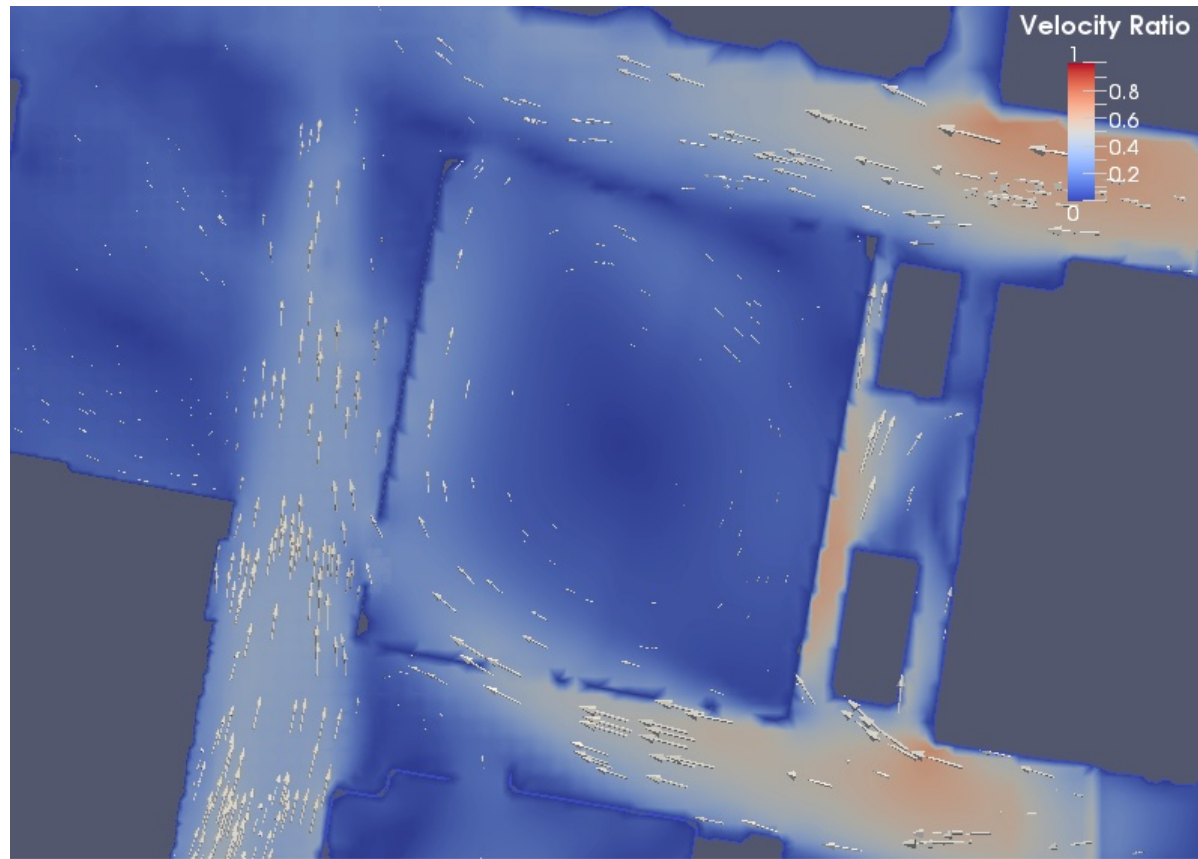
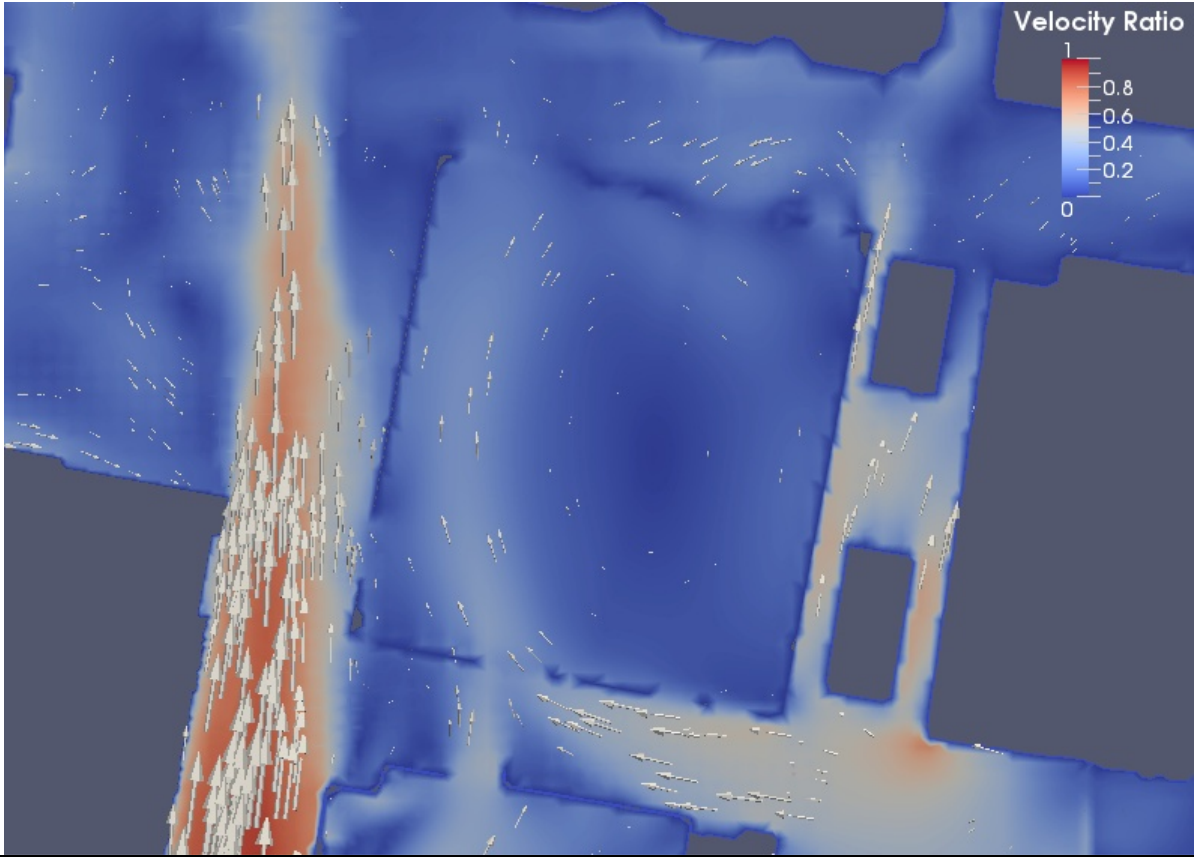


