

Figure 10.16 Configuration 3: Proposed Development with Existing Surrounding Buildings and Landscaping Scheme – Ground Level – Summer Season

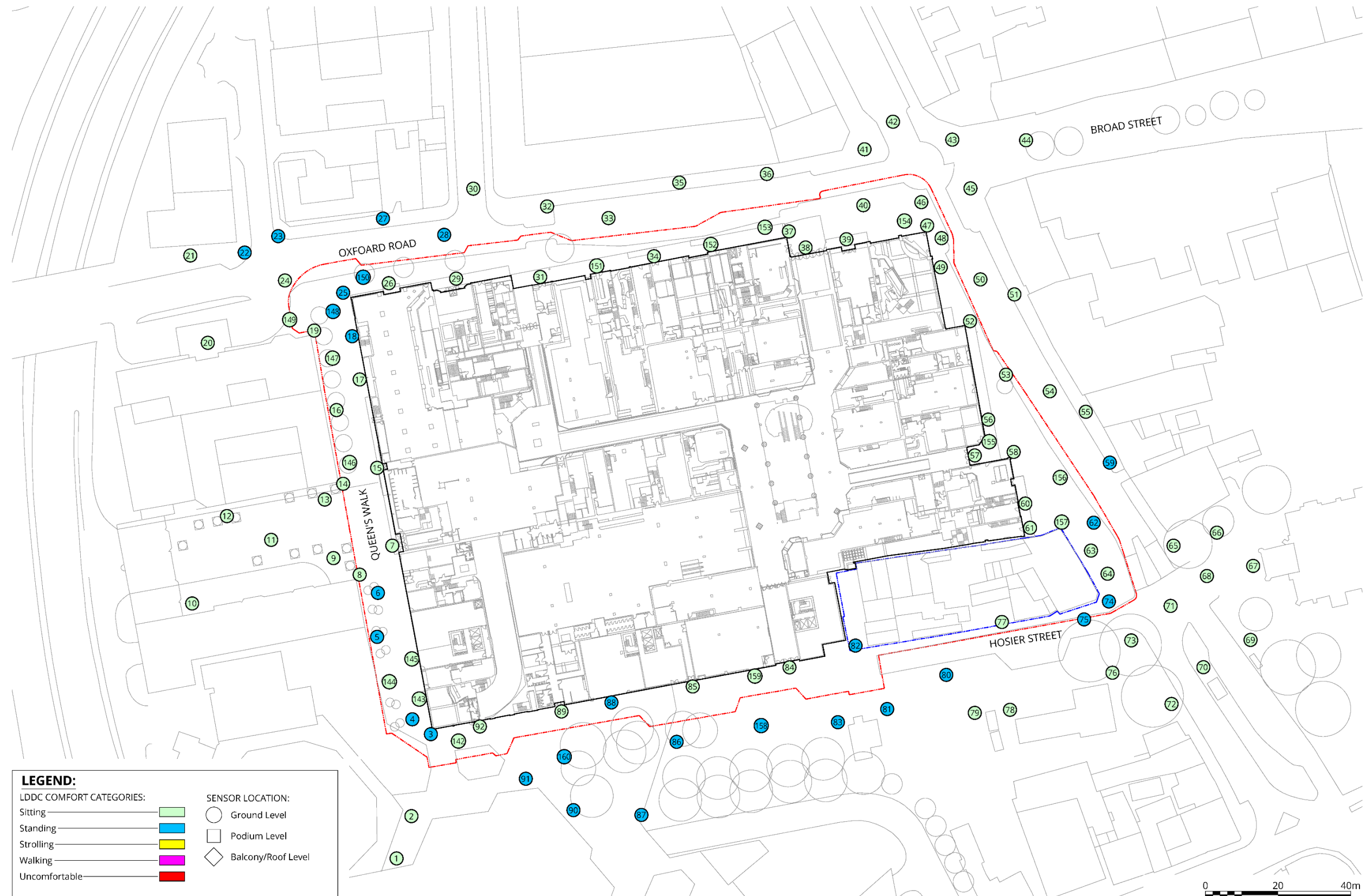


Figure 10.18 Configuration 3: Proposed Development with Existing Surrounding Buildings and Landscaping Scheme – Ground Level – Safety

