

Figure 19.1
Annual Wind Rose (St. Athan Airport, z=10m above ground)

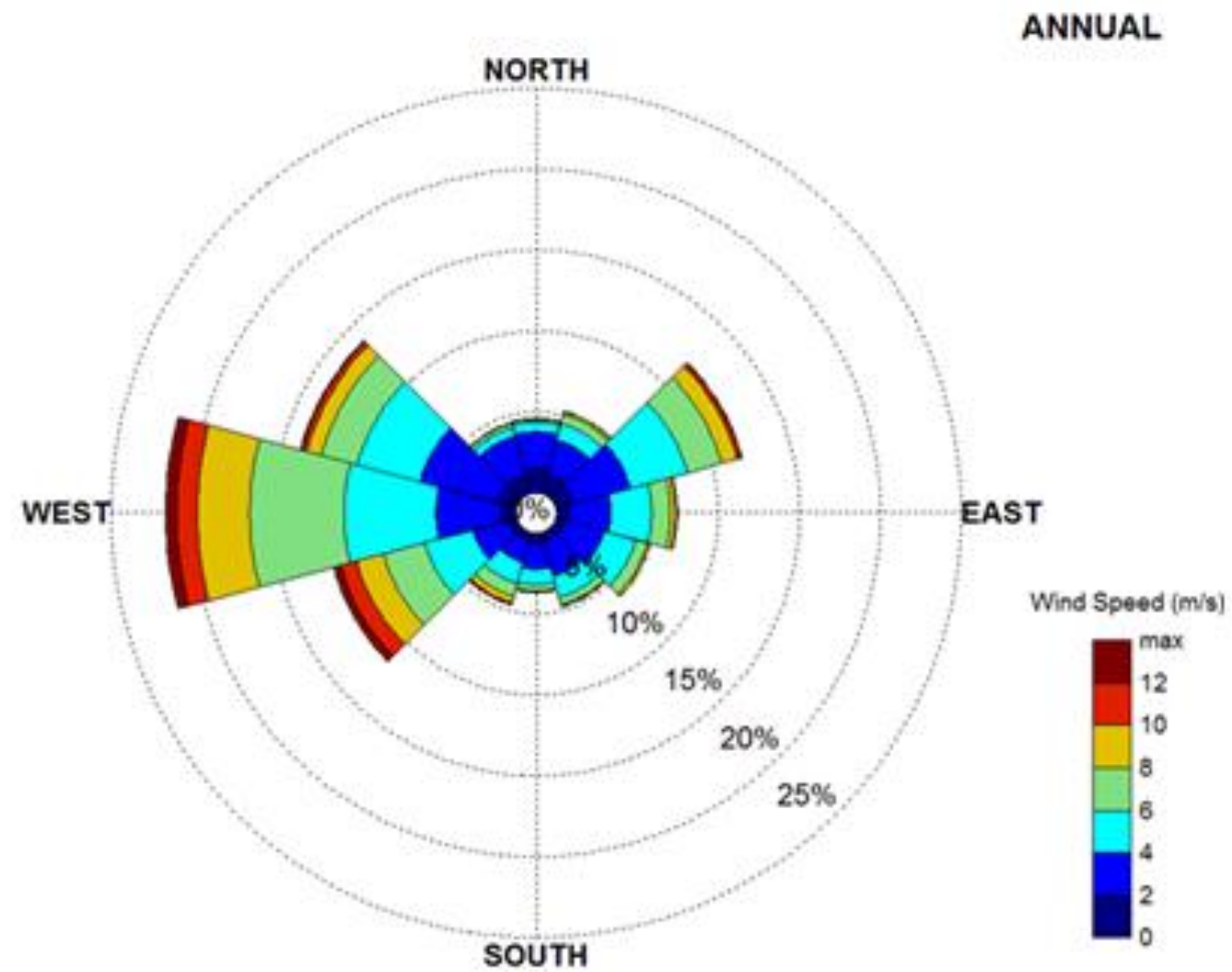


Figure 19.2
Satellite view of the Existing Site (Baseline). View from top

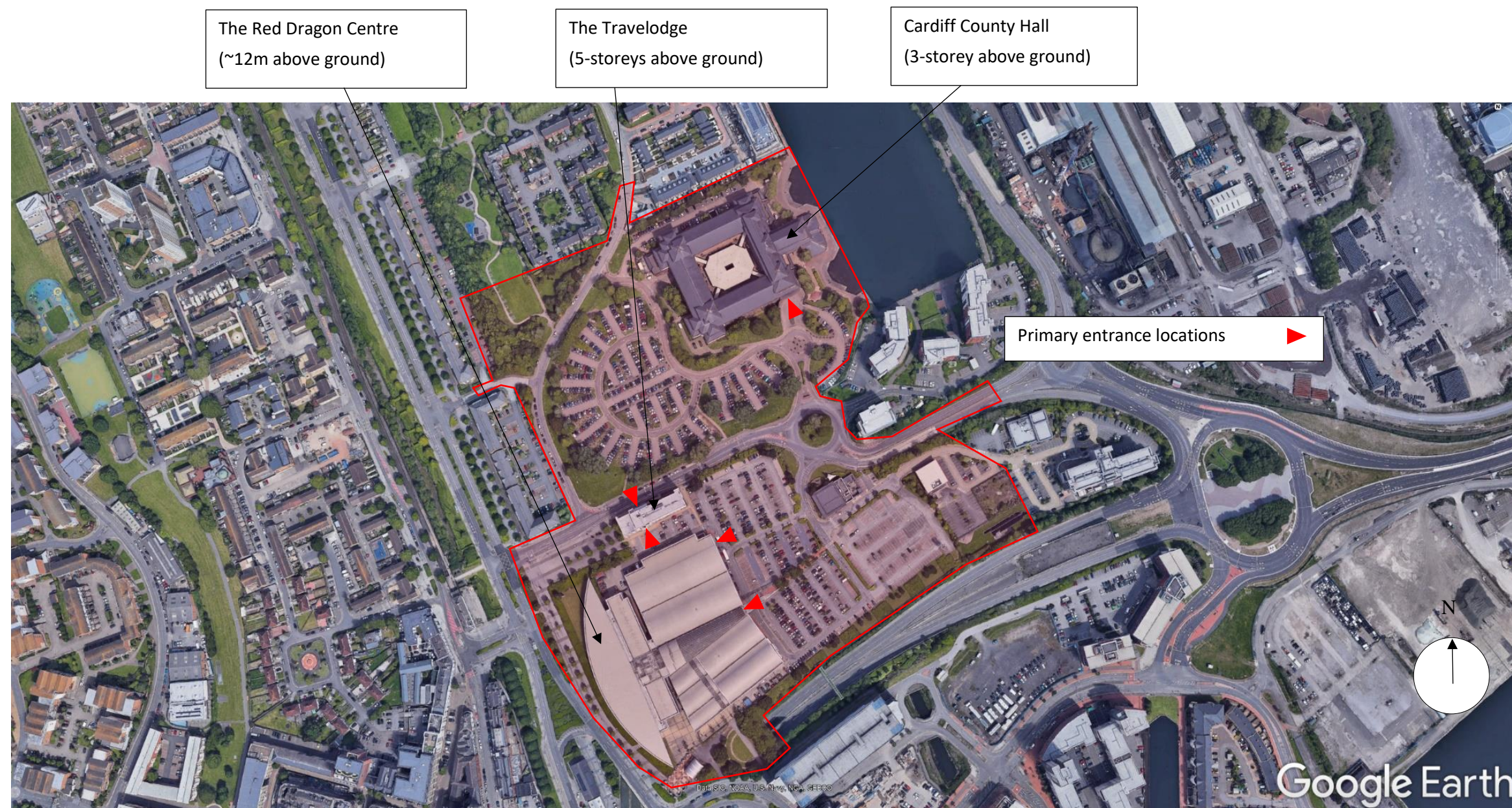