130° (Southeast)



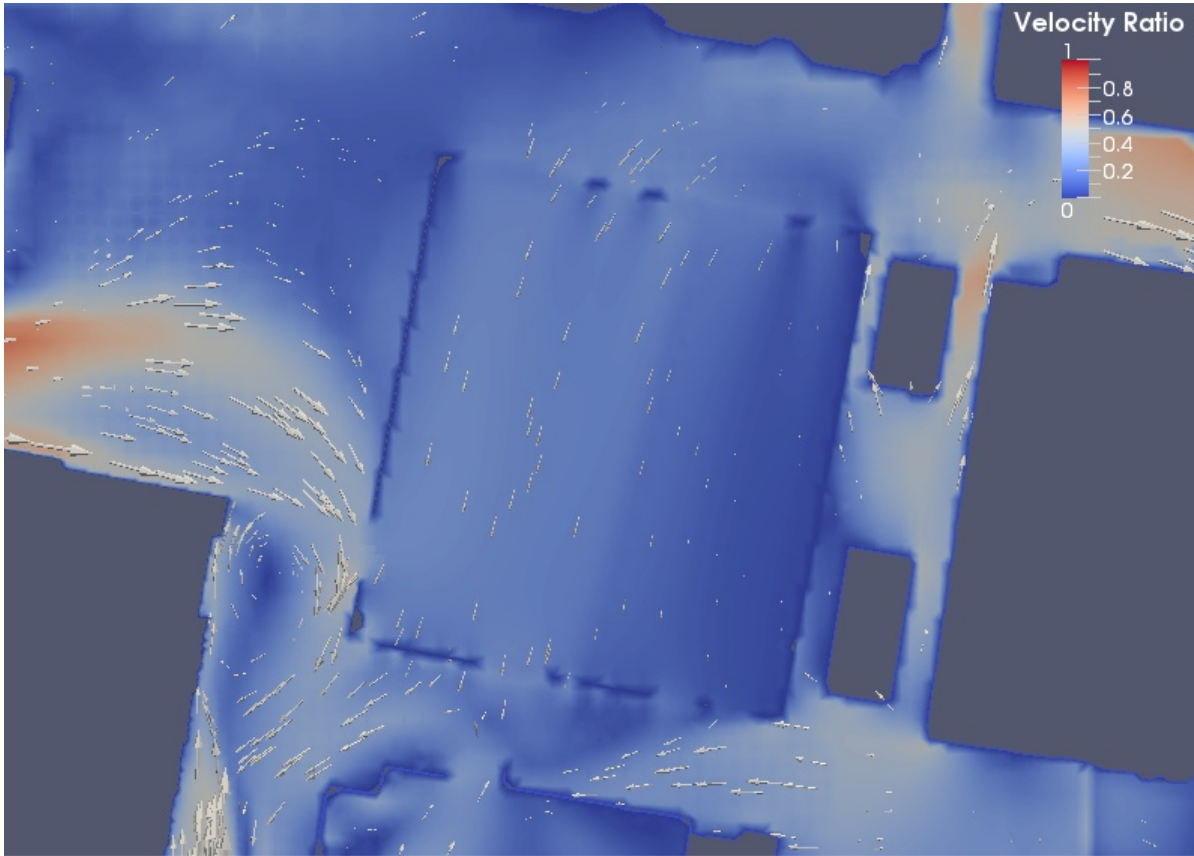
9 hours = 0.2% of the time 8am to 8pm >8m/s

Moderate-high wind speeds (5-11m/s) could be expected along the eastern and southern façades of the carpark.

180° (South)	56.5 hours = 1.3% of the time 8am to 8pm >8m/s
 The image is a wind flow visualization for a 180° (South) wind direction. It shows a color-coded map of a site with buildings and a carpark. A color scale in the top right corner, labeled 'Velocity Ratio', ranges from 0 (blue) to 1 (red), with intermediate values at 0.2, 0.4, 0.6, and 0.8. The flow is represented by white arrows. A prominent high-velocity corridor (red/orange) enters from the left, passes between two buildings, and terminates in the carpark area. Other areas show lower velocity ratios (blue/green).	Moderate wind speeds (5-8m/s) could be expected at the entrance of the carpark.

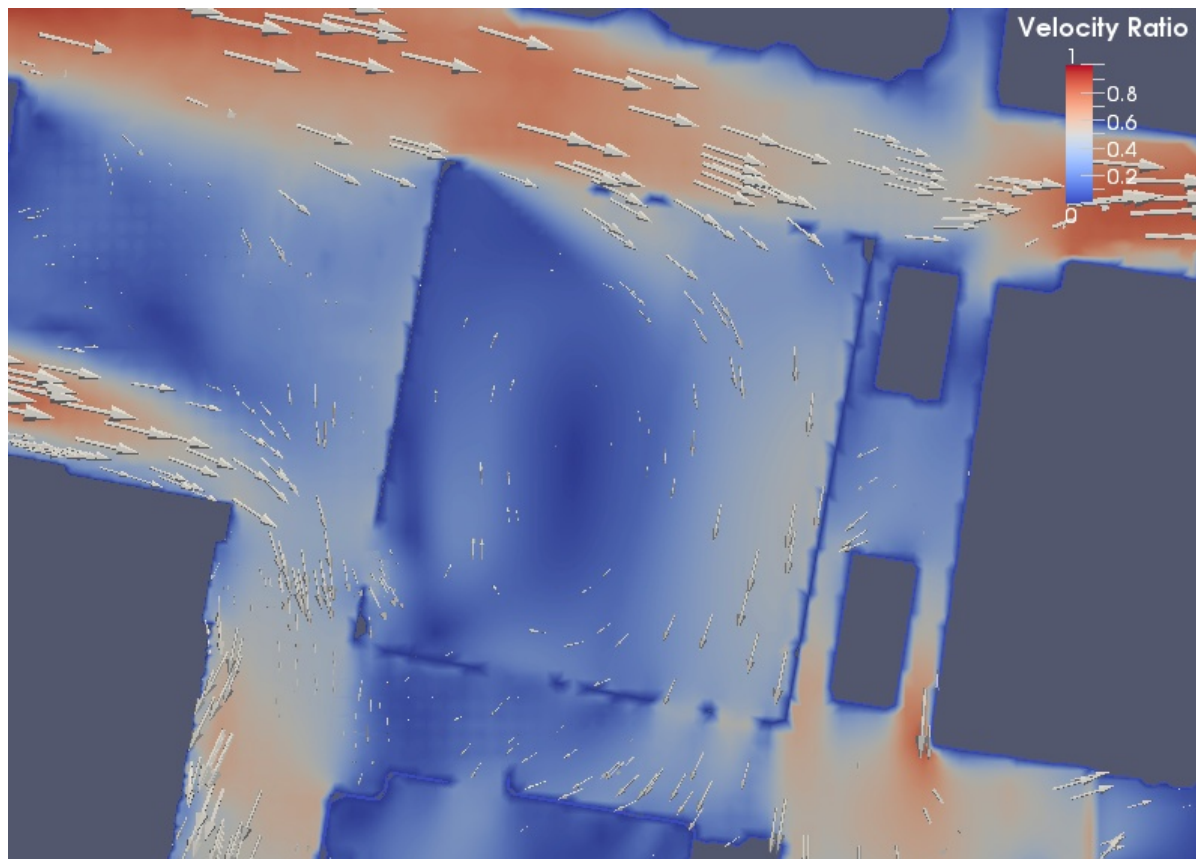
220° (Southwest)