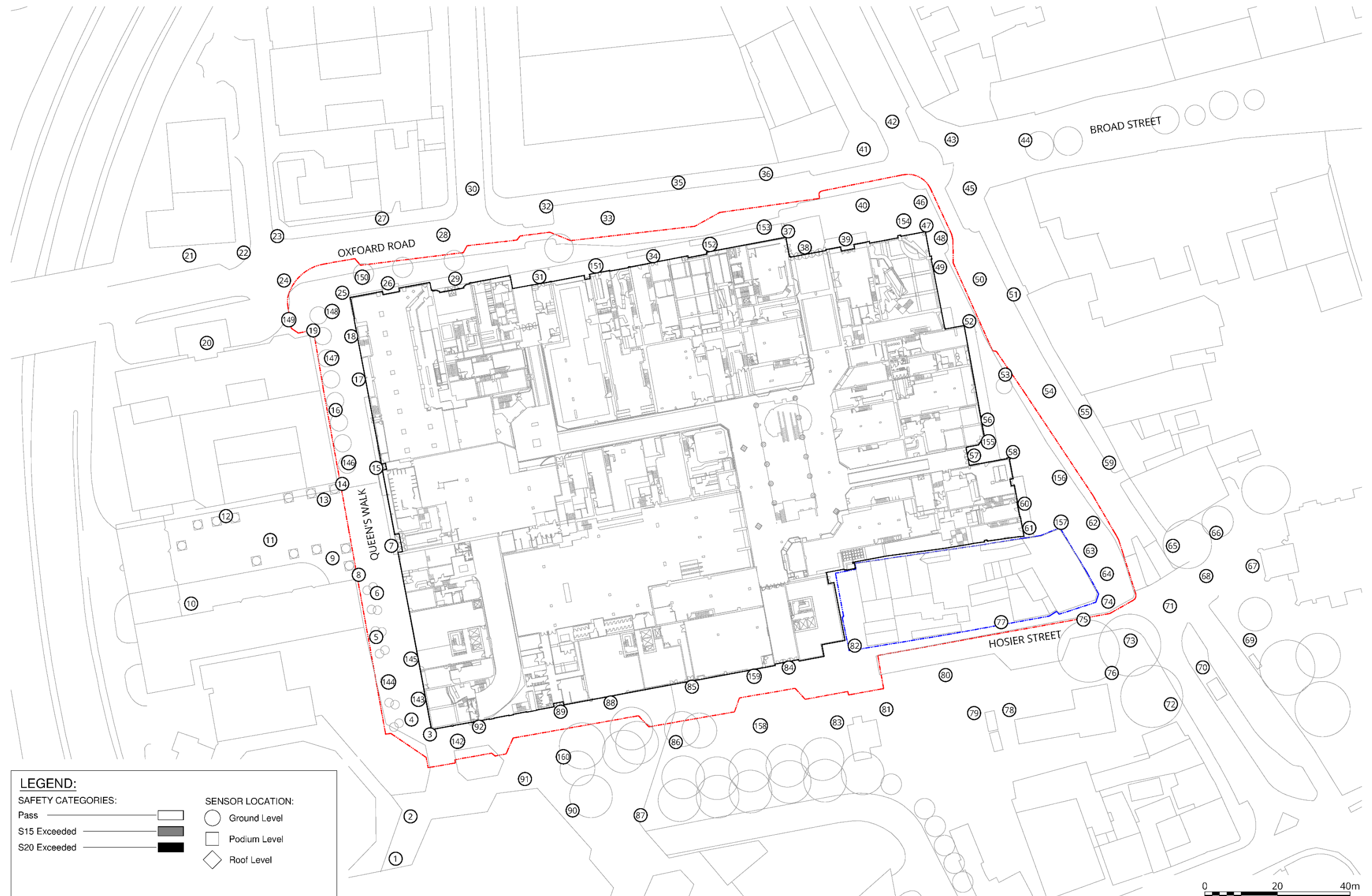
