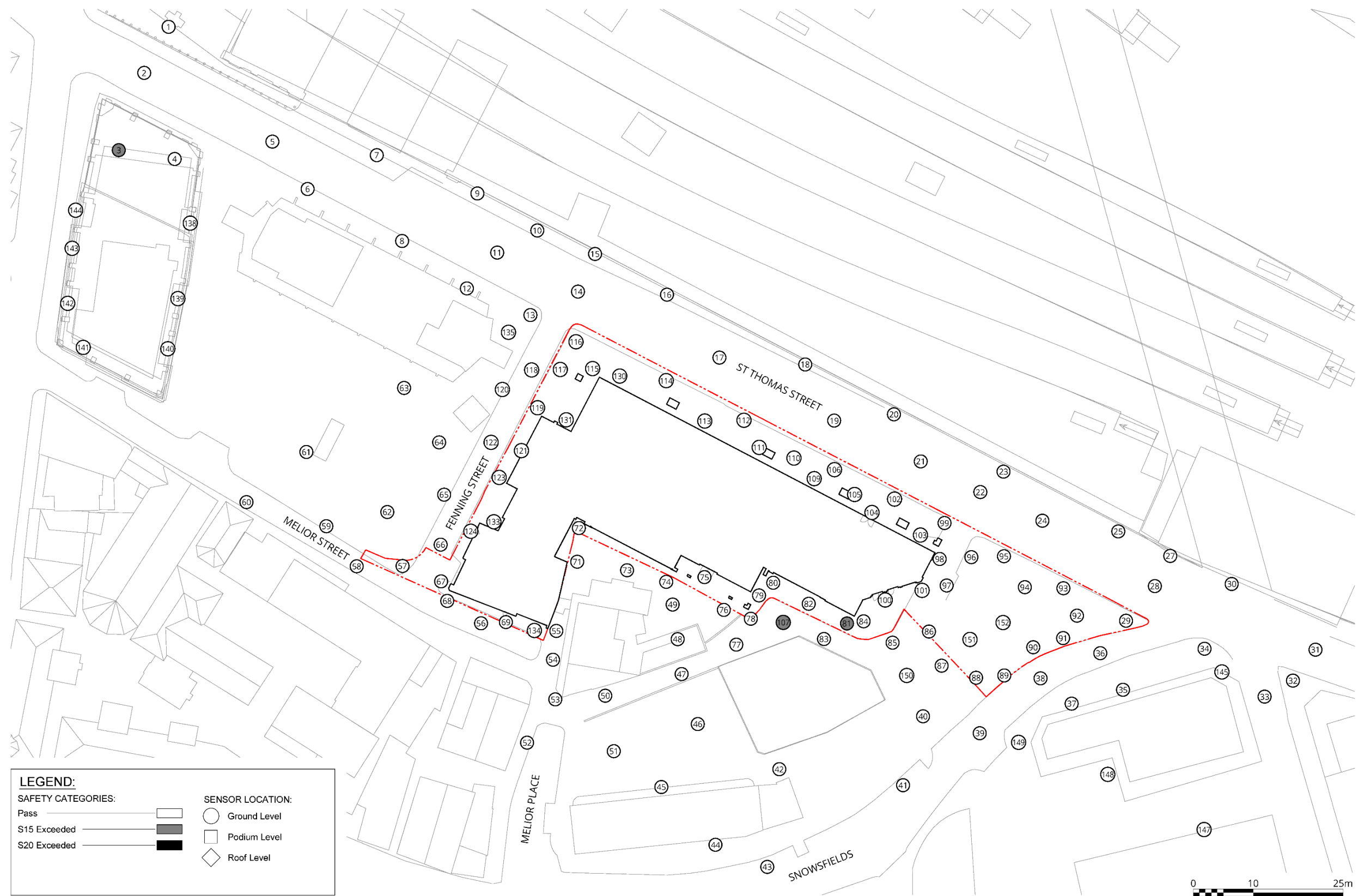
LEGEND:

LDDC COMFORT CATEGORIES:		SENSOR LOCATION:
Sitting	◆	○ Ground Level
Standing	◆	□ Podium Level
Strolling	◆	◇ Balcony/Roof Level
Walking	◆	
Uncomfortable	◆	



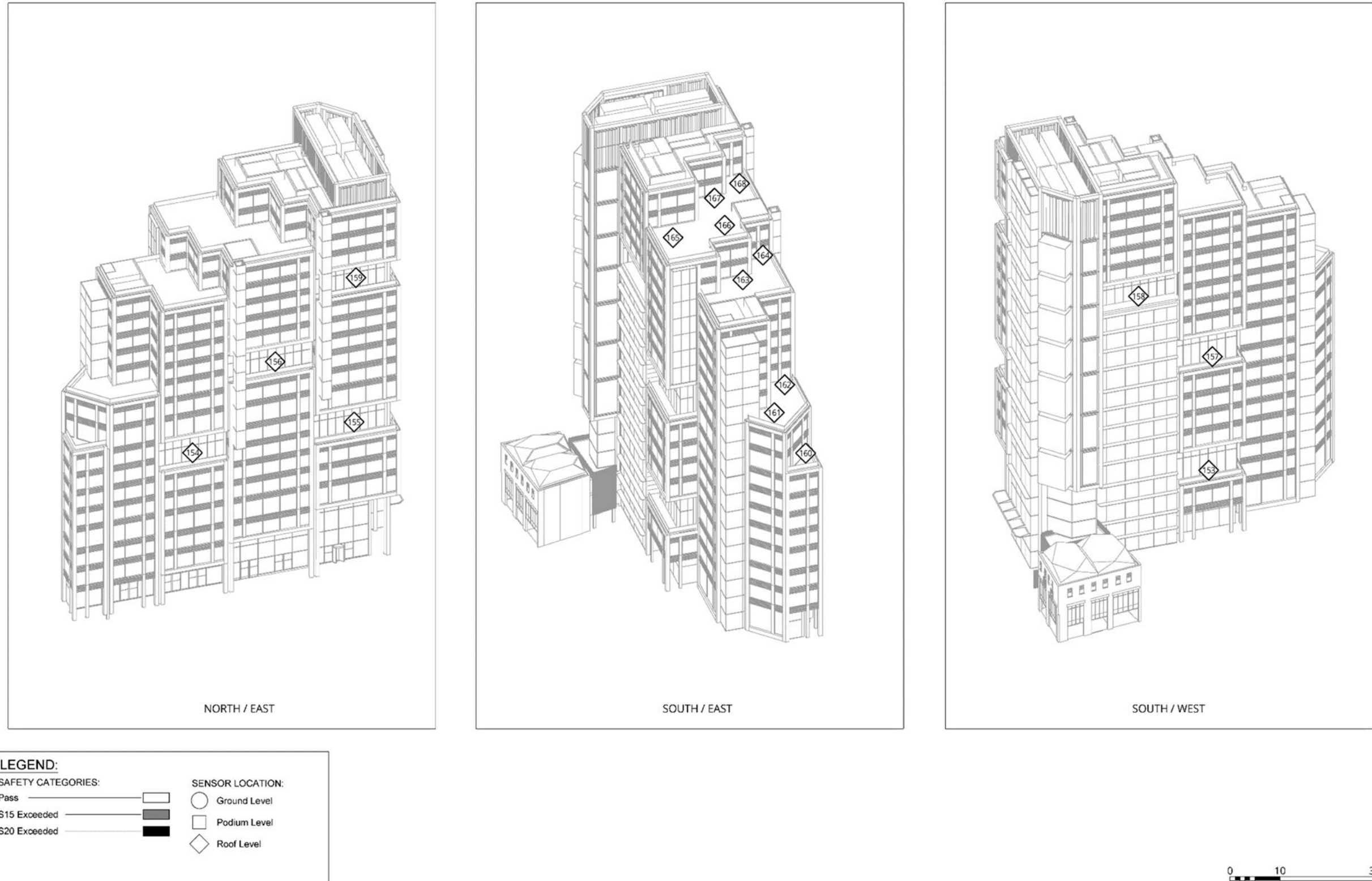
⁹ NOTE: Proposed Development, December 2020 scheme

Figure 10.13 Configuration 3: Proposed Development¹⁰ with Existing Surrounding Buildings and Capital House – Ground Level: Wind Safety Conditions



¹⁰ NOTE: Proposed Development, December 2020 scheme

Figure 10.14 Configuration 3: Proposed Development¹¹ with Existing Surrounding Buildings and Capital House – Upper Levels: Wind Safety Conditions



¹¹ NOTE: Proposed Development, December 2020 scheme

Configuration 4: Proposed Development with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme

- 10.126 The discussion of wind conditions at the Proposed Development with the existing surrounding buildings with the consented Capital House scheme, and the emerging Edge and Sellar schemes built up is based on the results presented in **Figure 10.15 and 10.16** for the windiest and the summer season at ground level, while **Figure 10.17** shows the wind conditions at the elevated levels during the summer season; instances of strong winds exceeding 15 m/s for more than 2.2 hours per year are reported in **Figures 10.18 and 10.19**.
- 10.127 Wind conditions were initially assessed devoid of landscaping in order to assess a worst-case (i.e. windy) scenario at the Proposed Development.
- 10.128 This configuration would represent the worst tested scenario (i.e. windiest); therefore, wind mitigation measures have been developed with Capital House, The Edge, and the Sellar Scheme in place and are presented in Configuration 6. Adverse effects identified in Configuration 2 and Configuration 3 would persist in Configuration 4, as such wind mitigation measures presented in Configuration 6 would remain appropriate should the Edge or the Sellar Scheme fail to come forward.