8.5 hours = 0.2% of the time 8am to 8pm >8m/s



Moderate wind speeds (3-7m/s) could be expected at the entrance of the carpark.

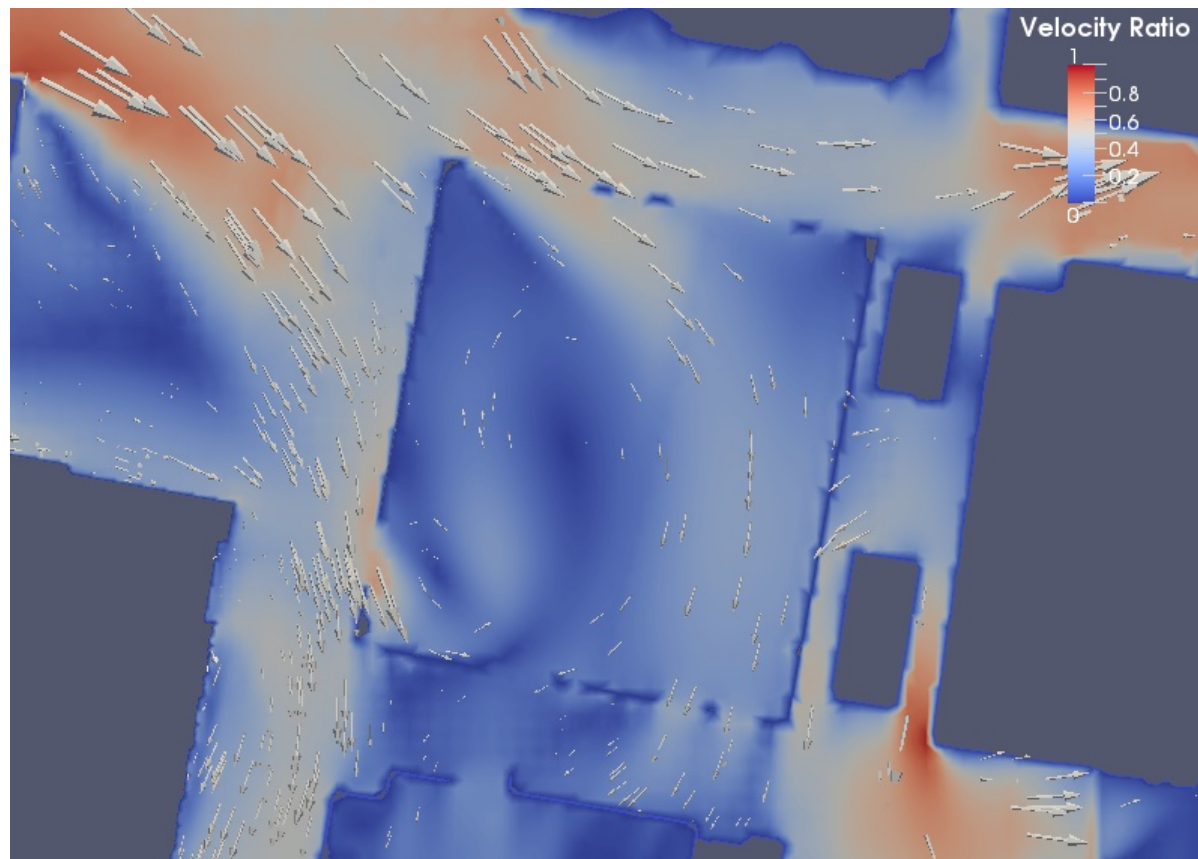
280° (West)



66.5 hours = 1.5% of the time 8am to 8pm >8m/s

Moderate-high wind speeds (5-11m/s) could be expected along the northern façade of the carpark.

310° (Northwest)