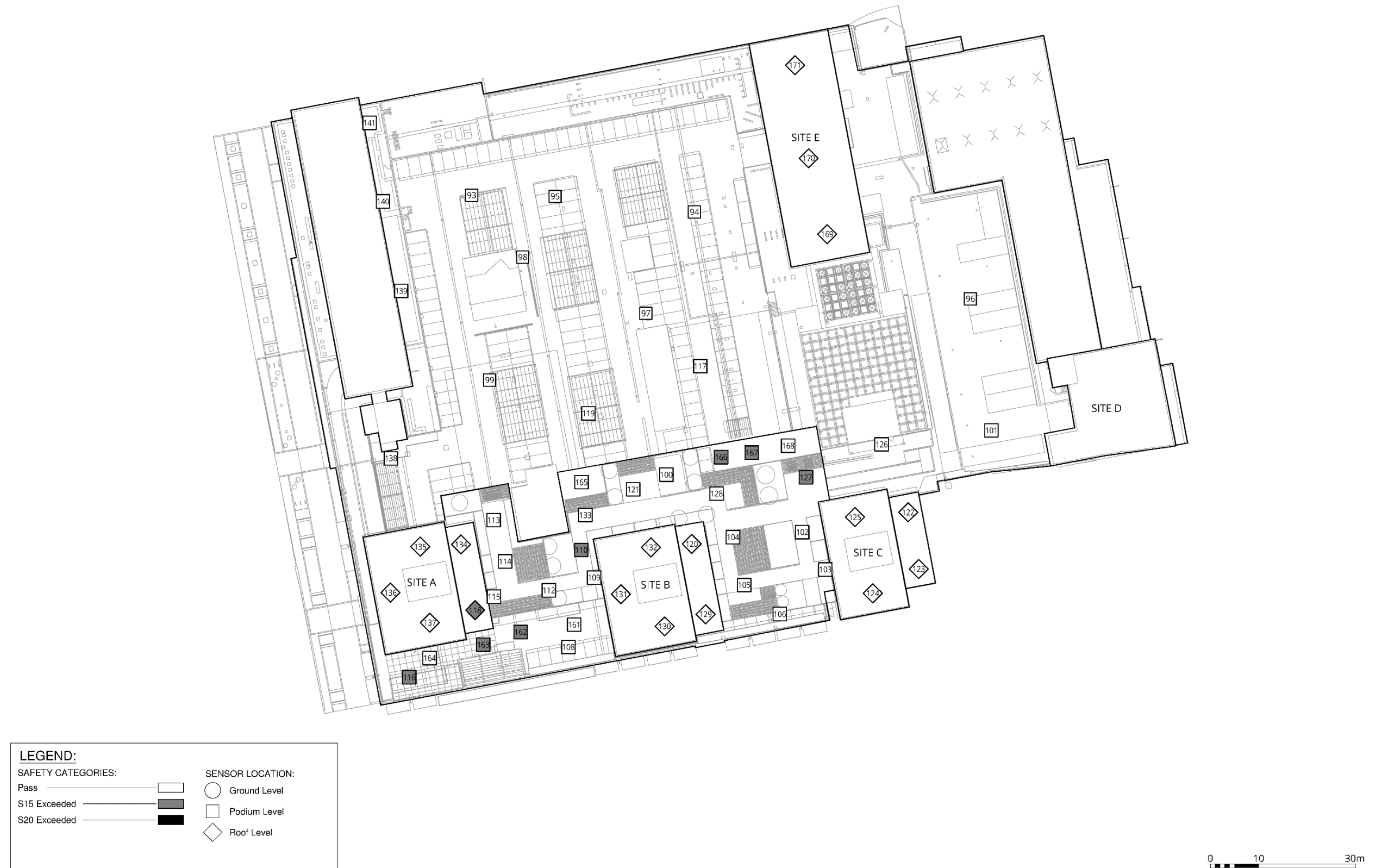