Pedestrian Comfort

- 10.129 The wind conditions for the completed Proposed Development with Capital House, The Edge and the Sellar Scheme in place would be windier than those in Configurations 2 and 3, ranging from suitable for sitting use to uncomfortable for all uses at ground floor level during the windiest season (**Figure 10.15**).
- 10.130 During the summer season (**Figure 10.16**), wind conditions at ground floor level would range from suitable for sitting to walking use. At roof terrace level conditions would range from suitable for sitting to standing use.

Thoroughfares

On-Site

- 10.131 Wind conditions at on-site thoroughfare locations would range from suitable for sitting use to uncomfortable for all uses during the windiest season (**Figure 10.15**).
- 10.132 Sitting to strolling use wind conditions would represent a **negligible** (measurement locations 79, 82, 86, 88, 90-92, 97, 116-117, 123 and 152) (not significant), **minor beneficial** (measurement locations 29, 57, 93-96, 98-99, 102, 115, 124 and 134) (not significant) or **moderate beneficial** (measurement locations 67-69, 74, 76, 80, 84, 101, 103, 105, 106, 109-114, 130 and 131) (not significant) effect.
- 10.133 Walking use wind conditions at measurement locations 89, 119, 121, and 151 would be one category windier than desired, representing a **minor adverse** effect (significant). These locations would require wind mitigation measures. Uncomfortable for all use wind conditions at measurement location 81 would be two categories windier than required, representing a **moderate adverse** (significant) effect; this location would also require mitigation.

Off-Site

- 10.134 Wind conditions at off-site thoroughfare locations would range from suitable for sitting use to strolling use during the windiest season (**Figure 10.15**), suitable for the intended use.
- 10.135 Although windier than the Baseline, these wind conditions would remain suitable for the intended use and would therefore represent a **negligible** (measurement locations 6-10, 13, 15, 16, 18, 32, 37, 46, 47, 49-55, 59, 62-65, 71, 73, 87, 120, 121, 157, 147, 148, and 150) effect (not significant).

Roadway

Off-Site

- 10.136 Wind conditions on most off-site roads (measurement locations 5, 11, 14, 17, 19, 20-25, 27, 30, 31, 36, 38, 39, 41, 43, 56, 58, 60, 66, 77, 83, 85, 107, 118, 122) would suitable for sitting use to walking use during the windiest season, suitable for the intended use (**Figure 10.15**). This represents a **negligible** effect (not significant).
- 10.137 Uncomfortable for all use wind conditions at measurement location 107 would be one category windier than desired, representing a **minor adverse** (significant) effect. This location would require mitigation.

Crossings

Off-Site

- 10.138 Wind conditions at the off-site crossings (measurement locations 2, 28, 33, and 34) would be suitable for strolling use or calmer during the windiest season, suitable for the intended use (**Figure 10.15**). This represents a **negligible** effect (not significant).

Entrances

On-Site

- 10.139 Entrances to the Proposed Development represented by measurement locations 69, 72, 75, 100, 104, and 133 would have wind conditions suitable for sitting use during the windiest season, suitable for the intended use (**Figure 10.15**).

- 10.140 Conditions at all on-site-entrances would represent a **minor beneficial** (not significant) effect.

Off-Site

- 10.141 Entrances to the surrounding buildings represented by measurement locations 1, 12, 35, 44, 45, entrances to Capital House (measurement locations 3, 4, 138-144), entrances to the Sellar Scheme (measurement locations 40, 42, 145, 146, and 149), and entrances to the Edge (measurement locations 135-138) would have wind conditions suitable for sitting to strolling use during the windiest season (**Figure 10.15**); strolling use wind conditions at the entrance to the Sellar Scheme represented by measurement location 149 would be one category windier than desired. However, this entrance would be recessed by 1.5m within the façade, and this is expected to result in calmer wind conditions at this entrance.

- 10.142 Conditions at off-site entrances would represent a **negligible** effect (not significant)

Ground Floor Amenity Space

Off-Site

- 10.143 The outdoor seating area of the Horseshoe Inn represented by measurement location 48 would be suitable for sitting use during the summer season, suitable for the intended amenity use (**Figure 10.16**).

- 10.144 These conditions would represent a **negligible** effect (not significant).

Upper Level Amenity Spaces

On-Site

- 10.145 Upper level amenity spaces of the Proposed Development (represented by measurement locations 153-168) would have wind conditions suitable for sitting use during the summer season, with standing use wind conditions at balcony location 158 to the south and terrace location 168 (**Figure 10.17**). If no long-term seating will be intended at these locations, these wind conditions would be suitable for a private amenity space.

- 10.146 Upper level amenity spaces of the Proposed Development would therefore have wind conditions representing a **negligible** (not significant) effect.

Strong Winds

- 10.147 Instances of strong winds exceeding 15 m/s for more than 2.2 hours per year would occur at measurement locations 81, 83, 85, and 107 (**Figure 10.18**); these locations would require mitigation measures.

- 10.148 No instances of strong winds exceeding 15 m/s for more than 2.2 hours per year would occur at elevated terraces of the Proposed Development (**Figure 10.19**).

Figure 10.15 Configuration 4: Proposed Development¹² with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Ground Level: Windiest Season



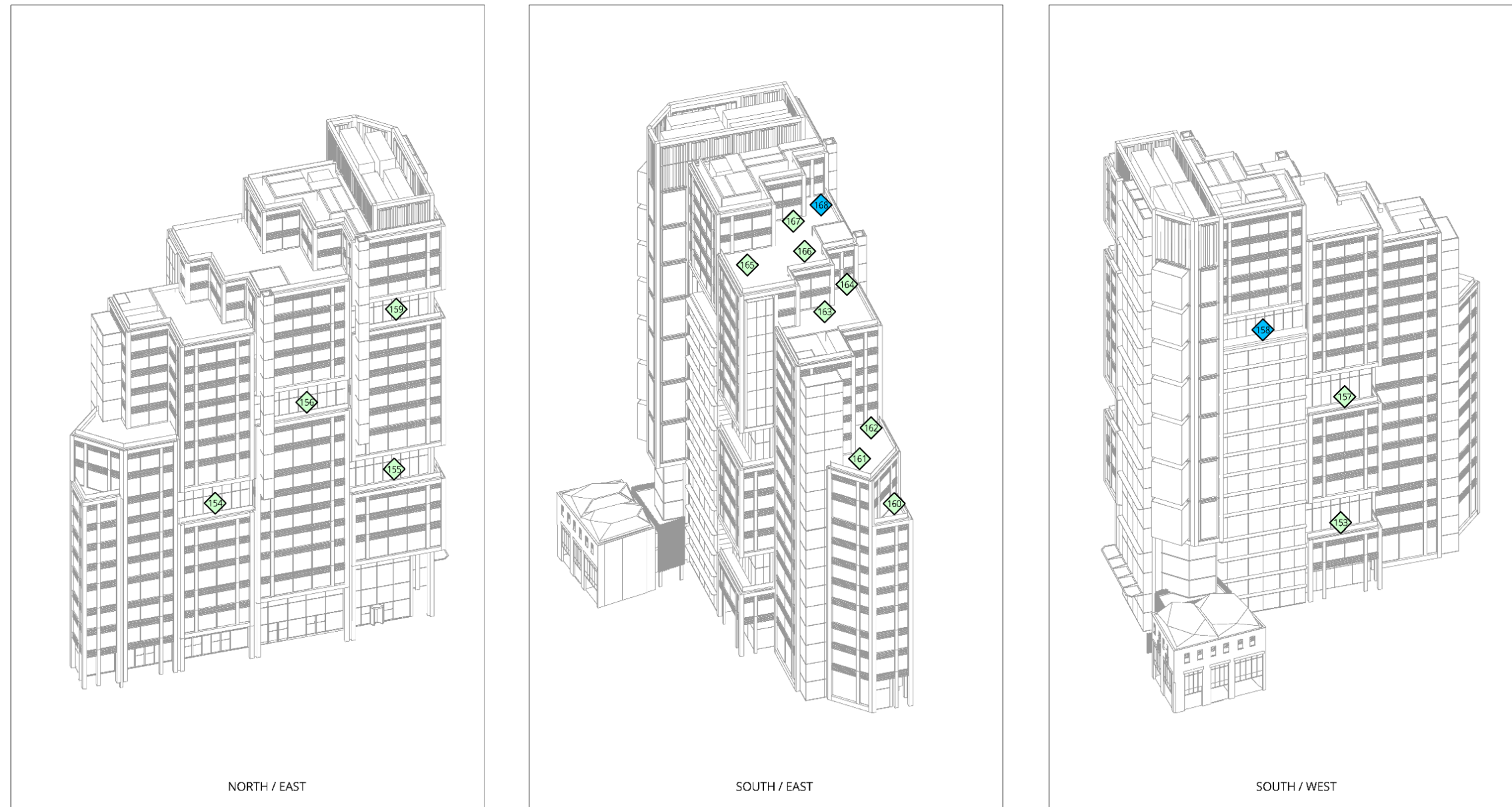
¹² NOTE: Proposed Development, December 2020 scheme

Figure 10.16 Configuration 4: Proposed Development¹³ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Ground Level: Summer Season



¹³ NOTE: Proposed Development, December 2020 scheme

Figure 10.17 Configuration 4: Proposed Development¹⁴ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Upper Levels: Summer Season