23 hours = 0.5% of the time 8am to 8pm >8m/s

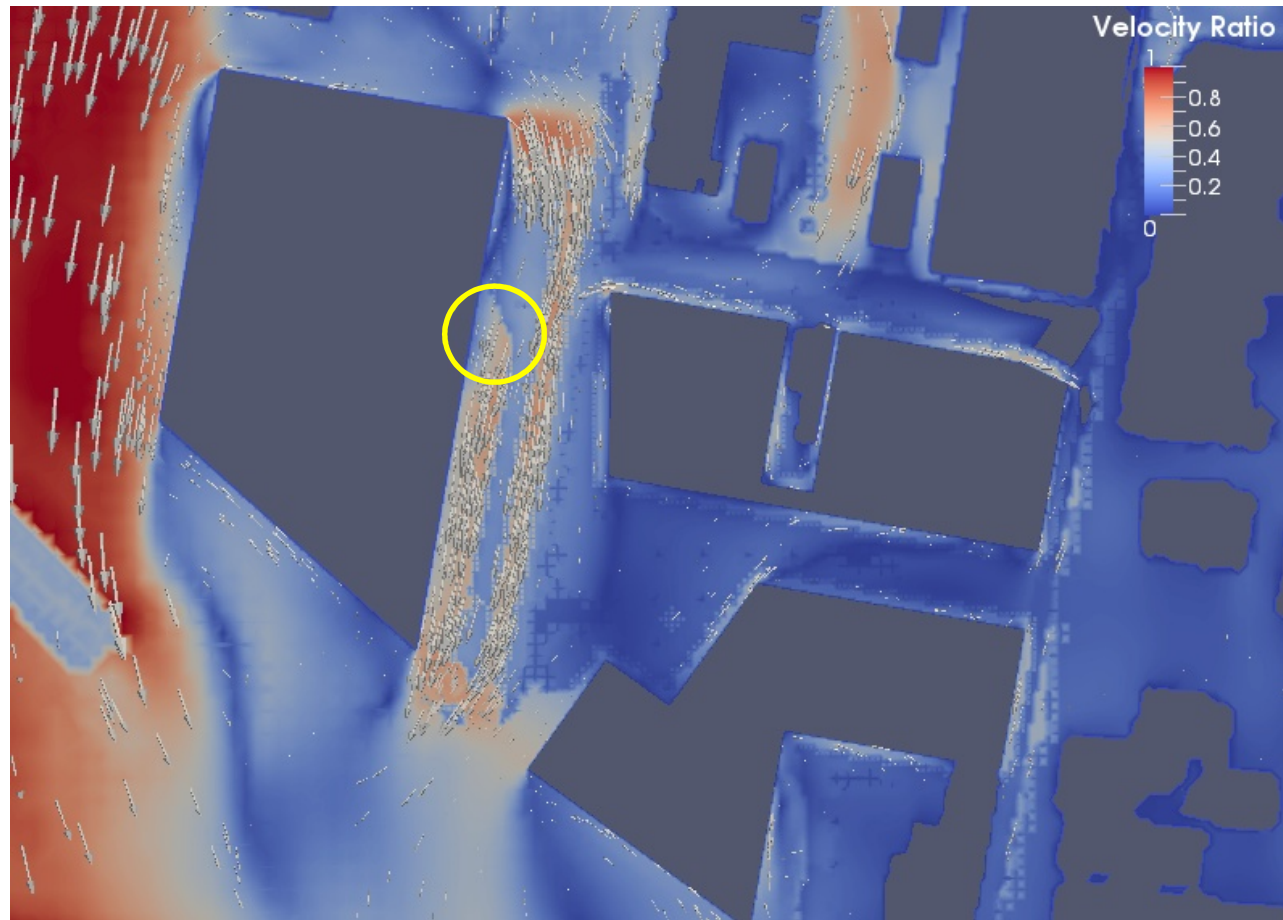
Moderate-high wind speeds (5-11m/s) could be expected in the entrance to the capark and along the northern façade of the carpark.

6 Results – Masterplan

The assessment was also carried out with the new masterplan buildings as shown below to highlight any impacts on the proposed club design in the future and to highlight critical wind issues to be addressed in the future. Please note the images have been taken 2m above the entrance level and it has not been updated to reflect the latest club design.

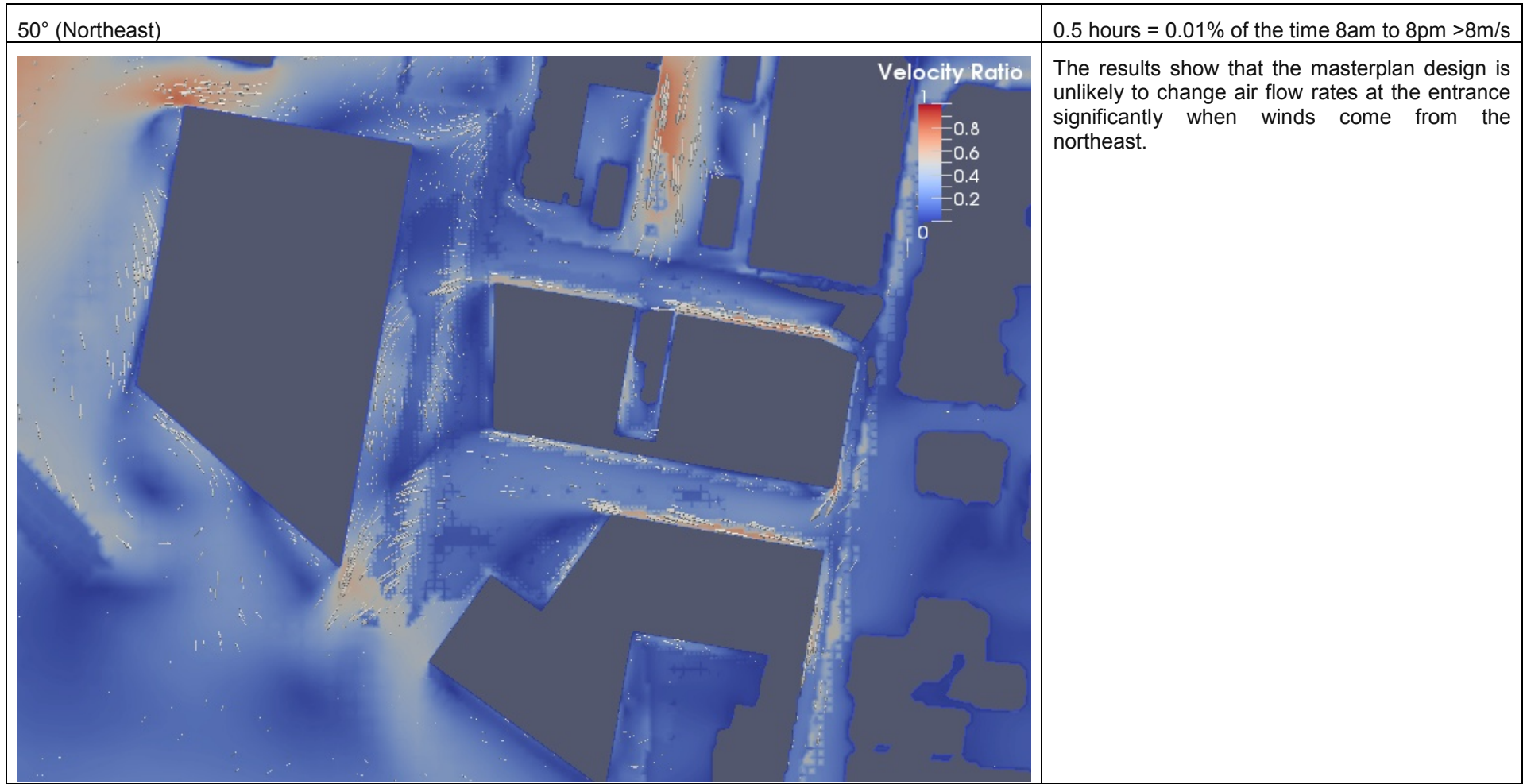


0° (North)

