Appendix H

Environmental wind

Contents

H1 Environmental wind

H1.1 Introduction

This appendix provides further information on the methodology used for the quantitative assessment of the wind conditions around the Proposed Development. It also includes photos of the models tested in the wind tunnel and plots of both summer and worst case results for each configuration.

H1.2 Methodology

A 1:300 scale model of the proposed (and existing) development and its surroundings was constructed and placed in a boundary layer wind tunnel for testing. The wind tunnel data were processed and interpreted by Arup.

Gust and mean speeds were obtained using Irwin probes for sixteen equal increments of wind direction. The probe locations were selected either due to wind sensitivity of the expected activity in the area (building entrances, external seating, etc.) or because the site geometry suggested the possibility of undesirable wind conditions.

The measured wind speed ratios were combined with the wind statistics for London to calculate seasonal and annual levels of windiness according to the ‘comfort’ and ‘distress’ limits in the Lawson Criteria. These Criteria define appropriate levels of windiness according to the type of activity being performed in the area and levels of windiness that may cause distress.

H1.3 Wind tunnel images

Existing site and surroundings

Figure 1: Photo of the model in the wind tunnel for the existing scenario (view from south)

Figure 2: Close up photo of the model in the wind tunnel for the existing scenario (view from south)

The Detailed Area in existing surroundings

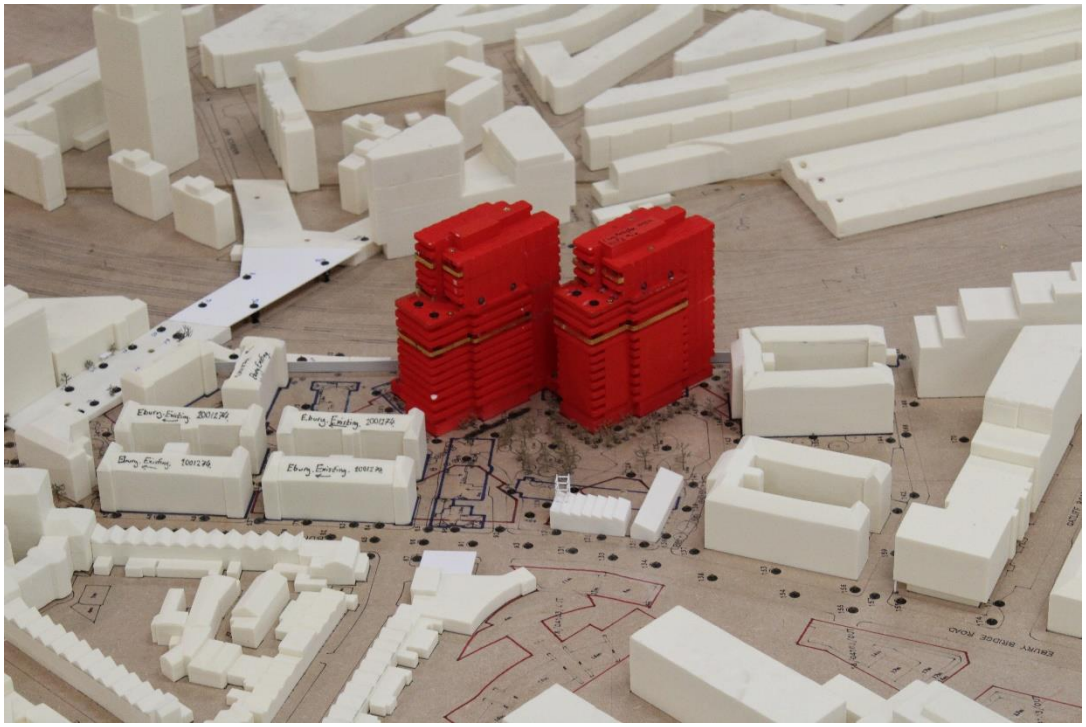

Figure 3: Photo of the Detailed Area model in the wind tunnel (view from the west)

Figure 4: Photo of the Detailed Area model and existing surroundings in the wind tunnel (view from the west)

Masterplan in existing surroundings

Figure 5: Photo of the masterplan model in the wind tunnel in existing surroundings (view from the west)