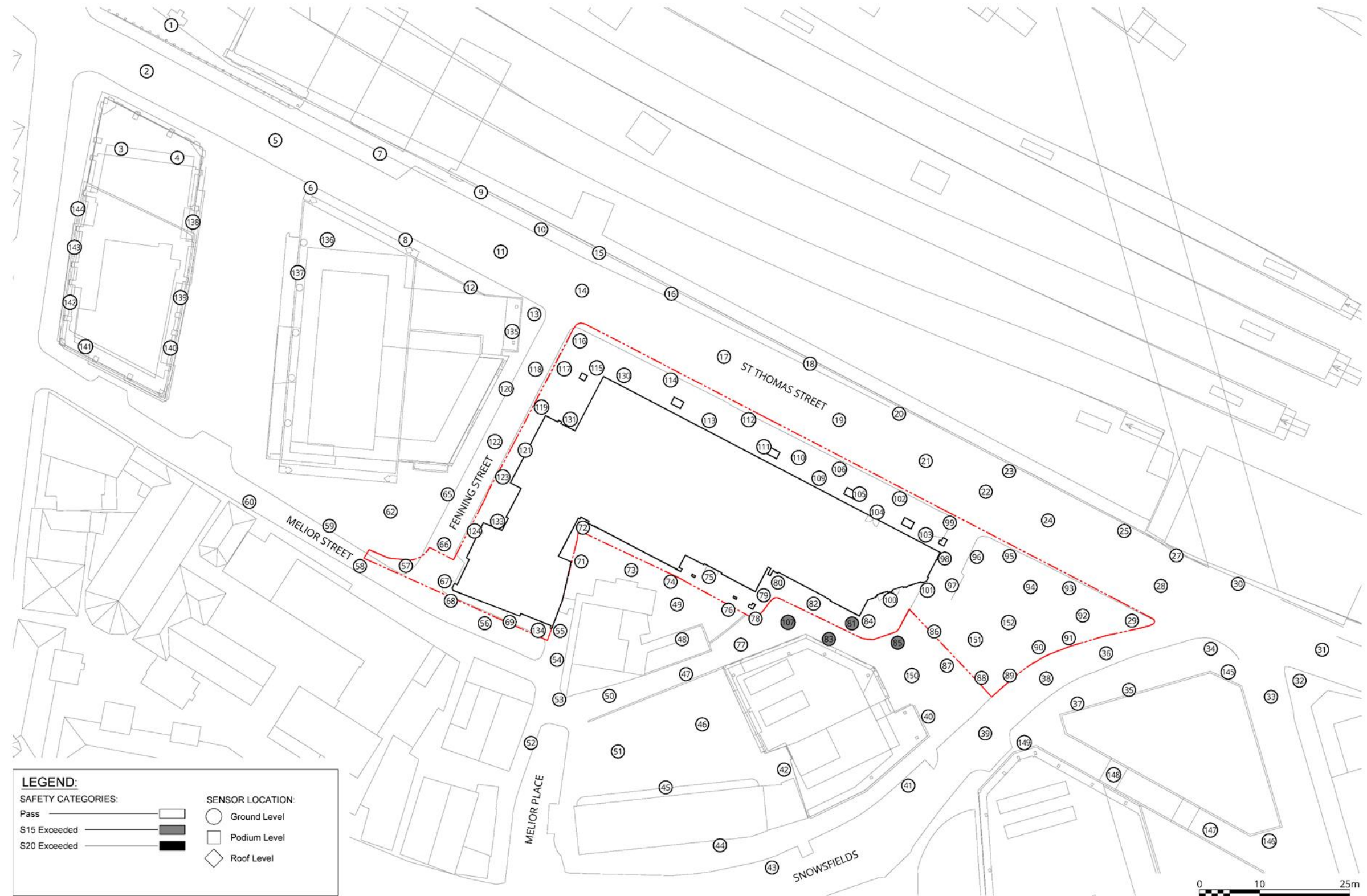
LEGEND:

LDDC COMFORT CATEGORIES:		SENSOR LOCATION:	
Sitting	■	○	Ground Level
Standing	■	□	Podium Level
Strolling	■	◇	Balcony/Roof Level
Walking	■		
Uncomfortable	■		



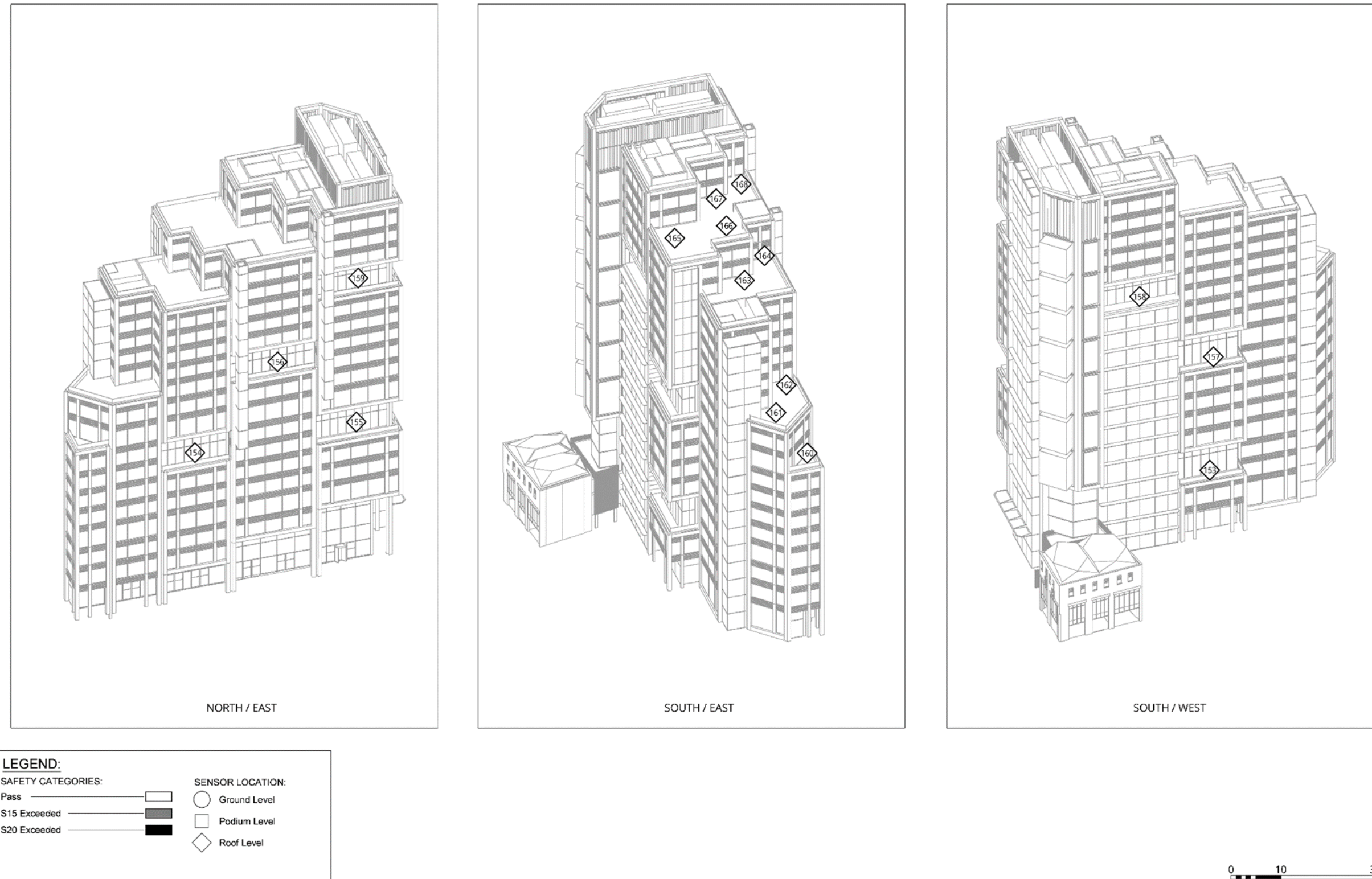
¹⁴ NOTE: Proposed Development, December 2020 scheme

Figure 10.18 Configuration 4: Proposed Development¹⁵ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Ground Level: Wind Safety Conditions



¹⁵ NOTE: Proposed Development, December 2020 scheme

Figure 10.19 Configuration 4: Proposed Development¹⁶ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Upper Levels: Wind Safety Conditions



¹⁶ NOTE: Proposed Development, December 2020 scheme

MITIGATION AND MONITORING MEASURES

Demolition and Construction

10.149 During construction, the areas under construction will be hoarded off until the point where the building becomes occupied.

10.150 No further mitigation is required during the demolition and construction of the Proposed Development.

Completed Development

10.151 Wind tunnel testing of the Proposed Development (Configuration 4) identified wind conditions across the site and off-site that would be windier than suitable for the intended pedestrian use, resulting in the potential for significant adverse effects. A number of locations were also identified where instances of strong winds would have the potential to cause distress to pedestrians and cyclists. The results of the initial wind tunnel testing identified the need for consideration of a landscaping strategy and wind mitigation measures, which have been tested as part of further iterative wind tunnel modelling for Configuration 6.

10.152 The initial wind tunnel test undertaken identified the potential for significant adverse effects at several locations, including the following:

- On-site thoroughfare locations 81, 89, 119, 121, and 151; and
- Off-site roadway location 107.

10.153 Additionally, strong winds with the potential to cause distress to pedestrians and cyclists were identified at the following locations:

- On-site thoroughfare location 81; and
- Off-site roadways locations 83, 85, and 107.

Mitigation and Further Testing

10.154 Initial wind tunnel testing for all model configurations was undertaken where the model was devoid of landscaping in order to assess a worst-case scenario. Further to the results identified from the initial wind tunnel testing, a proposed landscaping scheme was developed to address the instances of adverse impacts across the site, including the potential for strong winds at several locations.