Figure 19.3
Satellite view of the Existing Site (Baseline). View from west

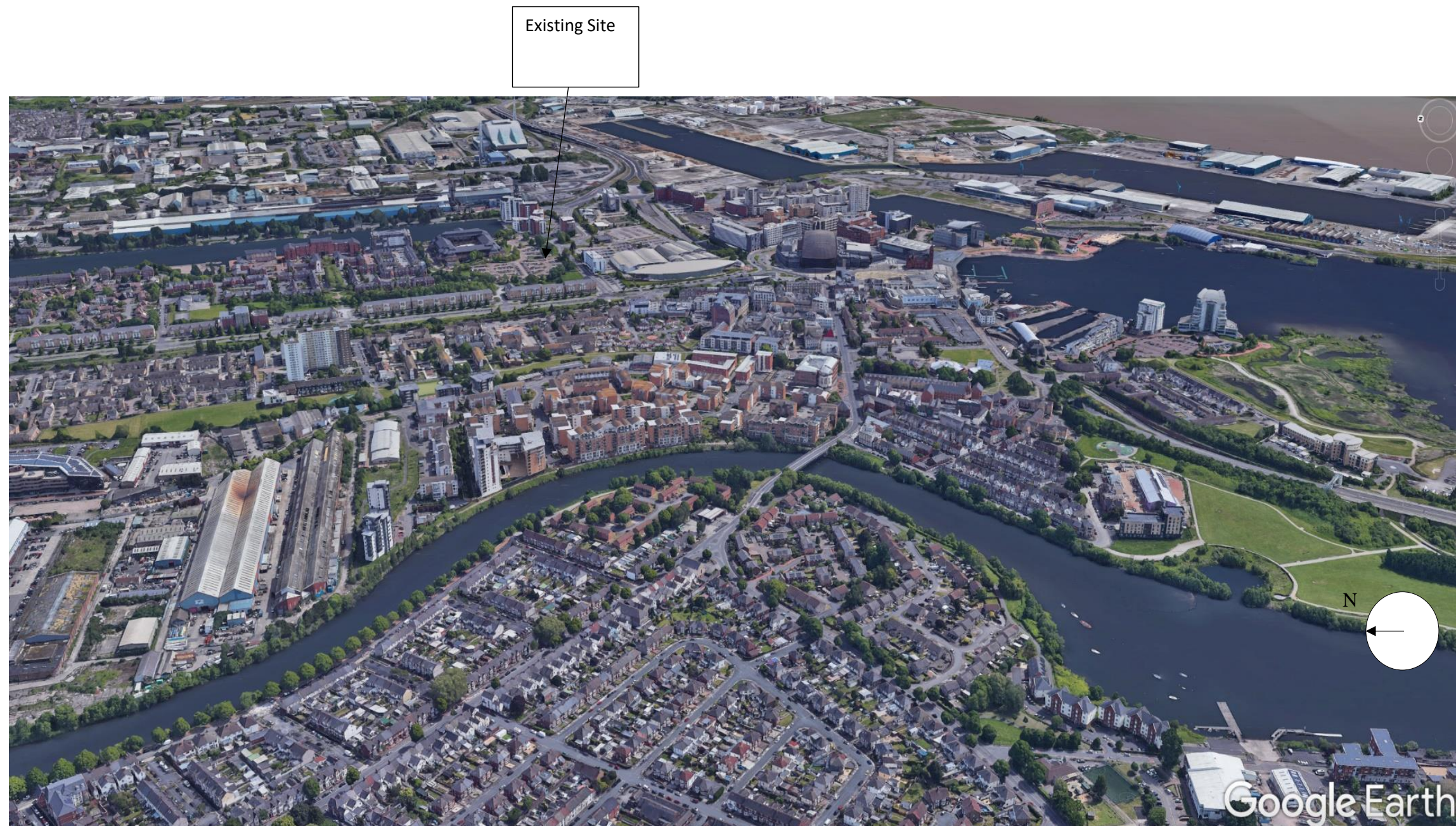


Figure 19.4
3D view of the Proposed Development with indication of maximum parameter plans. View from south