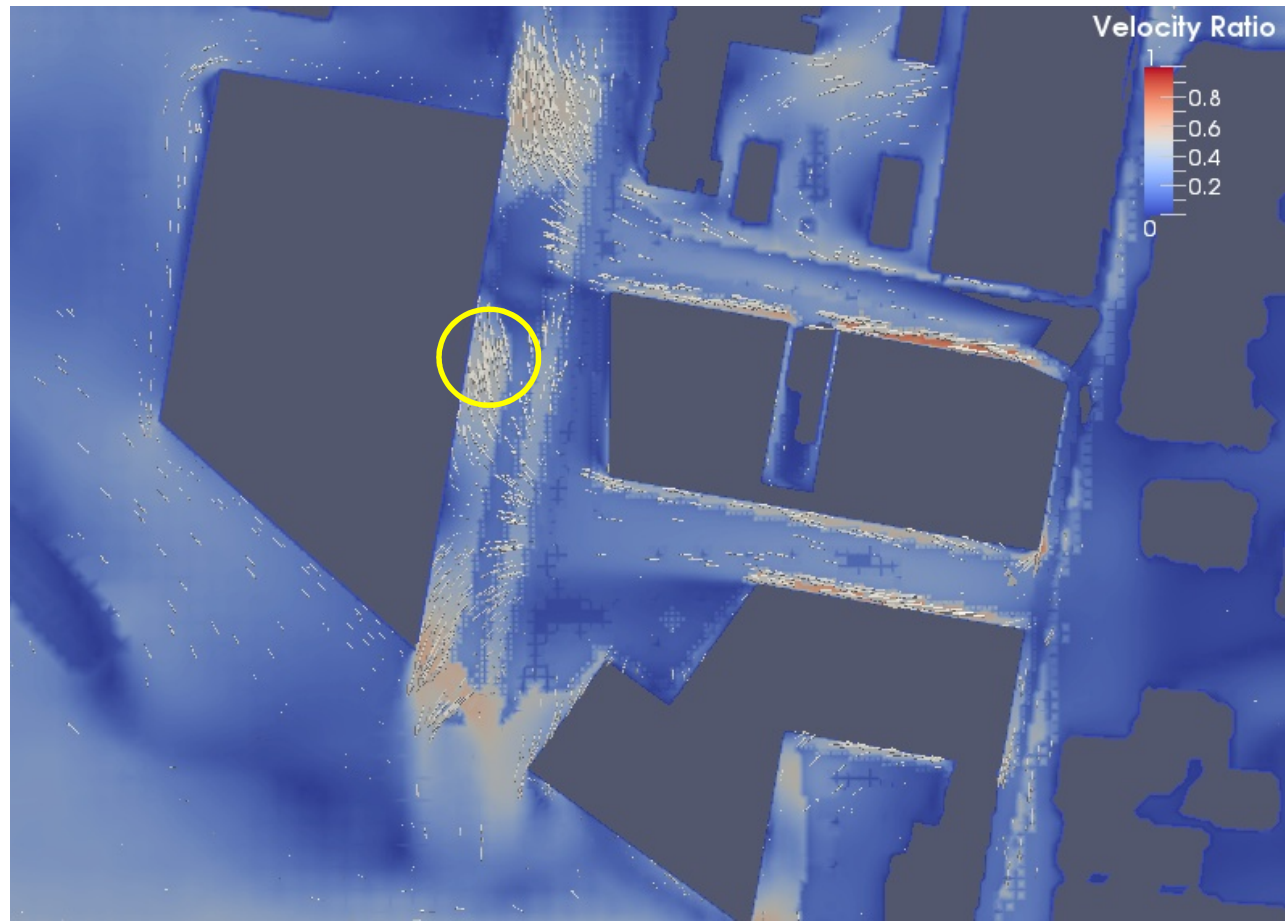


5 hours = 0.12% of the time 8am to 8pm >8m/s

The masterplan design could increase air flow rates at the entrance and access pathway to 5-11m/s when winds come from the north by channeling the wind along the driveway between the buildings and trapped below the awning.