10.155 The proposed landscaping scheme was assessed during a wind mitigation workshop during November 2020. This workshop allowed the effectiveness of the proposed landscaping scheme and the building design amendments applied to the Proposed Development to be tested and, where necessary, further wind mitigation measures developed through an iterative process.

10.156 The following measures were identified during the iterative testing to achieve the results presented below (and in Annex B of this ES Chapter):

- Proposed landscaping scheme;
- Consented landscaping scheme around Capital House, and the proposed landscaping schemes for the Edge, and the Sellar Schemes;
- 2.5m wide solid canopy at the south-east corner of the Proposed Development at the top of the colonnade extended around the south-eastern corner (Figure 15 of Annex 2);
- 1.5m high dense shrubs approximately 2m long added underneath the solid canopy along the southern side of the Proposed Development (Figure 16 of Annex 2);
- 1.5m high dense shrubs approximately 2m long added underneath the solid canopy between probe locations 81 and 84 (Figure 16 of Annex 2);
- One additional 10m high deciduous tree added between the Proposed Development and the Sellar Scheme (Figure 17 of Annex 2);
- 1.5m high line of dense shrubs added along the north-western side of the Sellar Scheme extended from the tree to the building's corner (Figure 17 of Annex 2);

- Three 10m high deciduous trees and five 7m high deciduous trees added to the south of the Proposed Development (Figure 17 of Annex 2); and

- Five existing trees retained along Vinegar Yard (Figure 17 of Annex 2).

10.157 All these mitigation measures have been presented in Figures 15-22 of *ES Volume 3 – Appendix: Wind Microclimate, Annex 2*.

10.158 In the event the Edge and the Sellar schemes do not come forward, the wind mitigation measures developed in the context of Capital House, the Edge and the Sellar schemes detailed above would remain relevant to ensure adverse (significant) effects or instances of strong winds were mitigated.

Configuration 6: Proposed Development with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme, with developed Mitigation and Proposed Landscaping

10.159 The discussion of wind conditions at the Proposed Development with the existing surrounding buildings and with the consented Capital House, and emerging Edge, and Sellar Schemes built up with developed mitigation and proposed landscaping is based on the results presented in **Figure 10.20 and 10.21** for the windiest and the summer season at ground level, while **Figure 10.22** shows the wind conditions at the elevated levels during the summer season; instances of strong winds exceeding 15 m/s for more than 2.2 hours per year are reported in **Figures 10.23 and 10.24**.

Pedestrian Comfort

10.160 The wind conditions for the completed Proposed Development with Capital House, The Edge and the Sellar Scheme in place with developed mitigation and proposed landscaping would range from suitable for sitting use to walking use at ground floor level during the windiest season (**Figure 10.20**).

10.161 During the summer season (**Figure 10.16**), wind conditions at ground floor level would range from suitable for sitting to strolling use. At roof terrace level conditions would range from suitable for sitting to standing use.

Thoroughfares

On-Site

10.162 With the inclusion of the wind mitigation measures and the proposed landscaping, wind conditions at on-site thoroughfare locations would range from suitable for sitting use to strolling use during the windiest season (**Figure 10.20**).

10.163 Sitting to strolling use wind conditions would represent a **negligible** (not significant) to **minor beneficial** (significant) effect.

Off-Site

10.164 Wind conditions at off-site thoroughfare locations would range from suitable for sitting use to strolling use during the windiest season (**Figure 10.20**), suitable for the intended use.

10.165 These conditions are suitable for pedestrian thoroughfare and would therefore represent a **negligible** effect (measurement locations 6-10, 13, 15, 16, 18, 32, 37, 46, 47, 49-55, 59, 62-65, 71, 73, 87, 120, 121, 157, 147, 148, and 150) (not significant).

Roadway

Off-Site

10.166 Wind conditions at all off-site roads (measurement locations 5, 11, 14, 17, 19, 20-25, 27, 30, 31, 36, 38, 39, 41, 43, 56, 58, 60, 66, 77, 83, 85, 107, 118, 122) would be suitable for sitting use to walking use during the windiest season, suitable for the intended use (**Figure 10.20**). This represents a **negligible** effect (not significant).

Crossings

Off-Site

10.167 Wind conditions at the off-site crossings (measurement locations 2, 28, 33, and 34) would be suitable for strolling use or calmer during the windiest season, suitable for the intended use (**Figure 10.20**). This represents a **negligible** effect (not significant).

Entrances

On-Site

10.168 Entrances to the Proposed Development represented by measurement locations 69, 72, 75, 100, 104, and 133 would have wind conditions suitable for sitting use during the windiest season, suitable for the intended use (**Figure 10.20**).

10.169 Conditions at on-site-entrances would represent a **minor beneficial** (not significant) effect.

Off-Site

10.170 Entrances to the surrounding buildings represented by measurement locations 1, 12, 35, 44, 45, entrances to Capital House (measurement locations 3, 4, 138-144), entrances to the Sellar Scheme (measurement locations 40, 42, 145, 146, and 149), and entrances to the Edge (measurement locations 135-138) would have wind conditions suitable for sitting to strolling use during the windiest season (**Figure 10.20**); strolling use wind conditions at the entrance to the Sellar Scheme represented by measurement location 149 would be one category windier than desired. However, this entrance would be recessed by 1.5m within the façade, and this is expected to result in calmer wind conditions at this entrance.

10.171 Conditions at off-site entrances would represent a **negligible** effect (not significant)

Ground Floor Amenity Space

Off-Site

10.172 The outdoor seating area of the Horseshoe Inn represented by measurement location 48 would be suitable for sitting use during the summer season, suitable for the intended amenity use (**Figure 10.21**).

10.173 These conditions would represent a **negligible** effect (not significant).

Upper Level Amenity Spaces

On-Site

10.174 Upper level amenity spaces of the Proposed Development (represented by measurement locations 153-168) would have wind conditions suitable for sitting use during the summer season, with standing use wind conditions at balcony location 158 to the south (**Figure 10.22**). If no long-term seating will be intended at this location, these wind conditions would be suitable for a private amenity space.

10.175 Upper level amenity spaces of the Proposed Development would therefore have wind conditions representing a **negligible** (not significant) effect.

Strong Winds

10.176 No instances of strong winds exceeding 15 m/s for more than 2.2 hours per year would occur at ground level and elevated terraces of the Proposed Development (**Figures 10.23 and 10.24**).

Figure 10.20 Configuration 6: Proposed Development¹⁷ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme, with developed Mitigation and Proposed Landscaping – Ground Level: Windiest Season



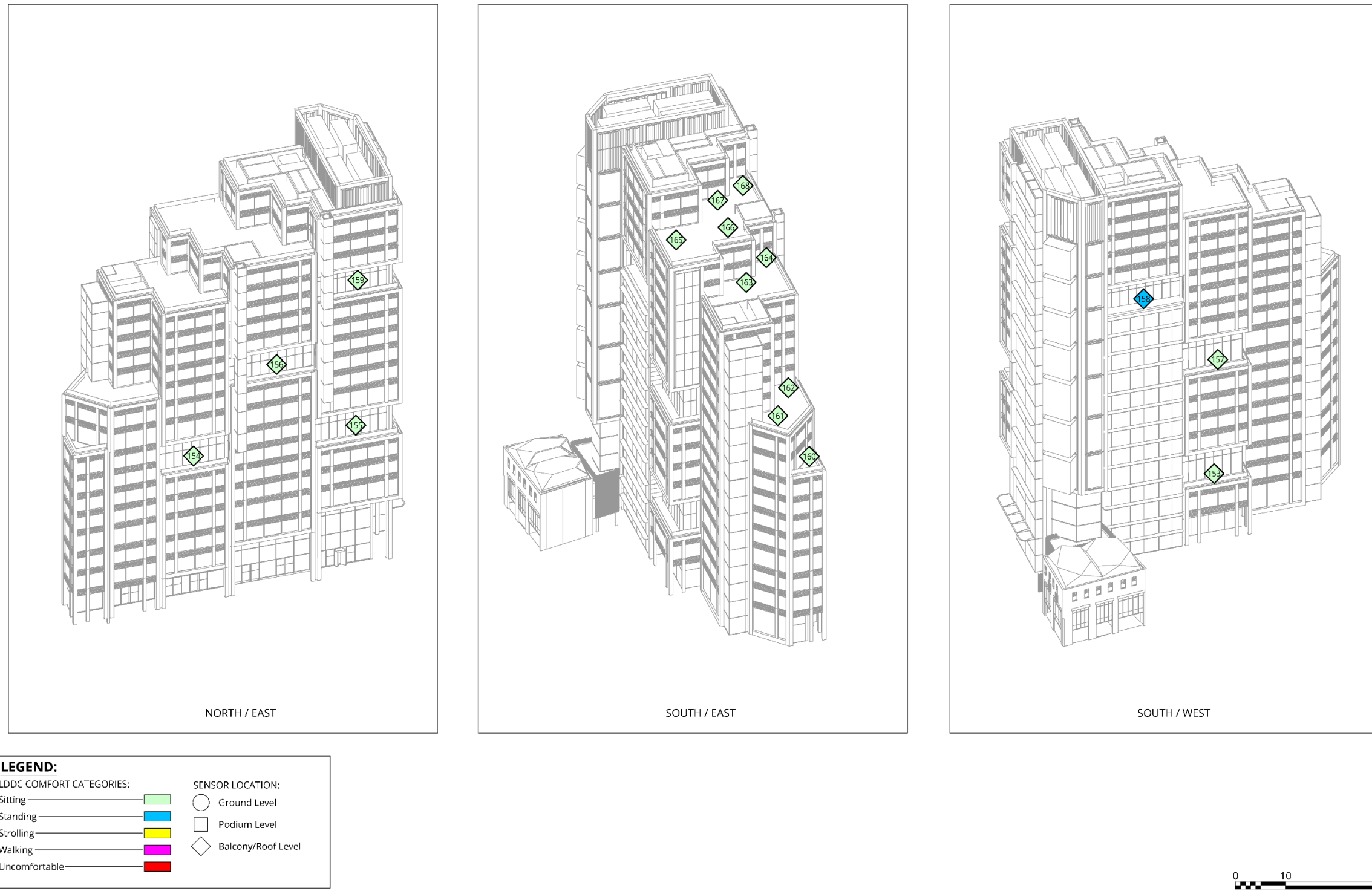
¹⁷ NOTE: Proposed Development, December 2020 scheme