Figure 10.19 Configuration 3: Proposed Development with Existing Surrounding Buildings and Landscaping Scheme – Podium and Roof Levels – Safety



RESIDUAL EFFECTS

10.109 The residual effects resulting from the Proposed Development are summarised in Table 10.5.

Table 10.5 Summary of Residual Effects

Receptor (Season)	Residual Effect (Nature and Scale)	Effect Significance	Geo	D I	P T	R IR	St Mt Lt
Demolition and Construction							
Demolition Site	Negligible	Not Significant	L	D	T	IR	LT
Completed Development							
On-Site							
Thoroughfares (Windiest)	Negligible to Moderate Beneficial	Not Significant	L	D	P	IR	LT
Entrances (Windiest)	Negligible to Minor Beneficial	Not Significant	L	D	P	IR	LT
Ground Level Amenity (Summer)	Negligible	Not Significant	L	D	P		LT
Podium and Roof Amenity Levels (Summer)	Negligible	Significant	L	D	P	IR	LT
Podium and Roof Amenity Levels (Summer) (Locations: 110, 127, 162, 163, and 166)	Moderate Adverse	Significant	L	D	P	IR	LT
Strong Winds (Locations: 110, 116, 118, 127, 162, 163, 166, and 167)	Adverse	Significant	L	D	P	IR	LT
Off-Site							
Thoroughfares (Windiest)	Negligible	Not Significant	L	D	P	IR	LT
Road (Windiest)	Negligible	Not Significant	L	D	P	IR	LT
Entrances (Windiest)	Negligible	Not Significant	L	D	P	IR	LT
Ground Level Amenity (Summer)	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 I, National (N) D = Direct / I = Indirect P = Permanent / T = Temporary R = Reversible / IR= Irreversible St = Short Term / Mt = Medium Term / Lt = Long Term N/A = not applicable / not assessed							

LIKELY SIGNIFICANT EFFECTS

10.110 With the inclusion of the proposed landscaping scheme wind conditions at and surrounding the Proposed Development at ground level would be generally suitable for the intended pedestrian use, and all the residual effects are not significant.

10.111 However, further wind mitigation measures would be required at podium level (measurement locations 110, 127, 162, 163, 166, and 167), car park location 116, and Building A roof terrace location 118

10.112 A wind mitigation strategy is therefore required to provide safe and comfortable wind conditions at and surrounding the Proposed Development in both the context of the existing and cumulative surrounding buildings. The effectiveness of this mitigation strategy will need to be verified through further wind tunnel tests.

CLIMATE CHANGE

10.113 The “Climate Projects Report” published by UKCP18 presents the probable changes in wind speeds for the 2070-2099 (timeframe considered most relevant for urban regeneration projects) in both the summer and winter seasons.

10.114 With these predictions, the current trends in the climate change are not likely to have any significant effects on the predicted wind microclimate conditions in and around the Proposed Development.

ASSESSMENT OF FUTURE ENVIRONMENT

Evolution of the Baseline Scenario

10.115 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 (Configuration 1). This assumes that generally the wind microclimate conditions (as defined by metrological data) for Reading and the south-east of England remain as presented within this assessment.

10.116 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 surrounding cumulative developments (Configuration 4). Should the Proposed Development not come forward, the wind conditions, in combination with the cumulative developments, show that the site and surrounding area will have conditions suitable for their intended use as the cumulative schemes would not significantly change the wind conditions at and surrounding the site.

Cumulative Effects Assessment

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

10.118 A cumulative assessment scenario (Configuration 4) was tested (wind tunnel test, see section ‘*Assessment Methodology*’) in order to predict the wind conditions within the site and surrounding area in the presence of the surrounding cumulative developments. The future developments considered in the cumulative assessment comprise:

- Chatham Street (Application Reference: 170326);
- 20 Hosier Street (Application Reference: 182054);
- 52 – 55 Friar Street (Application Reference: 162210);
- Plot E & Telecom House Land Friar Street/ Garrard Street Station Hill (Application Reference: 151426); and
- Station Hill (Application Reference: 151427).

Minster Quarter Area Development Framework

10.119 The Minster Quarter development will be located to the south and southwest of the Broad Street Mall site and consists of buildings ranging in height from approximately 6 to 20 storeys. The Minster Quarter Development will be in line with prevailing winds (from the south west) that approach the site for the majority of the time throughout the year, additionally the development has the potential to introduce new landscaping to the area. The development can therefore potentially provide some blockage and shelter to winds accessing the Broad Street Mall site and along Queen’s Walk and Hosier Street and therefore could be beneficial to the wind conditions in the area.