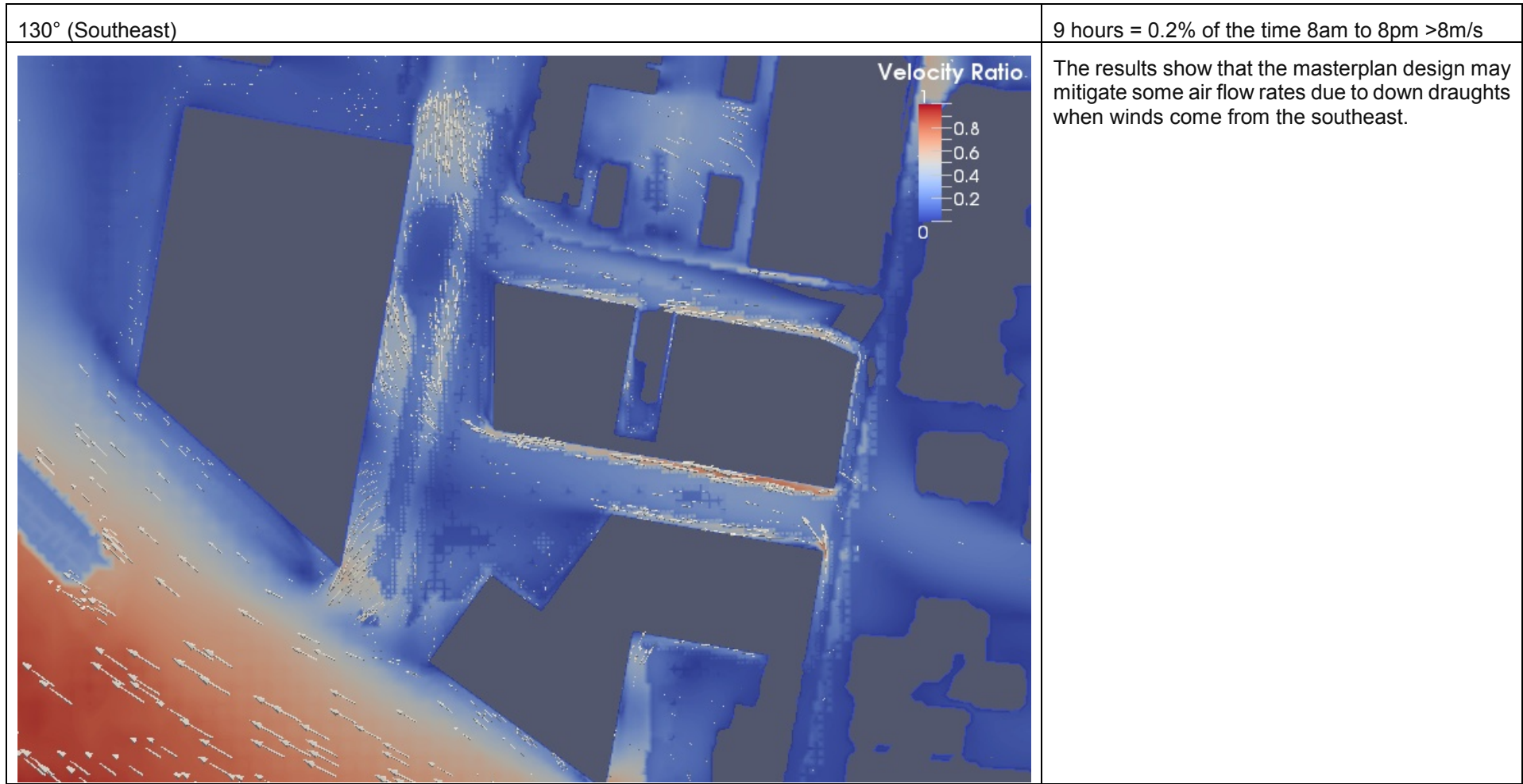


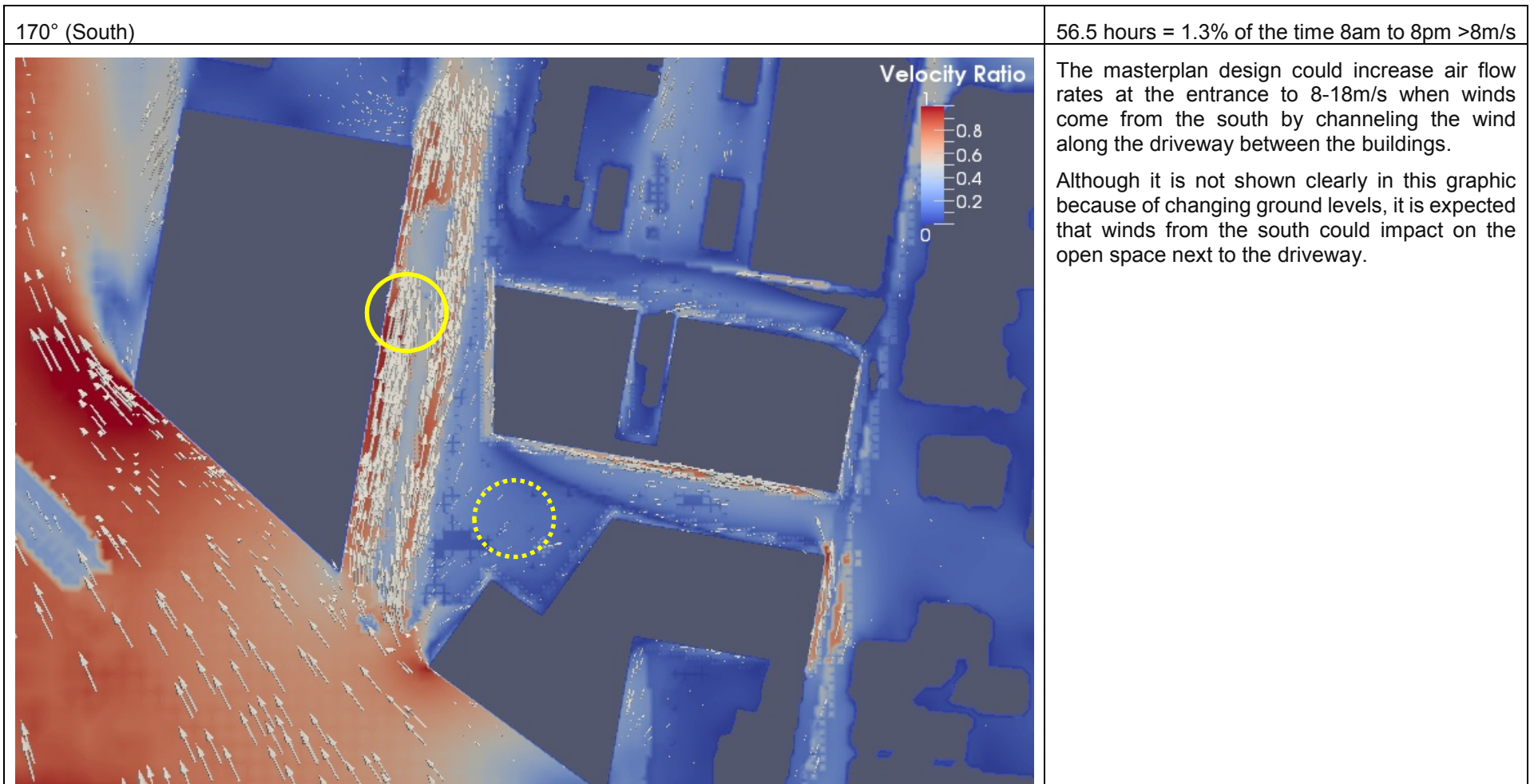
90° (East)