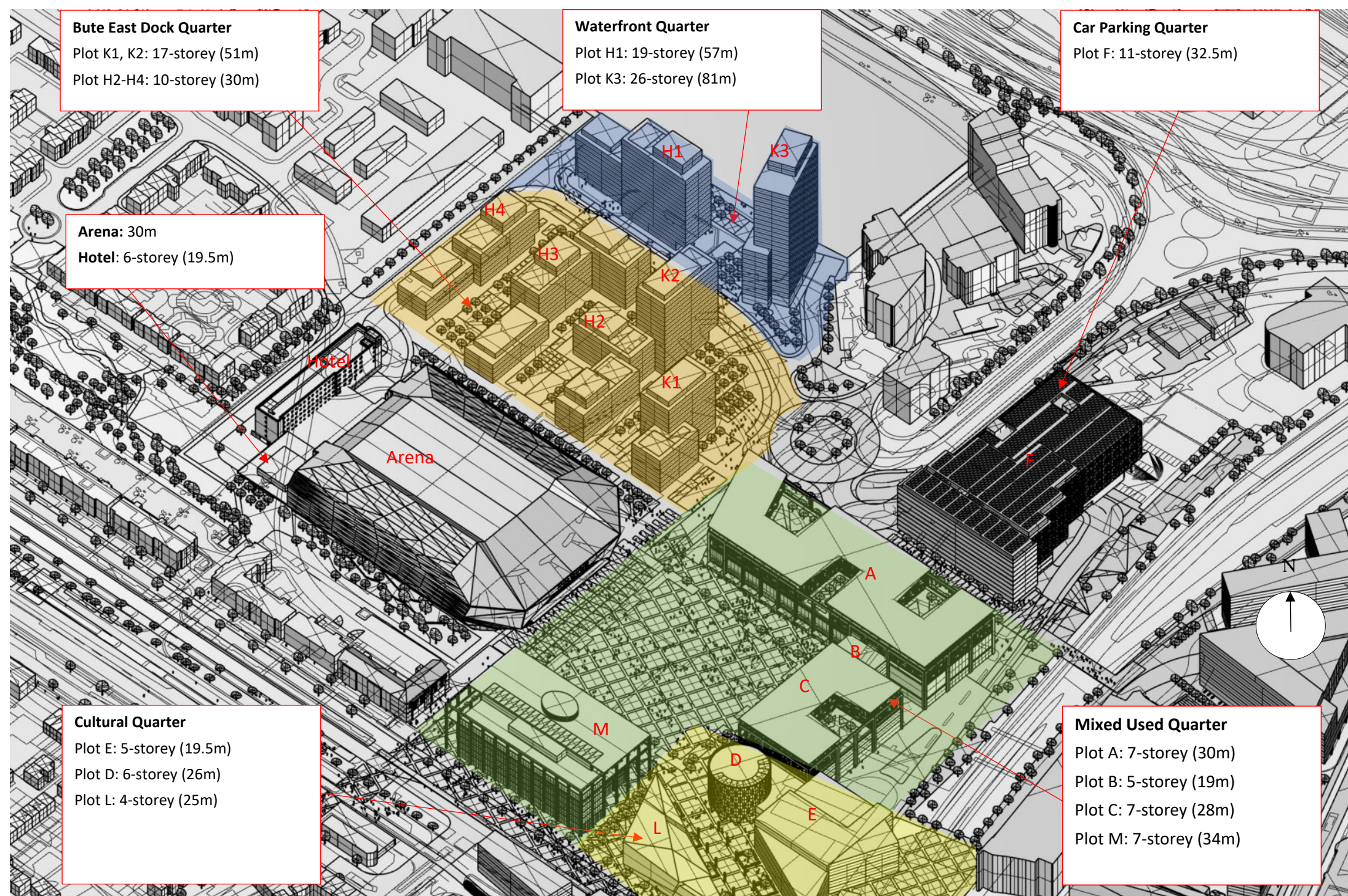


Figure 19.5
3D View of the Arena with indication of key windiness mechanisms