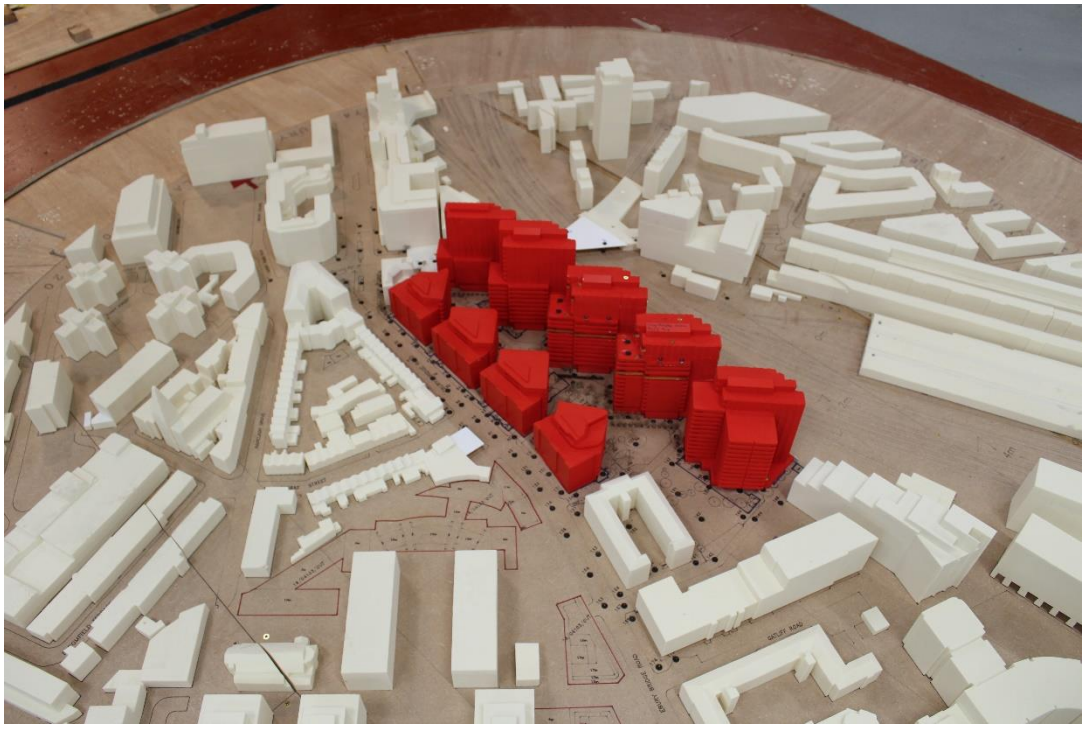

Figure 6: Photo of the masterplan model in the wind tunnel in existing surroundings (view from the south-west)

Masterplan in future surroundings

Figure 7: Photo of the masterplan model in the wind tunnel in future surroundings (view from the west)

Figure 8: Photo of the masterplan model in the wind tunnel in future surroundings (view from the south-west)

Masterplan podium and terrace levels, with landscaping:

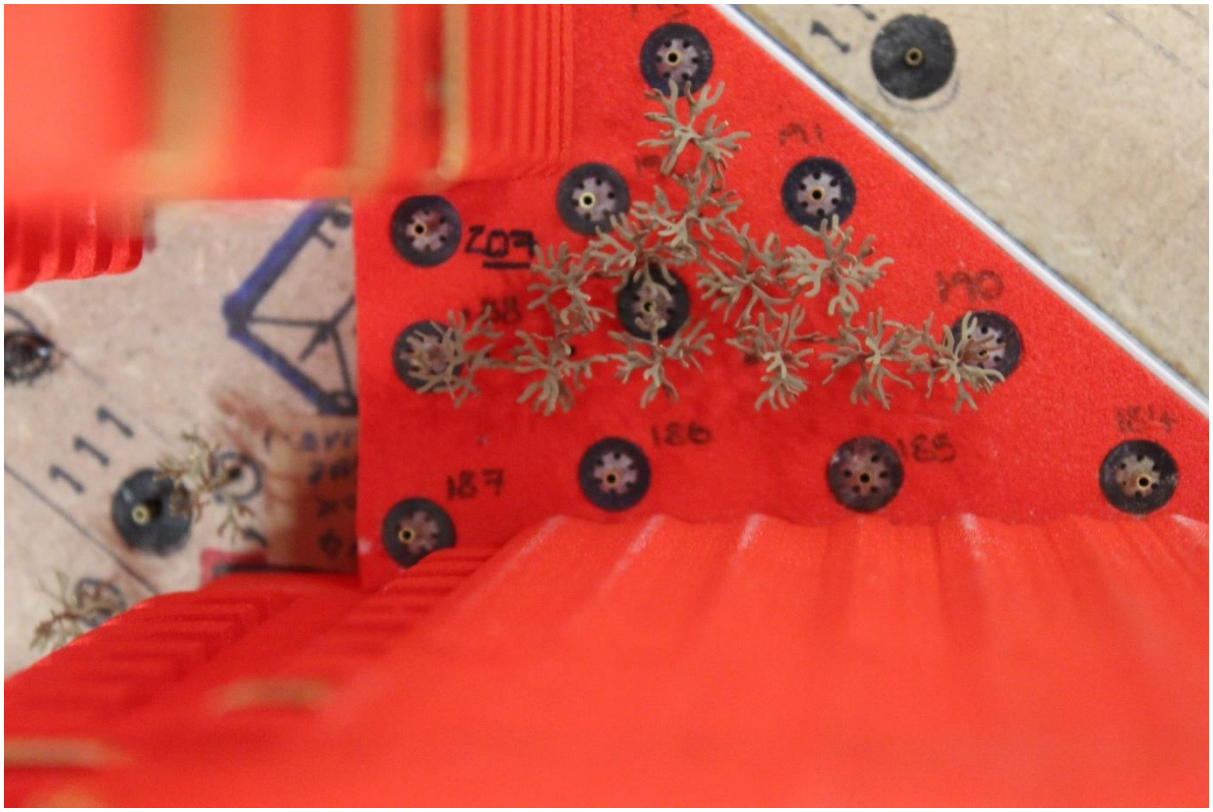

Figure 9: Photo of the landscaping modelled on the podium between blocks 7 and 8

Figure 10: Photo of the landscaping modelled on the podium to the north of Block 7