Figure 10.21 Configuration 6: Proposed Development¹⁸ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme, with developed Mitigation and Proposed Landscaping – Ground Level: Summer Season



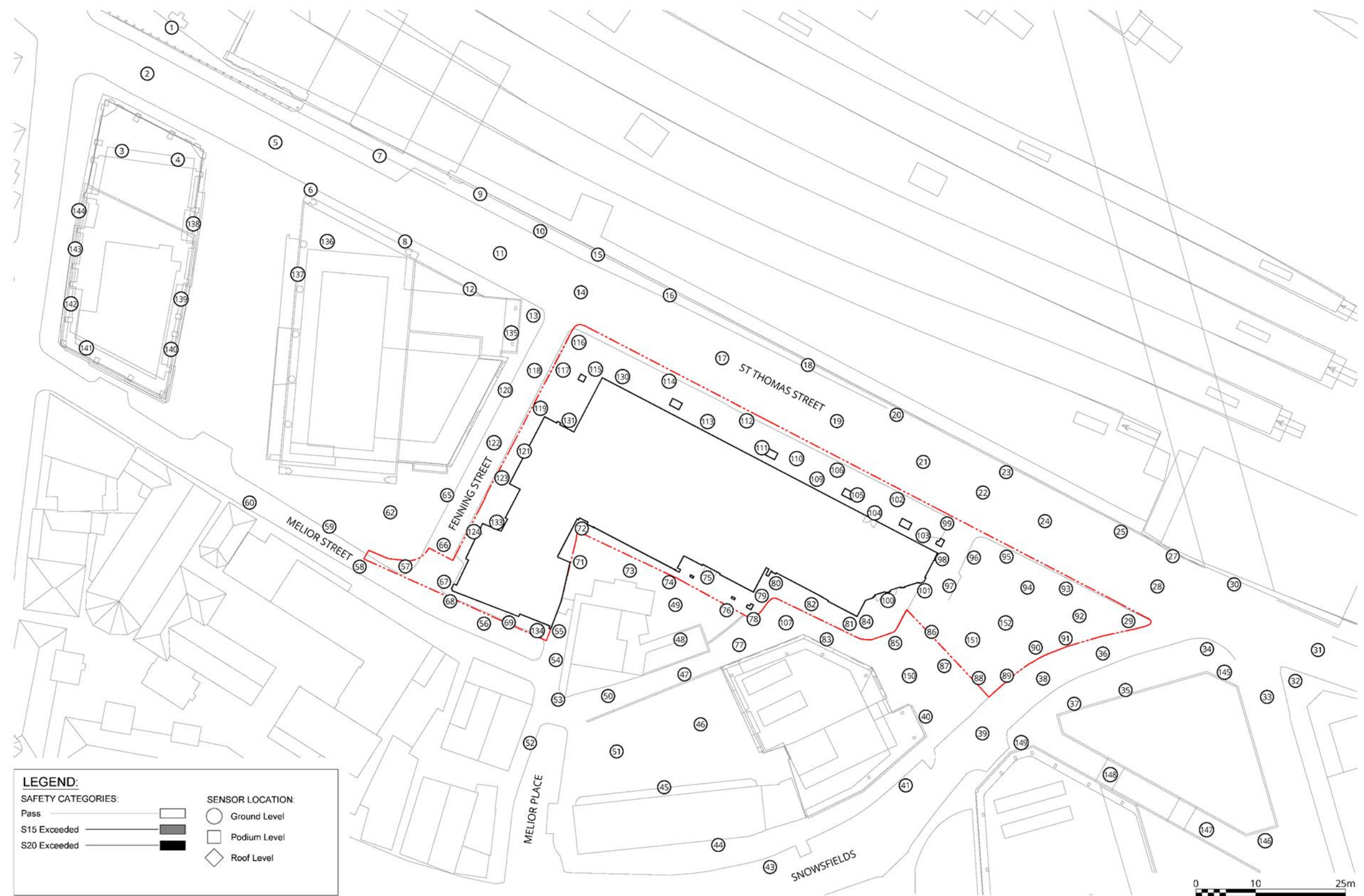
¹⁸ NOTE: Proposed Development, December 2020 scheme

Figure 10.22 Configuration 6: Proposed Development¹⁹ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme, with developed Mitigation and Proposed Landscaping – Upper Levels: Summer Season



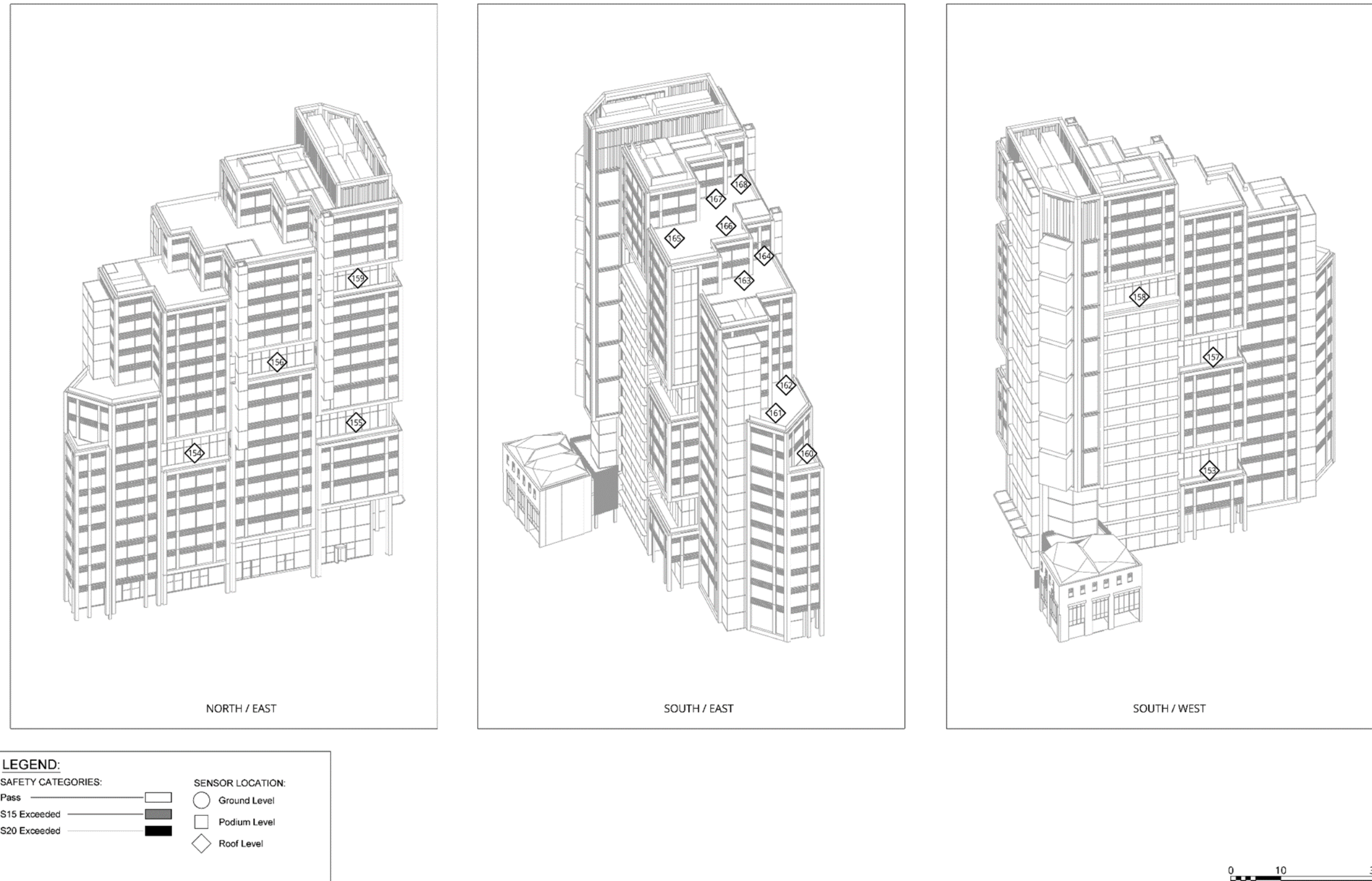
¹⁹ NOTE: Proposed Development, December 2020 scheme

Figure 10.23 Configuration 6: Proposed Development²⁰ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme, with developed Mitigation and Proposed Landscaping – Ground Level: Wind Safety Conditions



²⁰ NOTE: Proposed Development, December 2020 scheme

Figure 10.24 Configuration 6: Proposed Development²¹ with Existing Surrounding Buildings, Capital House, The Edge, and Sellar Scheme, with developed Mitigation and Proposed Landscaping – Upper Levels: Wind Safety Conditions