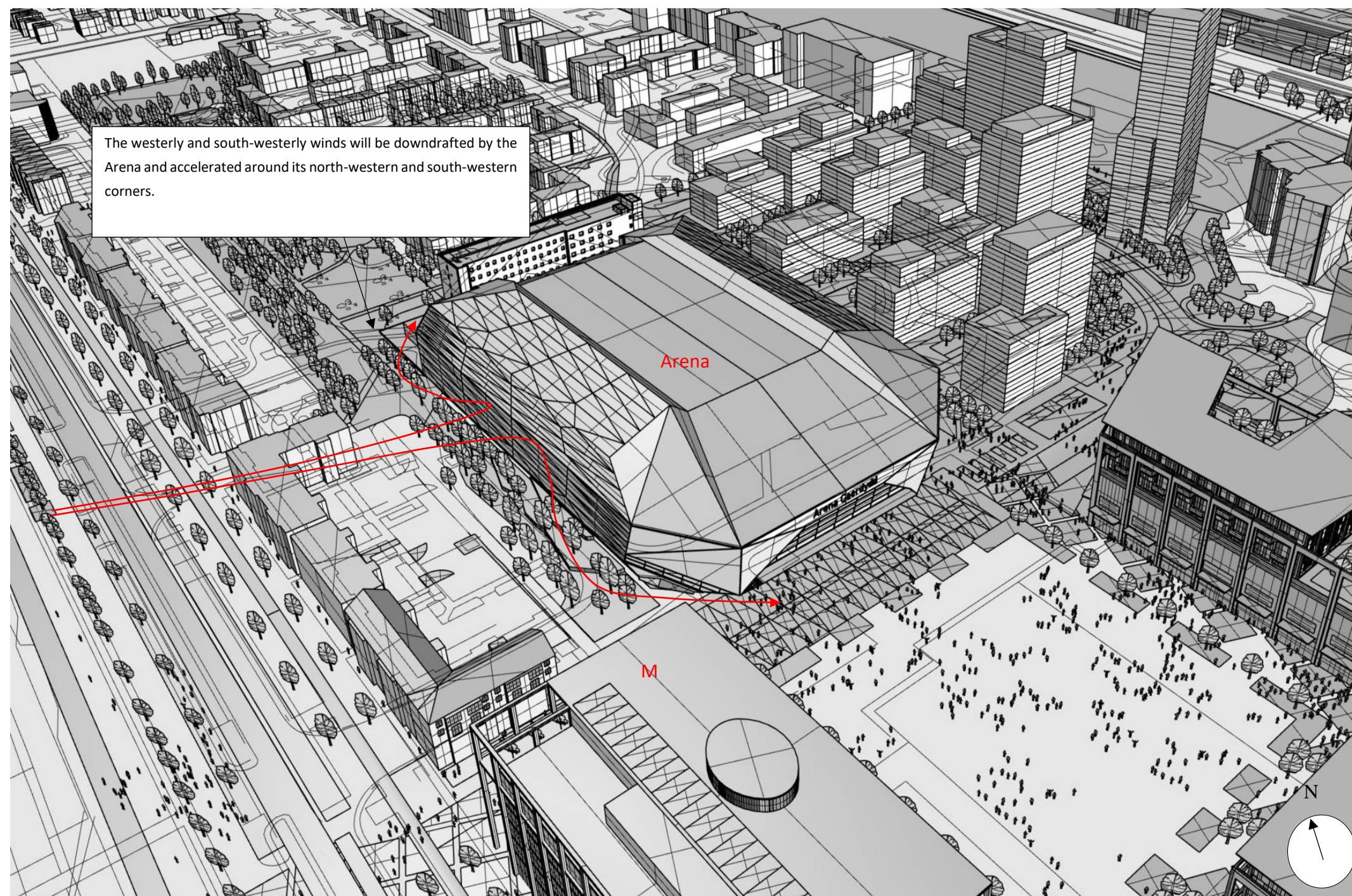


Figure 19.6
Ground floor plan view of the Arena with description of likely windiness levels