Demolition and Construction

- 10.120** The cumulative schemes are not considered to have a material impact on the majority of areas around the site but there is the potential for the south east corner of site to get windier and these changes could be significant.
- 10.121** 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 4: Proposed Development with Cumulative Surrounding Buildings

- 10.122** The discussion of wind conditions in Configuration 4 are based on the results presented in Figures 10.20 and 10.21 for the windiest season, while Figures 10.22 and 10.23 refer to the wind conditions during the summer season. Figures 10.24 and 10.25 show the strong wind exceedances respectively at ground and upper levels.
- 10.123** Configuration 4 included the Proposed Development in the context of the cumulative surrounding buildings without the proposed landscaping scheme in place.

Pedestrian Comfort

- 10.124** Wind conditions at the Proposed Development would be suitable for 'sitting' use to 'strolling' use during the windiest season (Figures 10.20 and 10.21).
- 10.125** During the summer season, wind conditions would be suitable for 'standing' use or calmer (Figures 10.22 and 10.23).

Thoroughfares

On-site

- 10.126** Wind conditions at all thoroughfare locations would be similar to Configurations 2, ranging from 'sitting' use to 'strolling' use (target conditions) during the windiest season (Figure 10.20). This represents a **moderate beneficial** (not significant) (particularly along Oxford Road and St. Mary's Butts) to **negligible** (not significant) effect.

Off-site

- 10.127** All off-site thoroughfare locations would have wind conditions ranging from 'sitting' use to 'strolling' use (target conditions) during the windiest season (Figure 10.20). This represents **negligible** (not significant) effect.

Road

Off-site

- 10.128** Off-site road locations would have wind conditions suitable for 'strolling' use or calmer during the windiest season, representing a **negligible** (not significant) effect (Figure 10.20).

Entrances

On-site

- 10.129** The majority of the on-site entrance locations would have 'standing' use (target conditions) or calmer wind conditions during the windiest season, representing a **minor beneficial** (not significant) to **negligible** (not significant) effect (Figures 10.20 and 10.21). Entrance location 109 (Building B) at podium level would have 'strolling' use wind conditions during the windiest season, representing a **minor adverse** (significant) effect (Figure 10.21). Wind mitigation measures would be required at this location.

Off-site

- 10.130** All the off-site entrances would have the required 'standing' use (target conditions) or calmer wind conditions during the windiest season, representing a **negligible** (not significant) effect.

Bus Stops

- 10.131** All bus stop locations would have 'standing' use (target conditions) or calmer use wind conditions during the windiest season (Figure 10.20), representing a **negligible** (not significant) effect.

Car park

- 10.132** All car park locations would have 'strolling' use or calmer use wind conditions during the windiest season (Figure 10.20), representing a **negligible** (not significant) effect.

Ground Level Amenity Areas

On-site

- 10.133** Wind conditions at ground floor amenity spaces would have wind conditions ranging from 'sitting' use (target conditions) to 'standing' use during the summer season (Figure 10.22). These wind conditions are considered acceptable at large amenity areas, and no additional mitigation is required. This represents a **negligible** (not significant) effect.

Off-site

- 10.134** Wind conditions at Off-Site amenity locations 9, 11, and 12 to the west of Queen's Walk would be suitable for 'sitting' use during the summer season, representing a **negligible** effect (Figure 10.22).

Upper Level Amenity Spaces

- 10.135** Wind conditions at the upper level amenity areas would range from suitable for 'sitting' use (target conditions) to 'strolling' use during the summer season (Figure 10.23). Measurement locations 102, 110, 112, 114, 127, 133, 162, 163, and 166 at podium level would have 'strolling' use wind conditions, representing a **moderate adverse** (significant) effect. Wind mitigation measures would be required at these locations.

Strong Winds

- 10.136** Strong winds exceeding the 15 m/s safety threshold for more than 2.2 hours yearly would occur at ground level at measurement locations 74 and 75, at podium level at measurement locations 102, 110, 112, 114, 127, 133, 162, 163, and 166 and at car park location 116 (Figures 10.24 and 10.25). Wind mitigation measures would be required at these locations, as this represents a safety concern for pedestrians.