²¹ NOTE: Proposed Development, December 2020 scheme

RESIDUAL EFFECTS

10.177 The residual effects resulting from the December 2020 scheme²² are summarised in Table 10.3.

Table 10.3 Summary of Residual Effects – December 2020 Scheme

Receptor (Season)	Residual Effect (Nature and Scale)	Effect Significance	Geo	D I	P T	St Mt Lt
Demolition and Construction						
Demolition and Construction site	Negligible	Not Significant	L	D	T	Lt
Completed Development						
On-site						
Pedestrian Thoroughfares (Windiest)	Negligible to moderate beneficial	Not Significant	L	D	P	Lt
Entrances (Windiest)	Minor beneficial	Not Significant	L	D	P	Lt
Upper Level Amenity (Summer)	Negligible	Not Significant	L	D	P	Lt
Off-Site						
Pedestrian Thoroughfares (Windiest)	Negligible	Not Significant	L	D	P	Lt
Crossings (Windiest)	Negligible	Not Significant	L	D	P	Lt
Entrances (Windiest)	Negligible	Not Significant	L	D	P	Lt
Ground Floor Amenity (Summer)	Negligible	Not Significant	L	D	P	Lt
Roadway (Windiest)	Negligible	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						
N/A = not applicable / not assessed						

10.178 Overall, the residual effects as a result of the Proposed Development remain generally the same as to those reported for the 2018 scheme. More beneficial effects have been identified on site at thoroughfares, but no additional likely significant effects have been identified as a result of the Proposed Development.

LIKELY SIGNIFICANT EFFECTS

10.179 All of the modelled wind microclimate residual effects, following the implementation of wind mitigation measures, are not considered to be significant, where the predicted wind conditions are suitable or calmer than the desired comfort category.

CLIMATE CHANGE

10.180 The UK Climate Projections (UKCP18) published by the Met Office presents several different predicted scenarios. The 'Climate Projects Report' published by UKCP18 presents the probable changes in wind speed for 2070 – 2099 (timeframe considered most relevant for urban regeneration projects) in both the summer and winter seasons. With these predictions, the current trends in climate change are not likely to have any significant effects or material changes on the predicted wind microclimate conditions in and around the Proposed Development. It is therefore not necessary to provide a quantitative analysis of the increase in storm frequency or changes in mean wind speed and its implication on the effect on the Wind Microclimate for the Proposed Development.

ASSESSMENT OF FUTURE ENVIRONMENT

Evolution of the Baseline Scenario

10.181 In the absence of the Proposed Development, the wind microclimate conditions across the majority of the site would remain as defined for the current baseline conditions (under wind tunnel Configuration 1). This assumes that generally the wind microclimate conditions (as defined by metrological data) for London and the south-east of England would remain as presented within this assessment.

10.182 The wind conditions for the future baseline scenario has been informed by the baseline wind tunnel testing scenario (Configuration 1) and the wind tunnel testing of the Proposed Development with the relevant cumulative schemes ('Configuration 5). Should the Proposed Development not come forward, the wind conditions would gradually adapt to those of Configuration 5, with slightly calmer wind conditions expected to occur on-site due to the smaller massing of the existing buildings in comparison to the Proposed Development.

Cumulative Effects Assessment

10.183 This section identifies the effects of the Proposed Development in combination with the effects of other cumulative schemes within the surrounding area (identified in *ES Chapter 2 – EIA Methodology (Volume 1)*).

10.184 Since the cumulative assessment of the Proposed Development with other cumulative schemes took place in December 2020 (as discussed in the following assessment scenario), the status of some cumulative schemes have changed. The changes to the cumulative schemes that are of relevance to the wind microclimate assessment are detailed below:

- Becket House 60-68 – 20/AP/0944 (referred to within this ES as the 'Edge Scheme' now has Resolution to Grant rather than being undetermined. However, as the Edge scheme has been inherently tested as part of the main assessment as well as the cumulative assessment presented below, the change in status of the scheme is immaterial to the assessment undertaken in December 2020 and therefore no updates to the cumulative assessment are considered to be required.

10.185 Although the consented Capital House and Edge schemes and emerging Sellar cumulative schemes along St Thomas Street have been inherently tested as part of the main assessment, a further cumulative assessment scenario (Configuration 5) was tested in order to predict the wind conditions within the site and surrounding area in the presence of the additional surrounding cumulative schemes. The additional cumulative schemes considered in the cumulative effects assessment comprise:

- Melior Place – 18/AP/3229 (granted); and
- Guinness Court – 16/AP/3819 (granted). These cumulative schemes were included as they were within a 360m radius of the site (see section 'Wind Tunnel Assessment Methodology').

²²Although the assessment and therefore the residual effects are based on the December 2020 scheme, it is considered that they are also reflective of the revised October 2021 scheme.

10.186 Configuration 5 tested the wind conditions at and surrounding the Proposed Development with the cumulative surrounding buildings in place, as well as Capital House, The Edge, and the Sellar Scheme built up on the basis of this being the worst case (i.e. windiest) scenario (Configuration 4).

Demolition and Construction

10.187 The cumulative schemes are not considered likely to have a material impact on the wind microclimate at the site due to the measures inherent to the cumulative schemes and the relative distance and location (in a non-prevailing wind direction) between the developments.

10.188 Therefore, wind conditions during the demolition and construction works at the site and surrounding area would represent a likely **negligible** effect (not significant).

Completed Development

Configuration 5: Proposed Development with Cumulative Surrounding Buildings, Capital House, The Edge, and Sellar Scheme.

10.189 Wind conditions at the Proposed Development with the cumulative surrounding buildings with Capital House, the Edge, and the Sellar Scheme built up are graphically presented in **Figure 10.25 and 10.26** for the windiest and the summer season at ground level, while **Figure 10.27** shows the wind conditions at the elevated levels during the summer season; instances of strong winds exceeding 15 m/s for more than 2.2 hours per year are reported in **Figures 10.28 and 10.29**.

10.190 Wind conditions for Configuration 5 have been assessed devoid of landscaping/mitigation in order to assess a worst-case (i.e. windy) scenario at the Proposed Development.

10.191 Results for Configuration 5 are similar to those presented in Configuration 4, due to the distance from the site of the cumulative surrounding buildings which would not create additional adverse or significant effects on the wind microclimate at and surrounding the Proposed Development. Therefore, results have not been discussed in detail. However, the wind conditions at and surrounding the Proposed Development in Configuration 5 have been graphically presented in **Figures 10.25-10.29**.

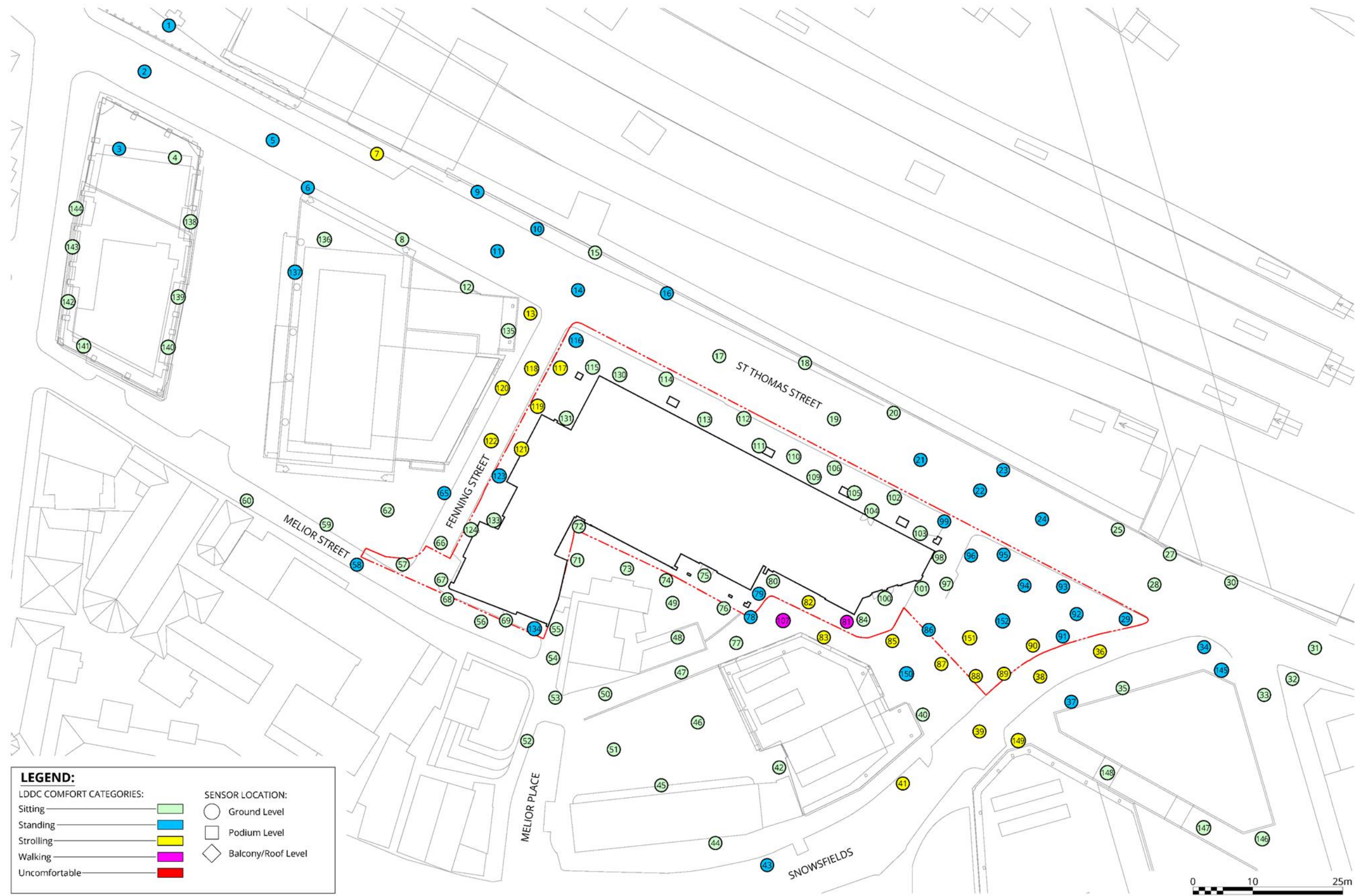
10.192 It should be noted that the developed mitigation and the proposed landscaping tested in Configuration 6 have been wind tunnel tested with the cumulative surrounding buildings in place; results (not reported in this document) confirmed the effectiveness of the wind mitigation strategy developed during the wind mitigation workshop held on November 20th 2020 and would result in suitable wind conditions at and surrounding the Proposed Development with the cumulative surrounding in place.