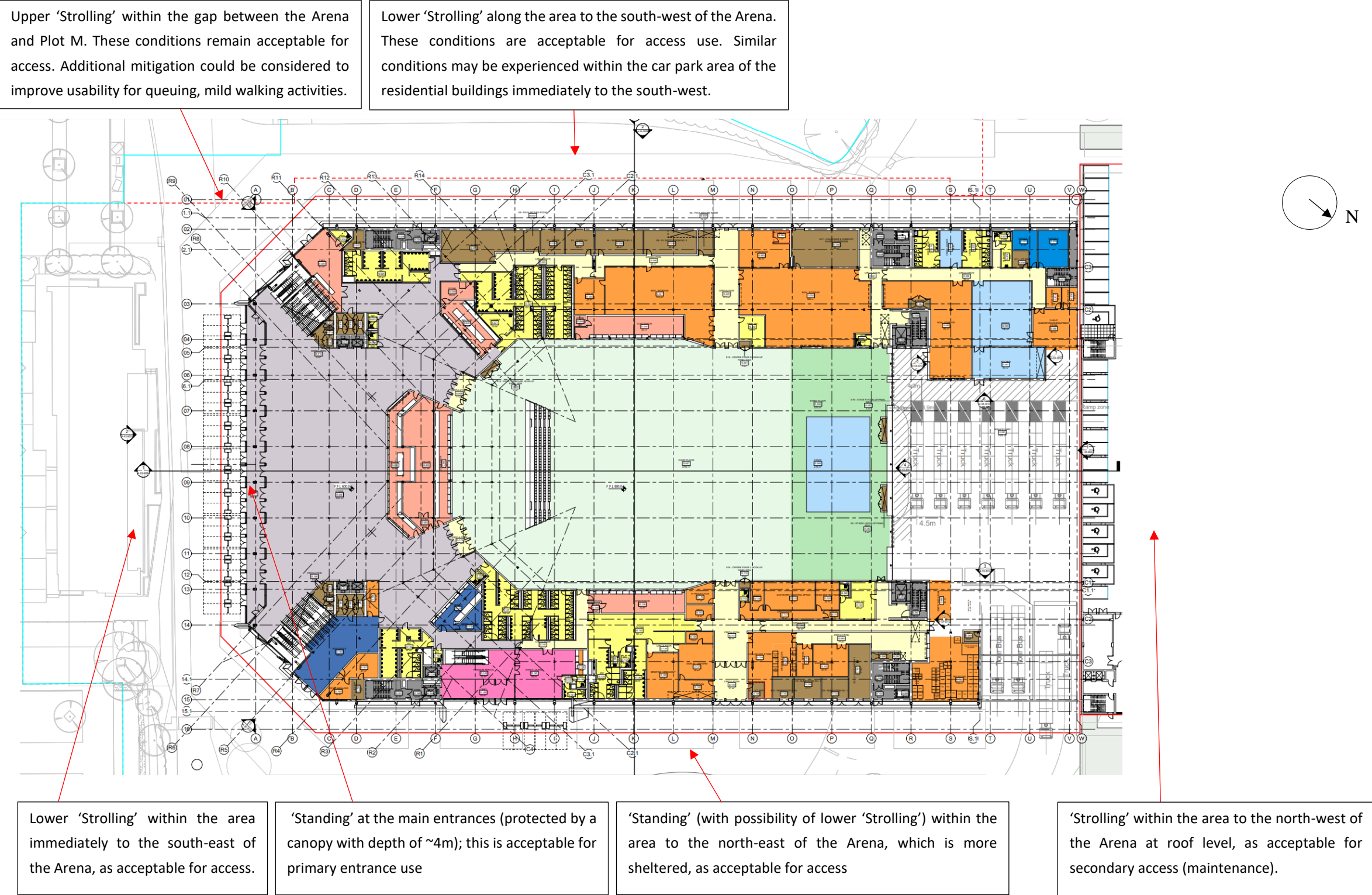
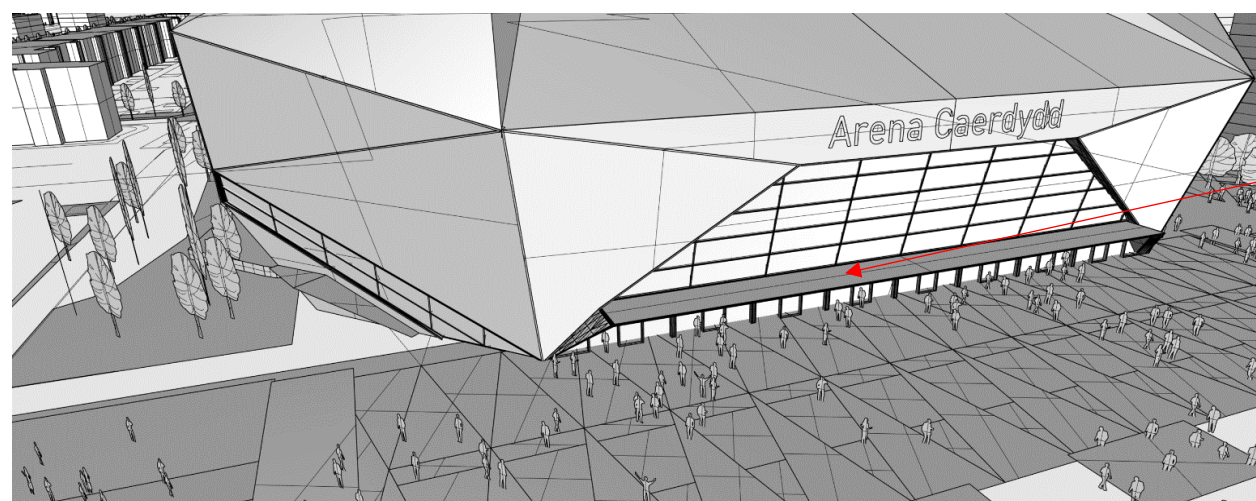