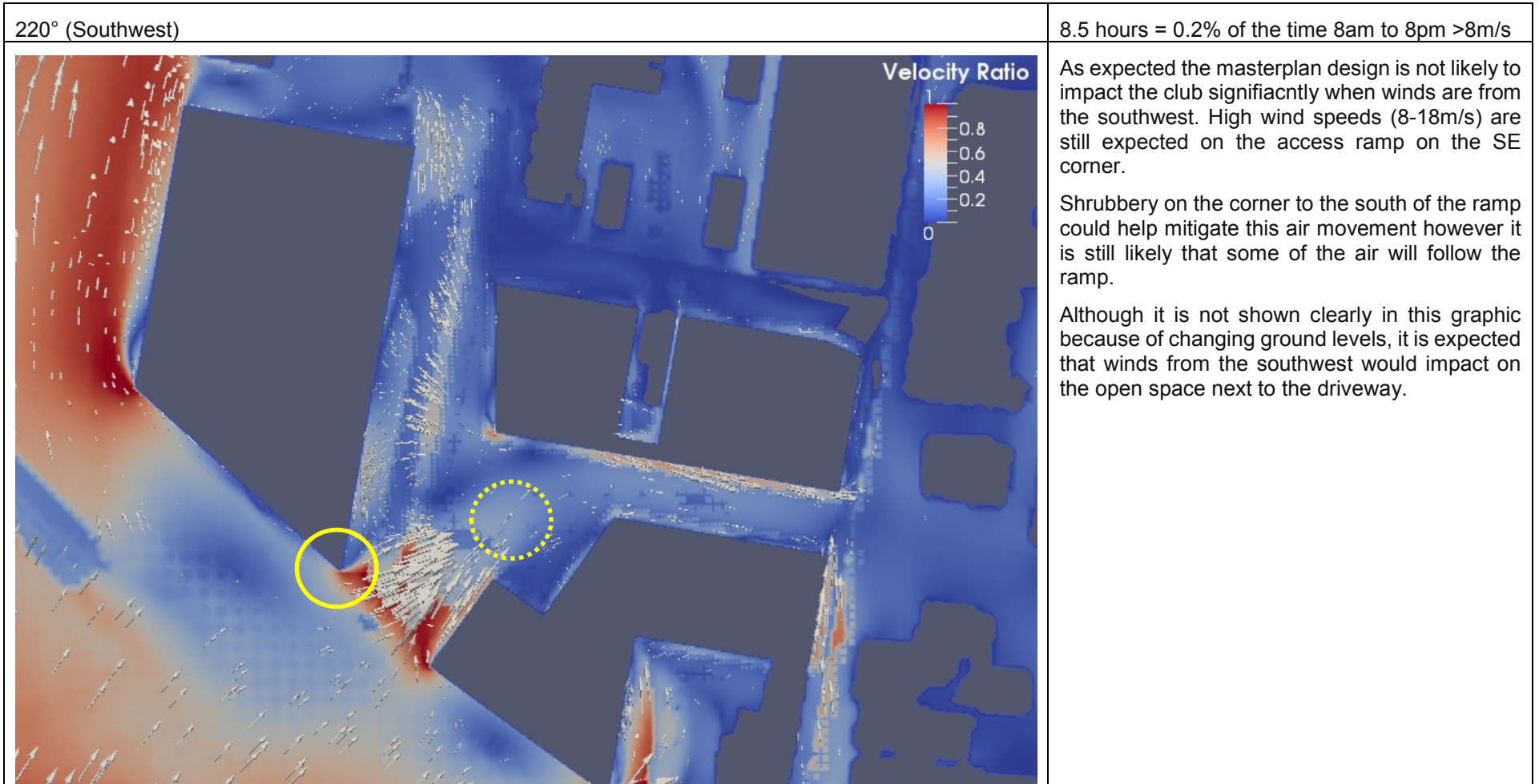


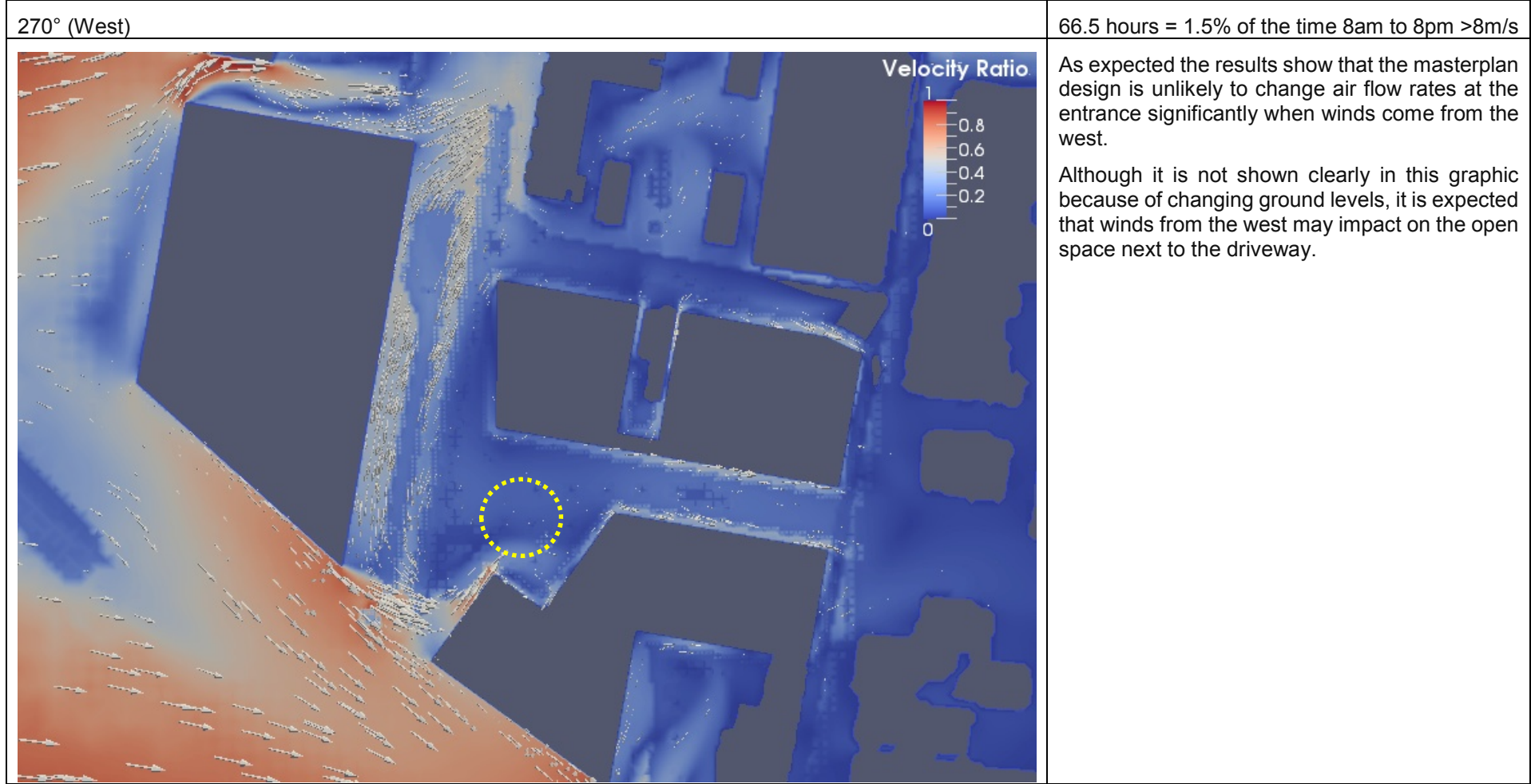
1 hour = 0.02% of the time 8am to 8pm >8m/s