Figure 10.25 Configuration 5: Proposed Development²³ with Cumulative Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Ground Level: Windiest Season



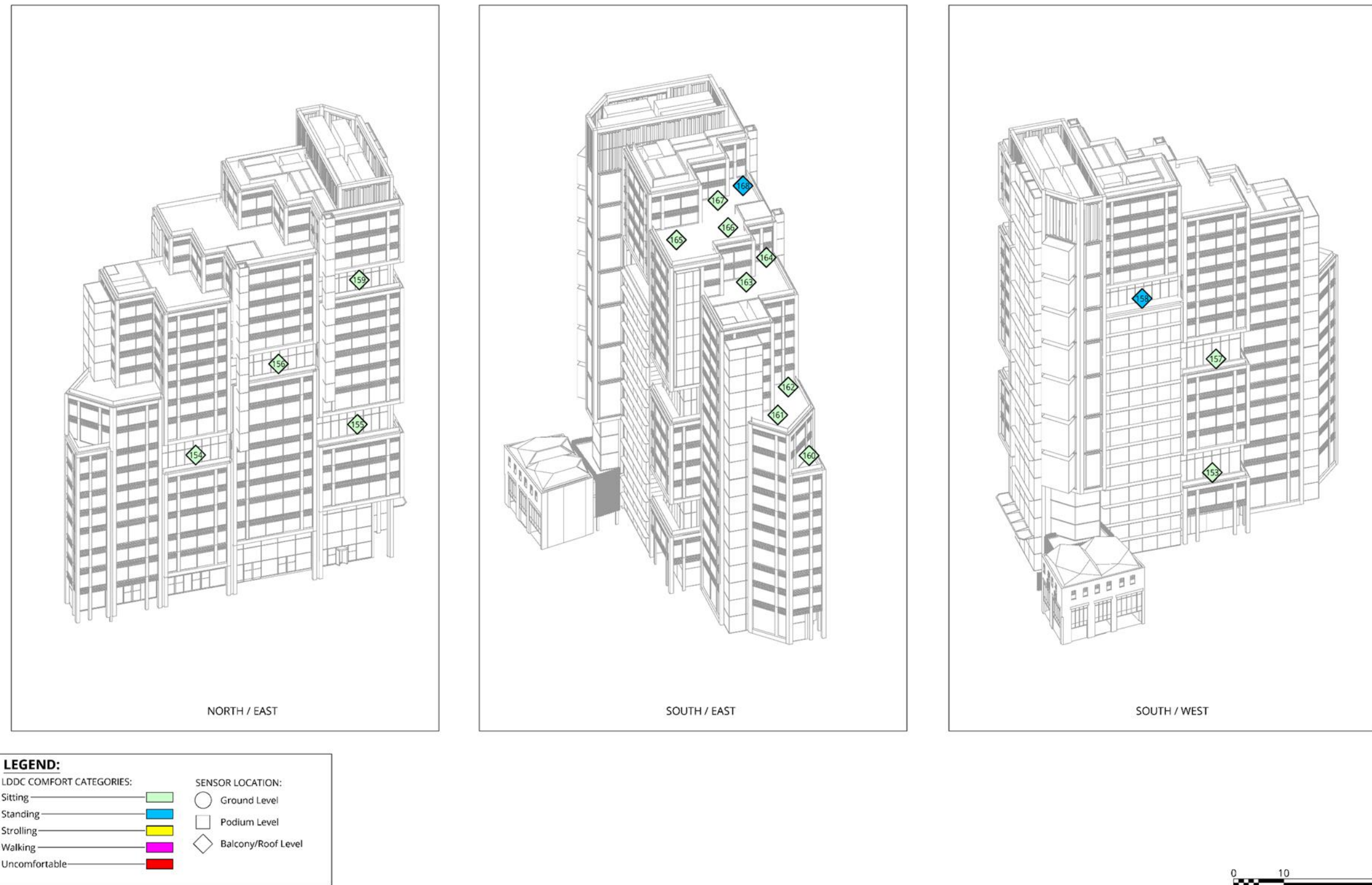
²³ NOTE: Proposed Development, December 2020 scheme

Figure 10.26 Configuration 5: Proposed Development²⁴ with Cumulative Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Ground Level: Summer Season



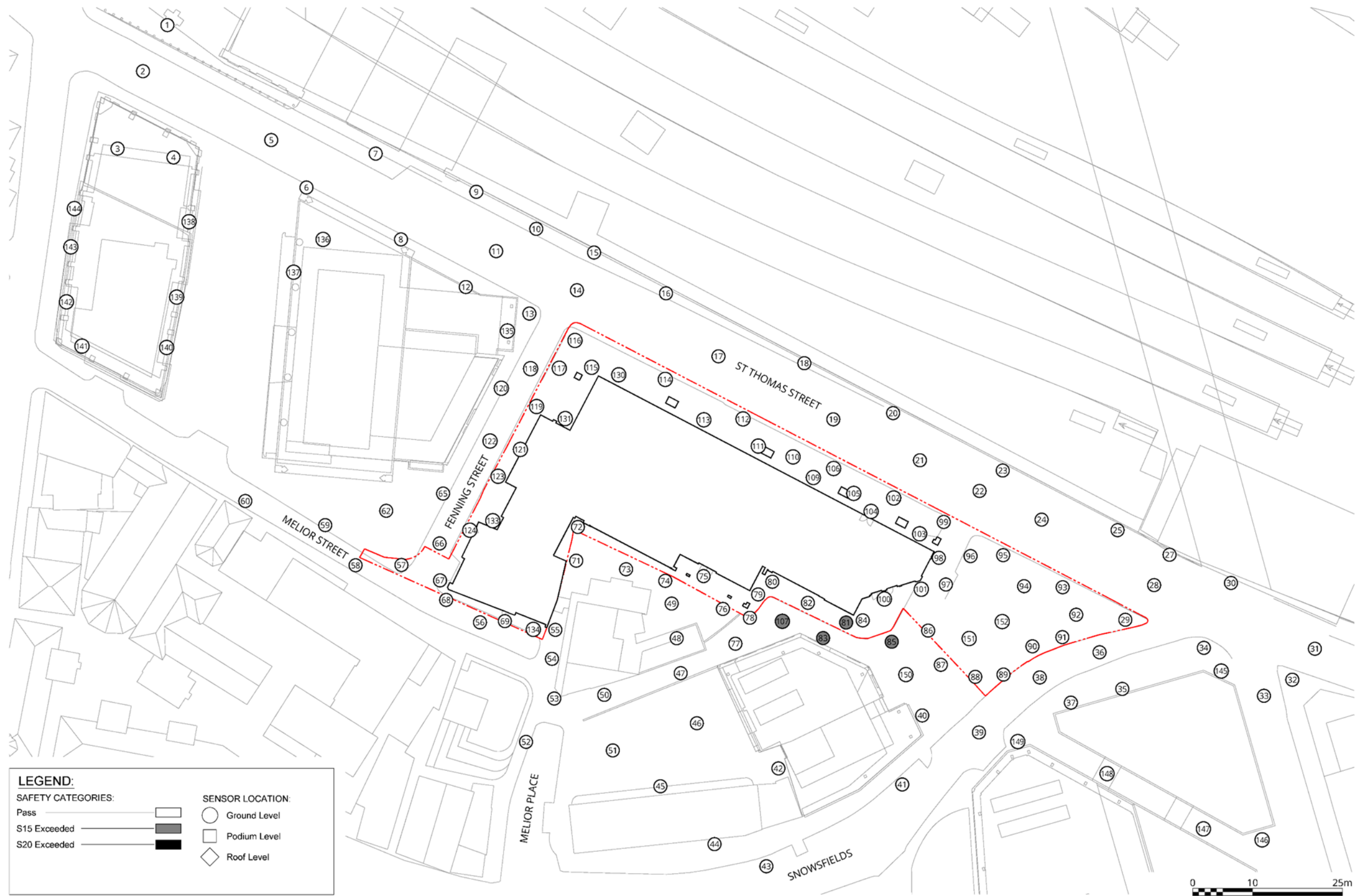
²⁴ NOTE: Proposed Development, December 2020 scheme

Figure 10.27 Configuration 5: Proposed Development²⁵ with Cumulative Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Upper Levels: Summer Season