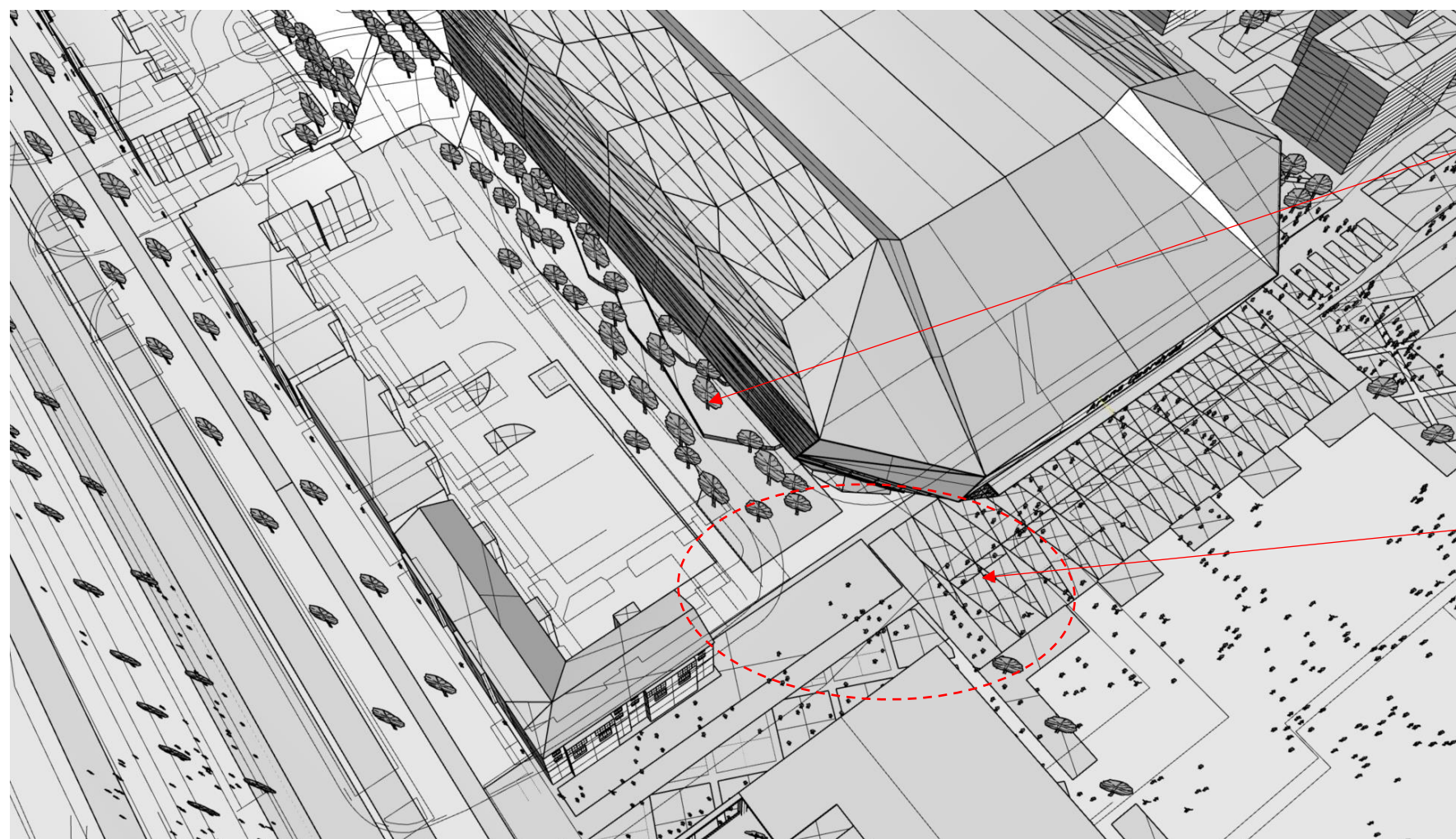
Figure 19.7

Description of likely windiness levels around the Arena and wind mitigation measures



'Standing' are anticipated at the main entrances to the Arena.

The proposed canopy (~ 4m deep) is beneficial to the local windiness.



Lower 'Strolling' is anticipated within the area immediately to the south-west of the Arena in presence of the proposed landscaping consisting of 10m trees; these are beneficial to the local windiness.