Figure 10.20 Configuration 4: Proposed Development with Cumulative Surrounding Buildings – Ground Level – Windiest Season

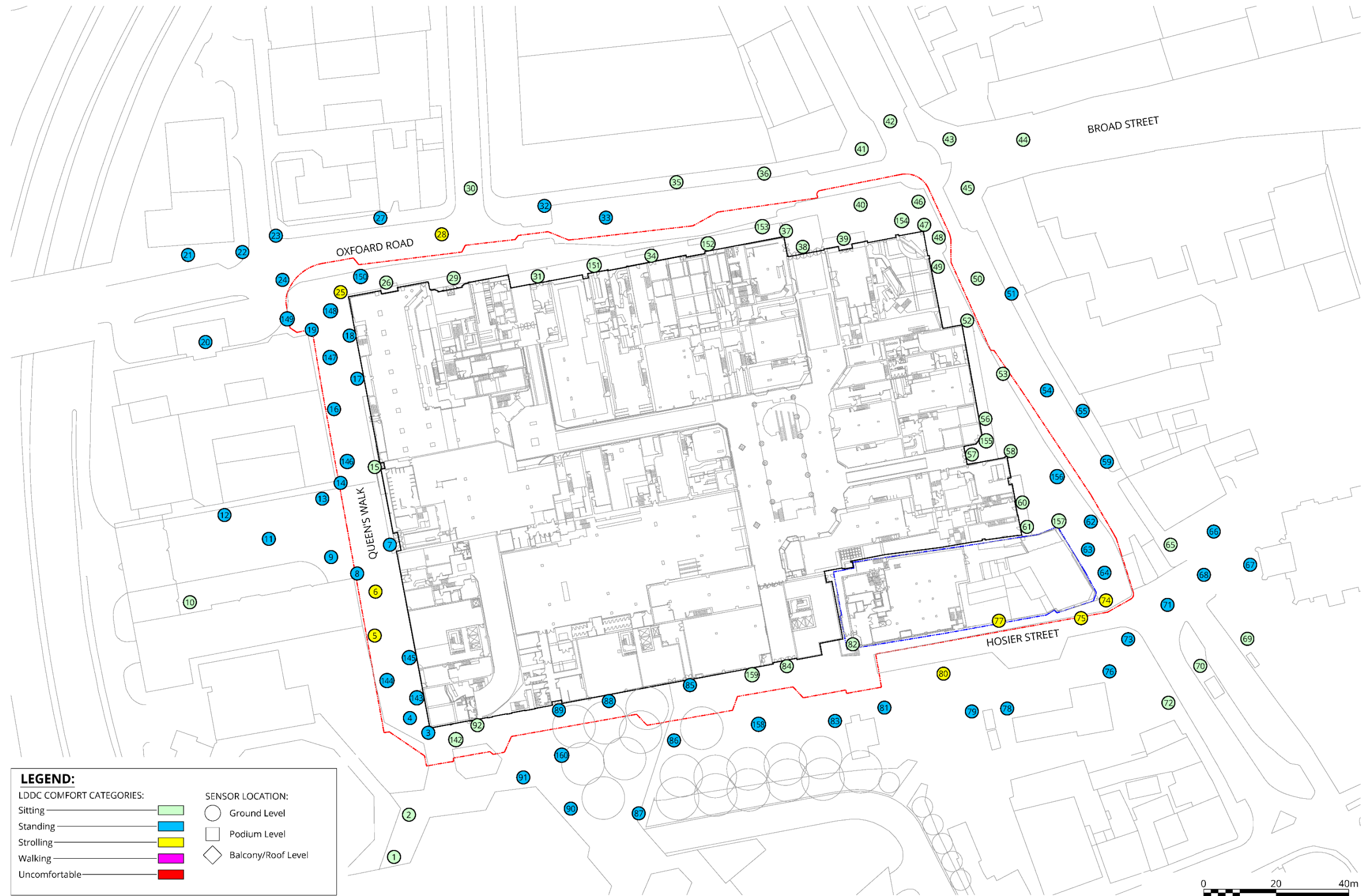


Figure 10.21 Configuration 4: Proposed Development with Cumulative Surrounding Buildings – Podium and Roof Levels – Windiest Season