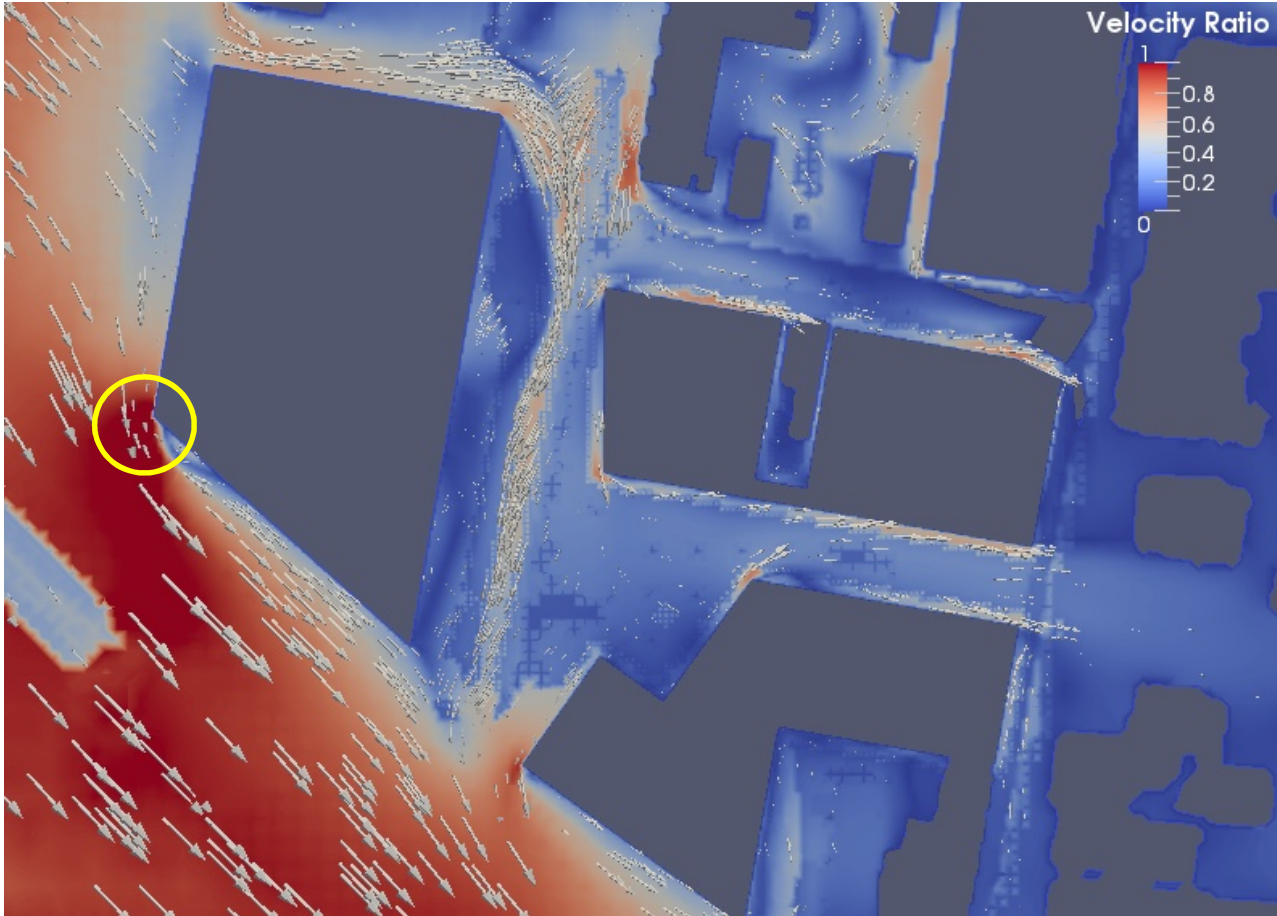
The results show that the masterplan design could increase air flow rates at the entrance due to channelling along the lanes between the buildings when winds come from the east.









310° (Northwest)	23 hours = 0.5% of the time 8am to 8pm >8m/s
 Velocity Ratio 1 0.8 0.6 0.4 0.2 0	As expected the results show that the masterplan design is unlikely to change air flow rates at the entrance significantly when winds come from the northwest. High wind speeds (8-18m/s) could still be experienced on the SW corner of the building.

7 Recommendations

The access ramp on the south east of the building is exposed to high wind speeds where the air accelerates around the corner. The ground level entrance to the proposed new club is relatively exposed to prevailing cold and wet winds from the south-east through to the south. Trees and shrubbery in the driveway median strip and around the ramp, particularly to the south, could help to mitigate the high wind speeds in these areas. It has been noted that some landscaping has already been included in the design but they appear to be palm trees that won't offer much protection from the wind at low or high level. The shrubbery should be up to 2m tall and have fairly dense foliage (at least 30% resistance to the wind) and taller trees should have a canopy with fairly dense foliage (at least 30% resistance to the wind) that will break wind speeds above the awning height from 4-8m above the ground.

It is also recommended that the use of the open space next to the driveway be considered when the masterplan is completed and depending on the use to allow adequate screening and landscaping to protect people from the colder southerly to westerly winds.

Appendix A Detailed Results – New club