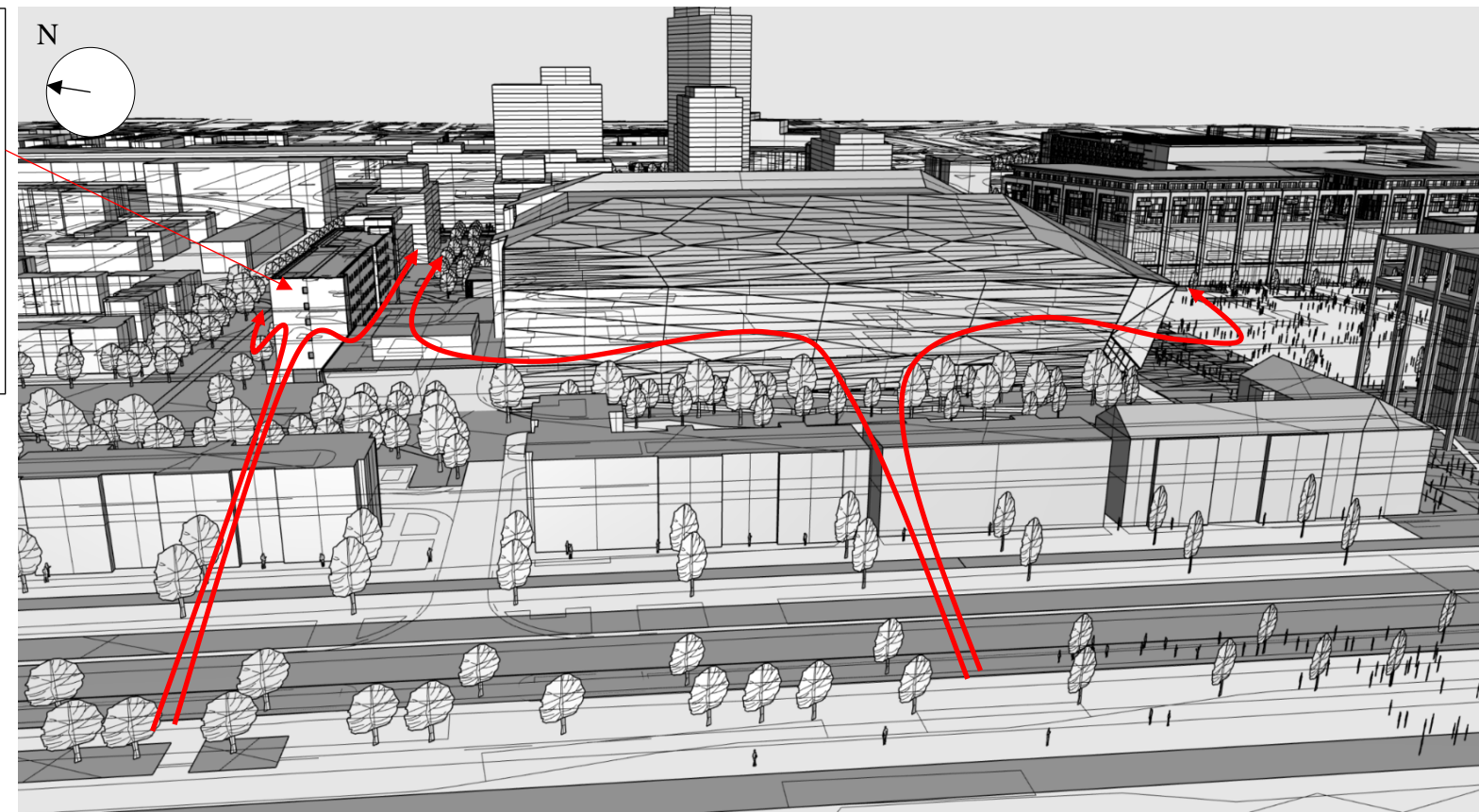
Upper 'Strolling' is anticipated in the passage between the Arena and Plot M, where winds are accelerated.

Additional mitigation could be considered to be added locally to improve the conditions in the gap between Arena and Plot to 'Standing' or lower 'Strolling' levels as required for queuing activities or mild walking.

Figure 19.8
Description of windiness mechanisms around the Hotel

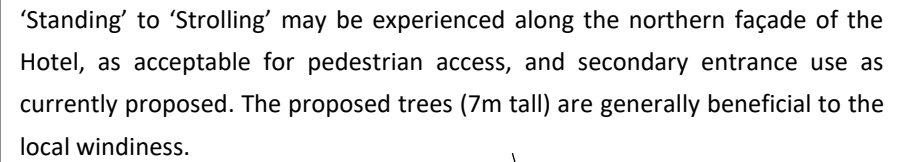
The long axis of the Hotel is orientated parallel to the prevailing winds. This is generally beneficial as it minimises extent of downdraft.

Winds downdrafted by the western façade of the Hotel will be deflected onto the roof immediately to the south of the Hotel (not accessible by the general public), and along the northern façade of the Hotel.



The westerly and south-westerly winds will be downdrafted by the Arena and accelerated around its north-western corner, onto the roof immediately to the south of the Hotel (not accessible by the general public).