Figure 10.22 Configuration 4: Proposed Development with Cumulative Surrounding Buildings – Ground Level – Summer Season

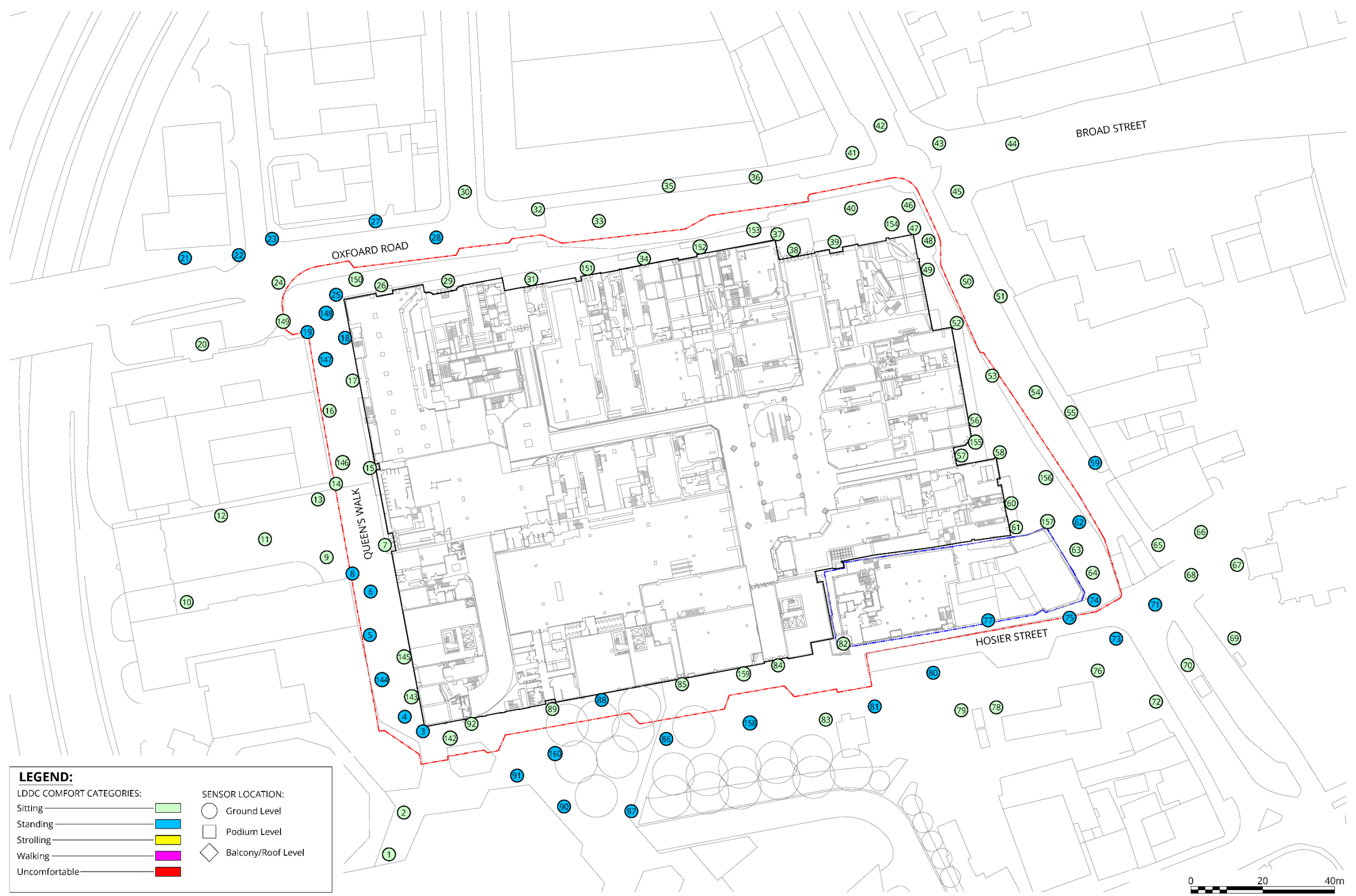


Figure 10.23 Configuration 4: Proposed Development with Cumulative Surrounding Buildings – Podium and Roof Levels – Summer Season