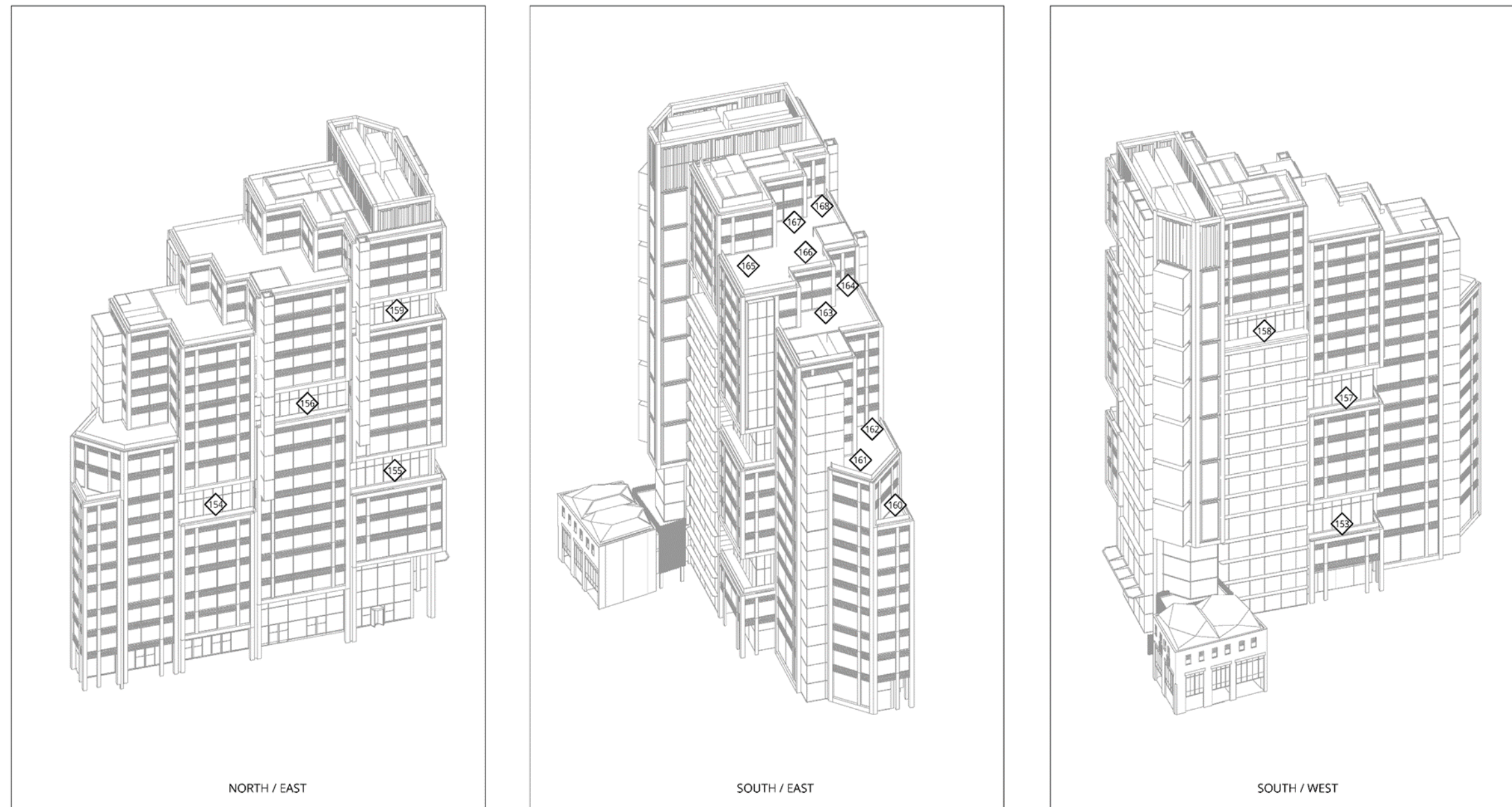
²⁵ NOTE: Proposed Development, December 2020 scheme

Figure 10.28 Configuration 5: Proposed Development²⁶ with Cumulative Surrounding Buildings, Capital House, The Edge, and Sellar Scheme Landscaping – Ground Level: Wind Safety Conditions



²⁶ NOTE: Proposed Development, December 2020 scheme

Figure 10.29 Configuration 5: Proposed Development²⁷ with Cumulative Surrounding Buildings, Capital House, The Edge, and Sellar Scheme – Upper Levels: Wind Safety Conditions



LEGEND:

SAFETY CATEGORIES:		SENSOR LOCATION:	
Pass		○ Ground Level	
S15 Exceeded		□ Podium Level	
S20 Exceeded		◇ Roof Level	



²⁷ NOTE: Proposed Development, December 2020 scheme

COMPARISON OF EFFECTS

- 10.193** **Table 10.4** presents the residual effects of the 2018 Proposed Development to allow for a comparison with the residual effects of the December 2020 scheme²⁸ (**Table 10.3**).
- 10.194** During the demolition and construction works, the effects remain consistent for the 2018 and December 2020 scheme. The wind microclimate effects are negligible and not significant.
- 10.195** For the completed development, in relation to on site thoroughfares, the wind assessment for the 2018 Proposed Development identified effects that were negligible and not significant. The December 2020 scheme generates wind effects along on site thoroughfares that range from negligible to moderate beneficial; the effects are not significant.
- 10.196** For the completed development, in relation to on site entrances, the wind assessment for the 2018 Proposed Development identified effects that were negligible to minor beneficial (significant for minor beneficial effects). The December 2020 scheme generates wind effects at on site entrance locations that are minor beneficial; the effects are not significant (note that since the 2018 ES was prepared, RWDI have altered their significance criteria and beneficial effects are no longer considered to be significant effects).
- 10.197** For the completed development, in relation to on site upper level amenity spaces (terraces), the wind assessment for the 2018 Proposed Development identified effects that were negligible and not significant. The December 2020 scheme generates wind effects at terraces that are also negligible and not significant.
- 10.198** For the completed development, in relation to off site locations (thoroughfares, entrances, ground floor amenity and roadways), the wind assessment for the 2018 Proposed Development identified effects that were negligible and not significant at all locations tested. The December 2020 scheme generates wind effects at thoroughfares, entrances, ground floor amenity and roadways that are also negligible and not significant, but also identifies negligible effects at crossings. The wind assessment for the 2018 Proposed Development identified moderate beneficial to minor beneficial (significant) effects at crossings. As negligible effects equate to meeting conditions for the target end use it is still considered that off site crossings for the December 2020 scheme will experience acceptable wind conditions.).
- 10.199** The 2018 and 2020 wind microclimate cumulative effects assessments are not comparable due to the wind tunnel configurations being altered to address the emerging surrounding site context – in particular the schemes along St Thomas Street. The 2020 wind microclimate cumulative effects assessment has accounted for Melior Place and Guinness Court redevelopments (in addition to Capital House, The Edge, and the Sellar Scheme). The wind mitigation strategy for the December 2020 scheme has taken account of the Capital House, Edge and Sellar schemes. The addition of Melior Place and Guinness Court do not alter materially the wind tunnel results (or the defined mitigation strategy) due to the distance from the site of the cumulative surrounding buildings. No additional cumulative adverse or significant effects on the wind microclimate at and surrounding the Proposed Development are identified.
- 10.200** Upon review of the October 2021 scheme and taking into account the changes to the cumulative schemes, it is considered that the Proposed Development would not be materially affected and therefore the results of the 2020 cumulative effects assessment remains valid in light of these changes.

Table 10.4 Residual Effects – 2018 Proposed Development

Receptor (Season)	Residual Effect (Nature and Scale)	Effect Significance	Geo	D I	P T	R IR	St Mt Lt
Demolition and Construction							
Thoroughfares	Negligible	Not Significant	L	D	T	IR	Lt
Completed Development							
On-site							
Thoroughfares (Windiest)	Negligible	Not Significant	L	D	P	IR	Lt
Entrances (Windiest)	Negligible to Minor Beneficial	Significant (for Minor Beneficial)	L	D	P	IR	Lt
Ground Floor Amenity (Market Space) (Summer)	Negligible	Not Significant	L	D	P	IR	Lt
Root Terrace Amenity (Summer)	Negligible	Not Significant	L	D	P	IR	Lt
Roadway	Moderate Beneficial	Significant	L	D	P	IR	Lt
Off-Site							
Thoroughfares (Windiest)	Negligible	Not Significant	L	D	P	IR	Lt
Entrances (Windiest)	Negligible	Not Significant	L	D	P	IR	Lt
Ground Floor Amenity (Summer)	Negligible	Not Significant	L	D	P	IR	Lt
Crossings	Moderate Beneficial to Minor Beneficial	Significant	L	D	P	IR	Lt
Roadway	Negligible	Not Significant	L	D	P	IR	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							
N/A = not applicable / not assessed							

²⁸ Although the residual effects presented within Table 10.3 are specific to the December 2020 scheme, they are also considered to be reflective of the revised October 2021 scheme.

ANNEX A

LBS Review

Summary of Matter Raised in Scoping Opinion	Reference in the ES Chapter / Application Documentation
<p>Paragraph 1.61 The scope of EIA work is suitable for the proposed development; however the applicant has not stated the radius of surrounding infrastructure that is intended to be modelled. The radius from the centre of the development should be dependent on the development size and the type of surrounding infrastructure, however a 300m radius would be desirable.</p>	<p>The development and context are to be modelled at 1:300 scale, on a 1.2m radius model – Providing a 360m radius of real-world inclusion of infrastructure surrounding the site.</p>
<p>Paragraph 1.63 Mitigation will be specified. If required, the applicant has also stated that mitigation measures may be tested again in a wind tunnel environment. In the case of strong winds, this is recommended.</p>	<p>Noted.</p>

ANNEX B