Figure 11: Photo of the modelled terraces on blocks 7 and 8

H1.4 Wind tunnel results

Existing site and surroundings

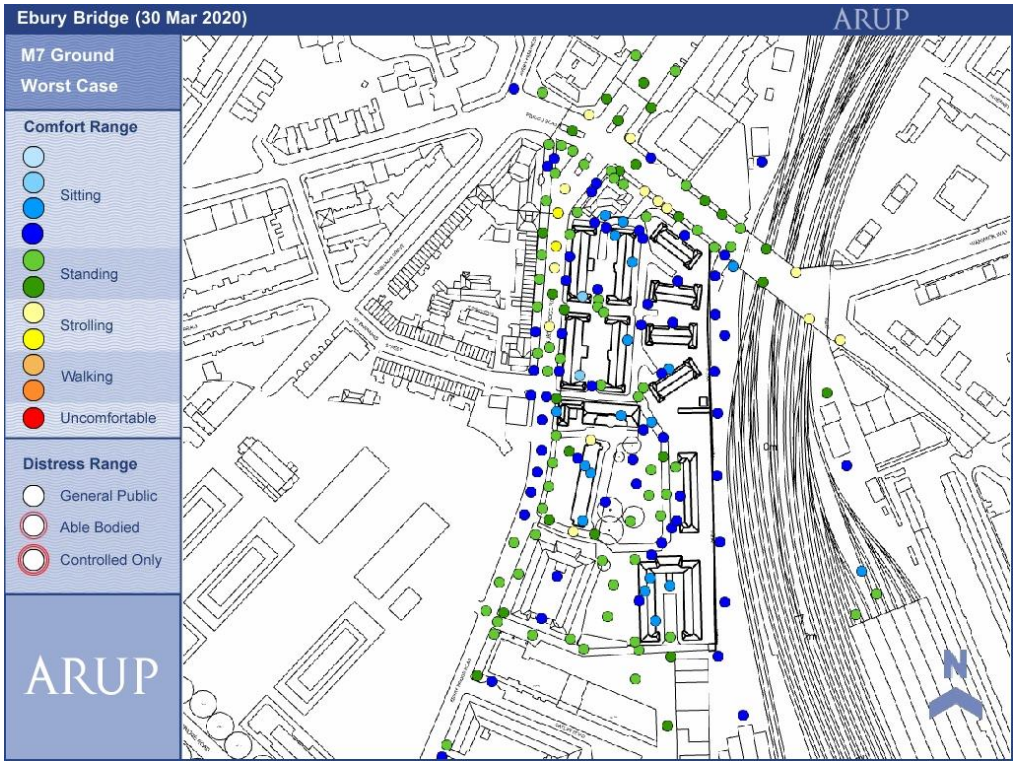

Figure 12: Plot of the wind results around the existing site (worst case)

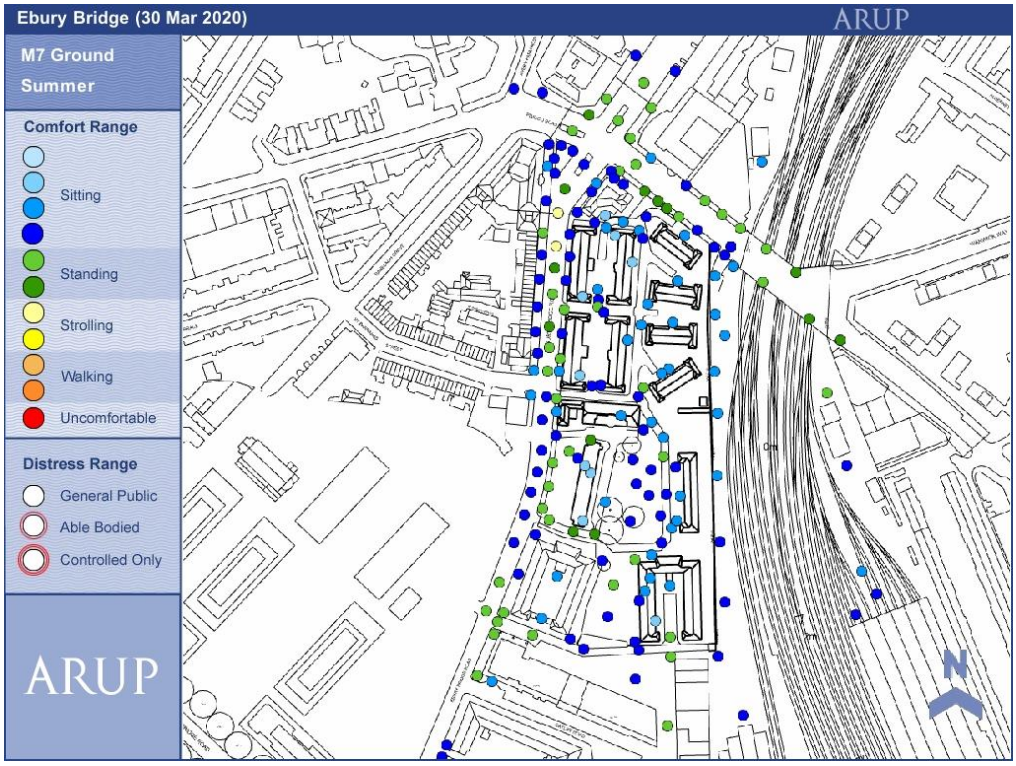

Figure 13: Plot of the wind results around the existing site (summer)