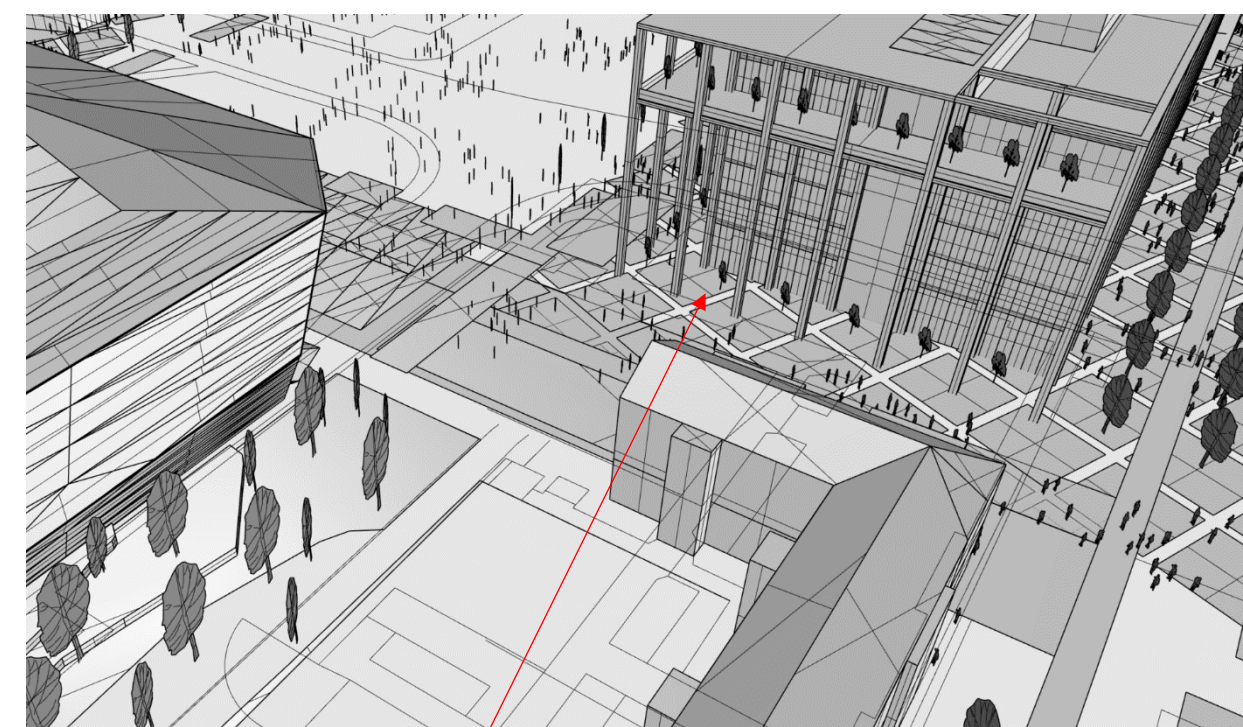
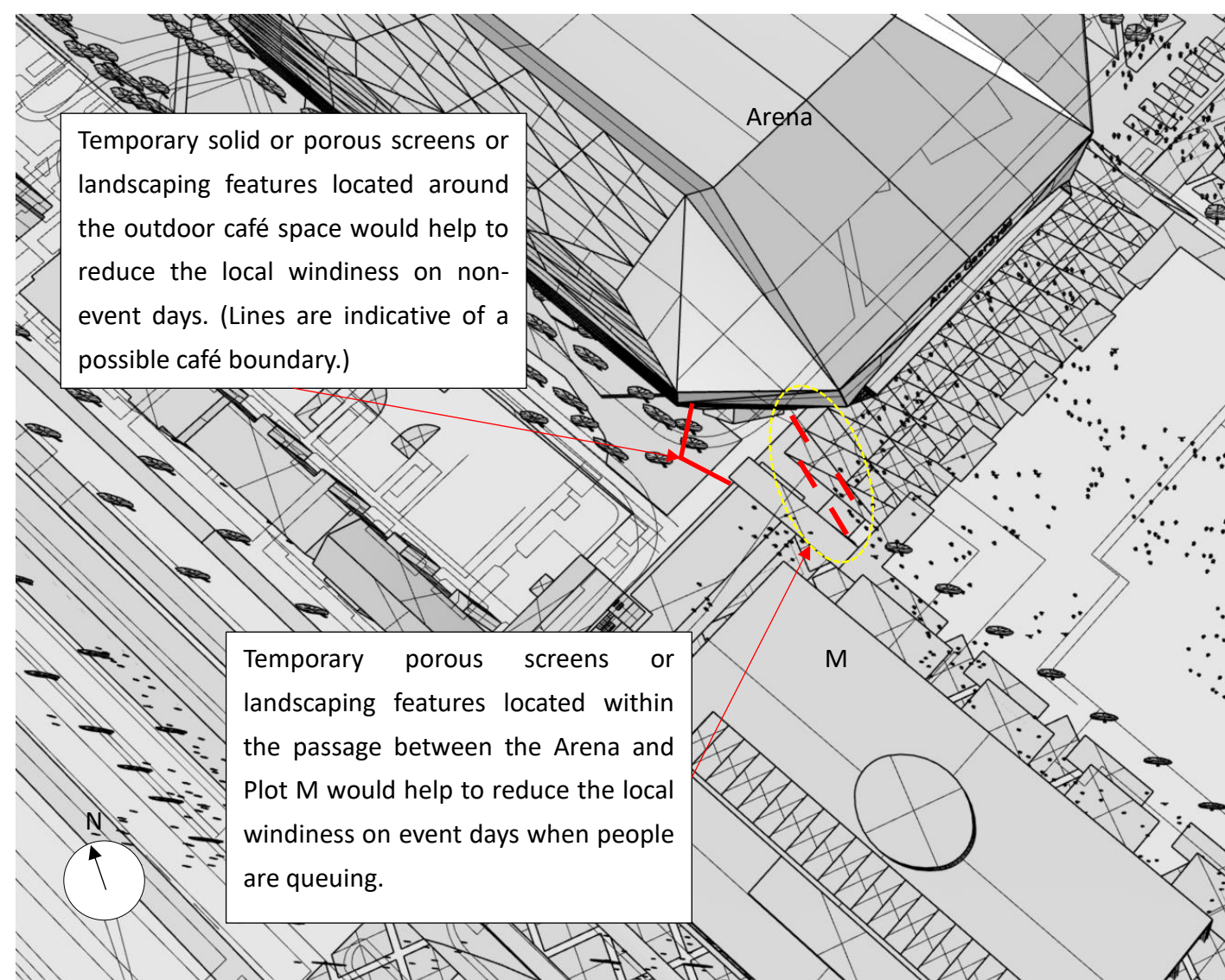
Figure 19.9



'Standing' to 'Strolling' conditions may be experienced along the western façade of the Hotel, where entrance to the car park is proposed. These conditions would remain acceptable for pedestrian access.

'Standing' to 'Strolling' conditions may be experienced along the eastern façade which remains sheltered from the prevailing winds but exposed to secondary north-east winds. The main entrance to the Hotel lobby is along this façade; these conditions are marginally unacceptable for primary entrance and access use without mitigation. A local side screen (1m deep) or equivalent recessing is suggested to improve the wind conditions to acceptable

Figure 19.10
Wind mitigation measures within the passage between the Arena and Plot M



The proposed landscaping consisting of 4m trees within the colonnade of Plot M is generally beneficial.

Figure 19.11
Wind mitigation measures at entrances to the arena