Figure 10.24 Configuration 4: Proposed Development with Cumulative Surrounding Buildings – Ground Level – Safety

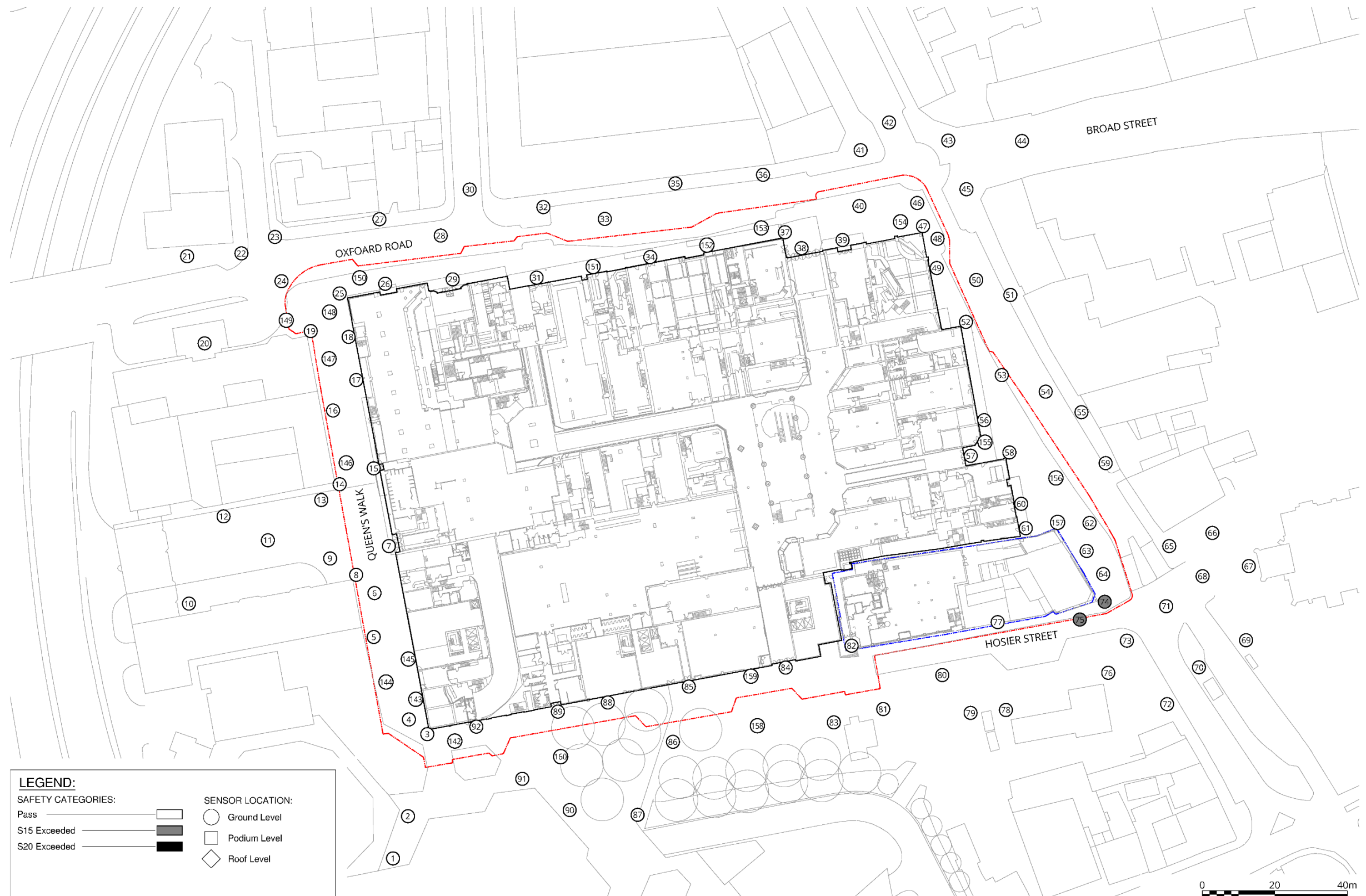


Figure 10.25 Configuration 4: Proposed Development with Cumulative Surrounding Buildings – Podium and Roof Levels – Safety