The Detailed Area in existing surroundings

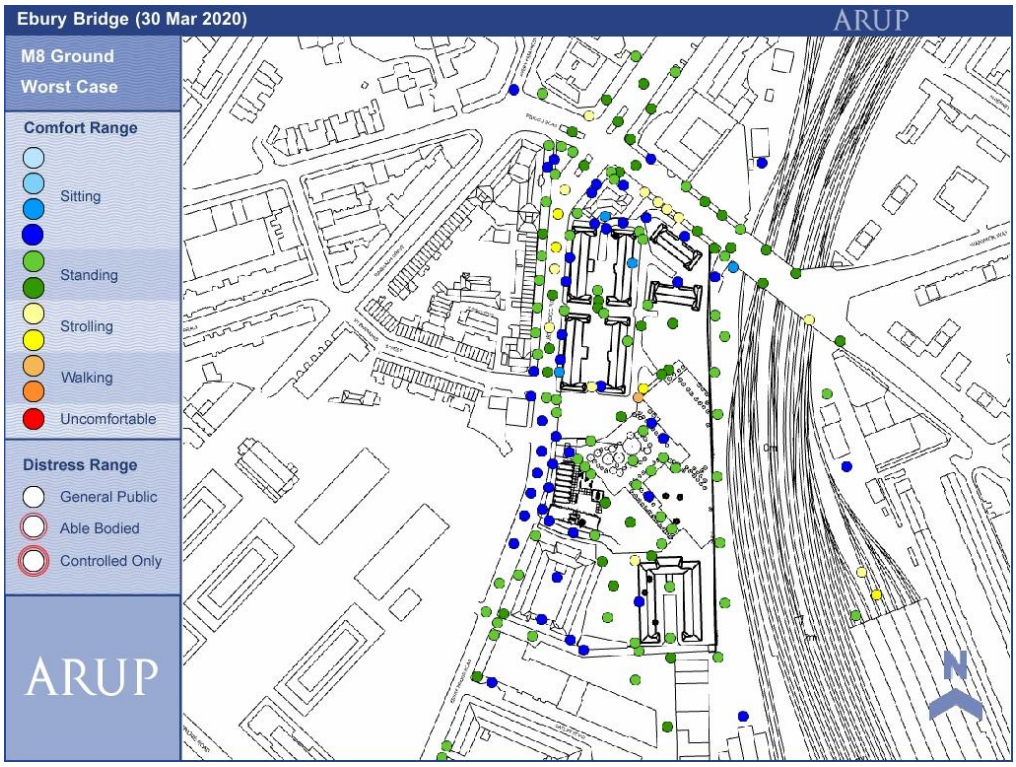

Figure 14: Plot of the wind results around the Detailed Area (worst case)

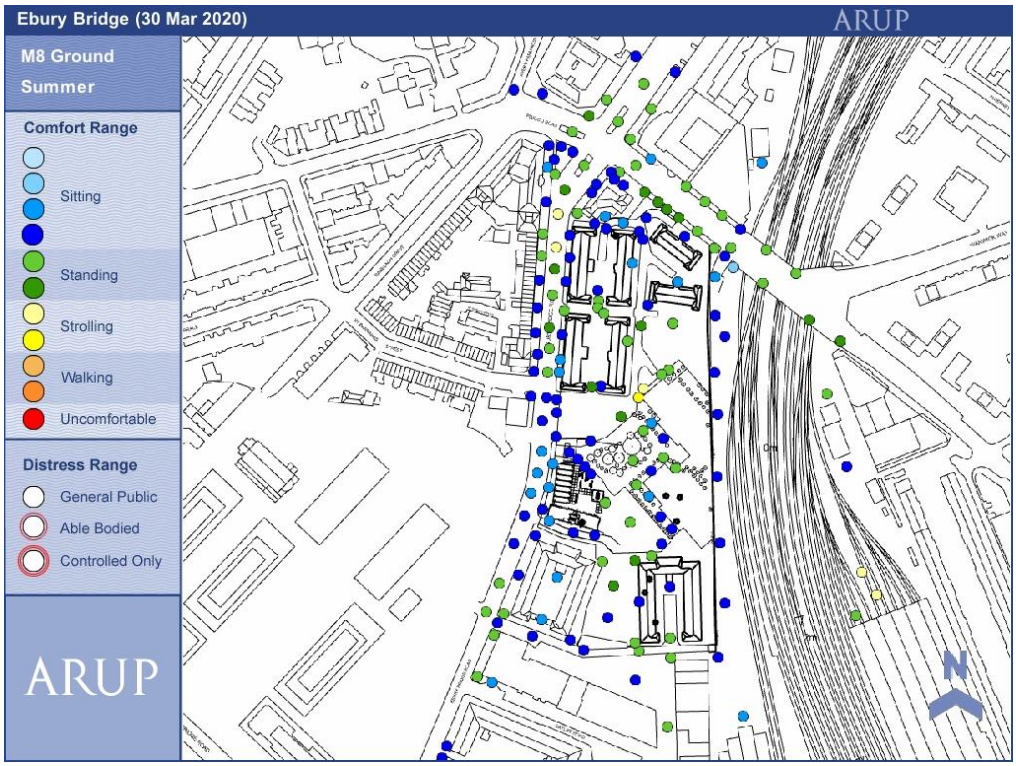

Figure 15: Plot of the wind results around the Detailed Area (summer)

Masterplan in existing surroundings:

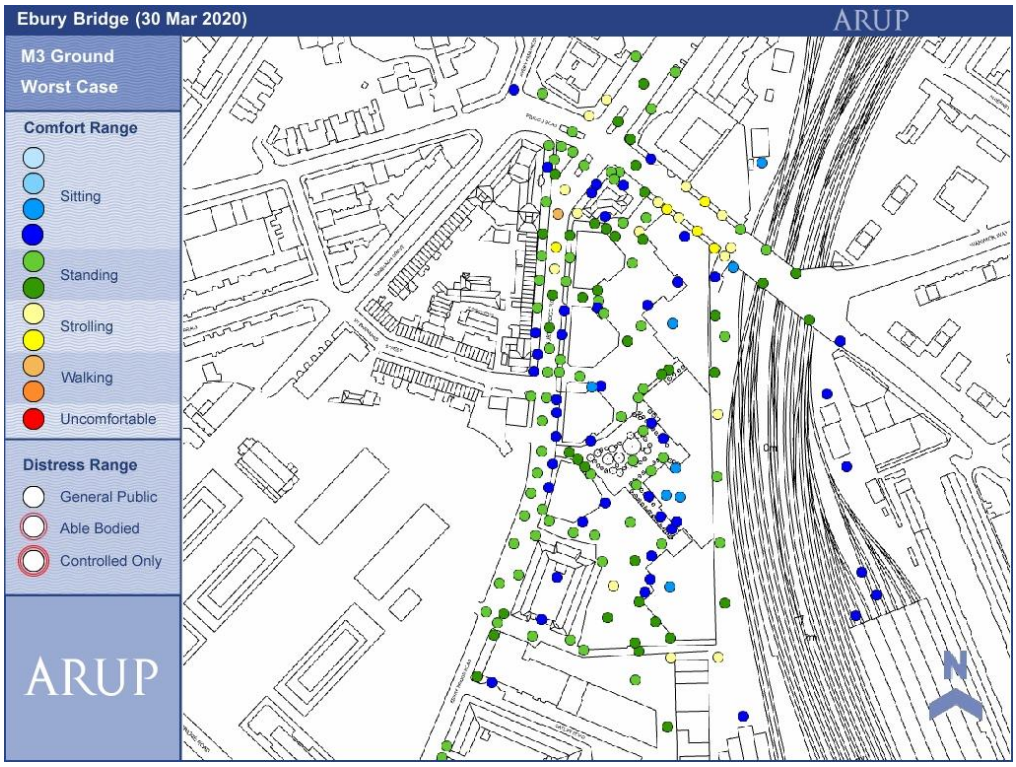

Figure 16: Plot of the wind results around the masterplan in existing surroundings (worst case)

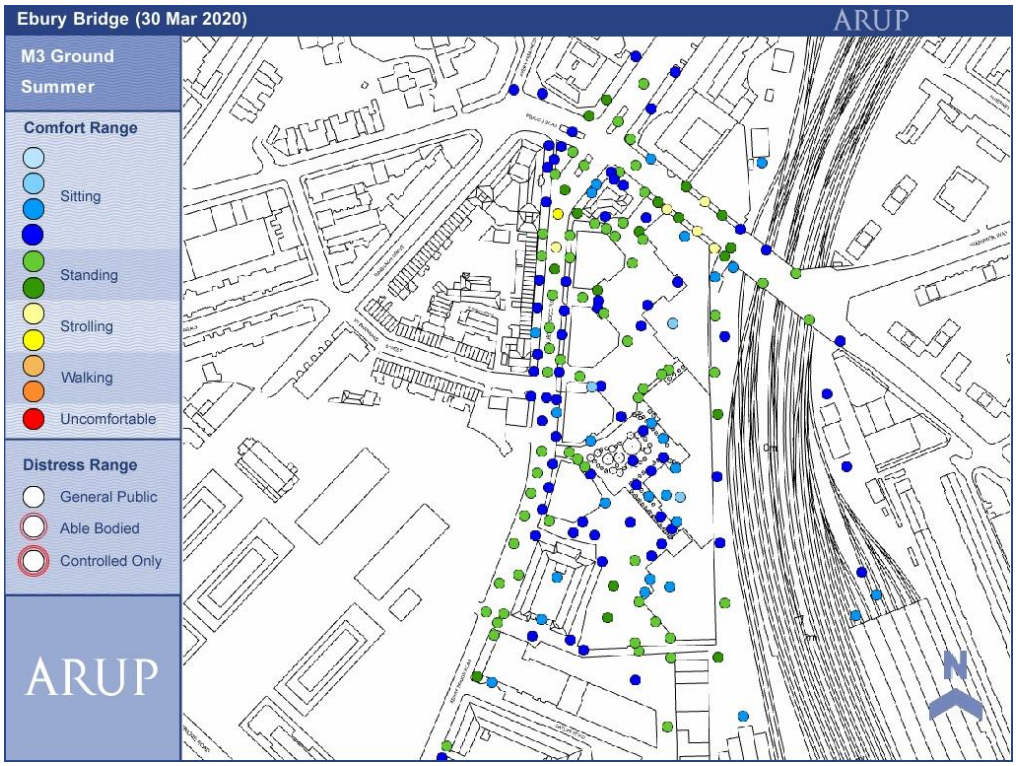

Figure 17: Plot of the wind results around the masterplan in existing surroundings (summer)

Masterplan in future surroundings:

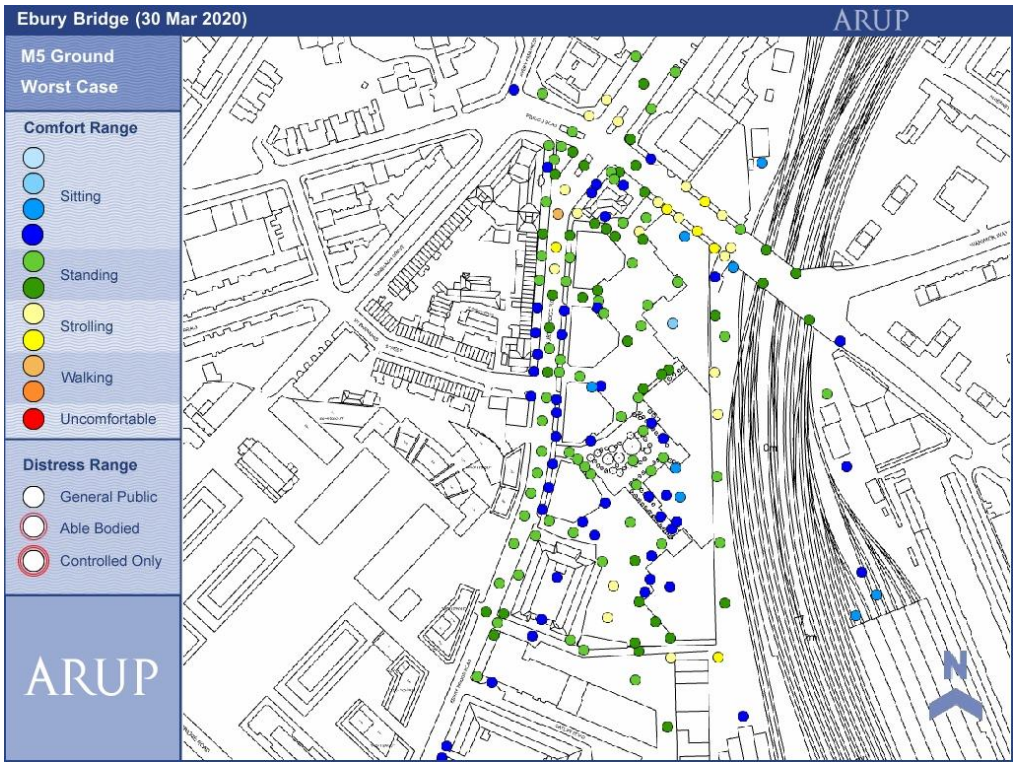

Figure 18: Plot of the wind results around the masterplan in future surroundings (worst case)

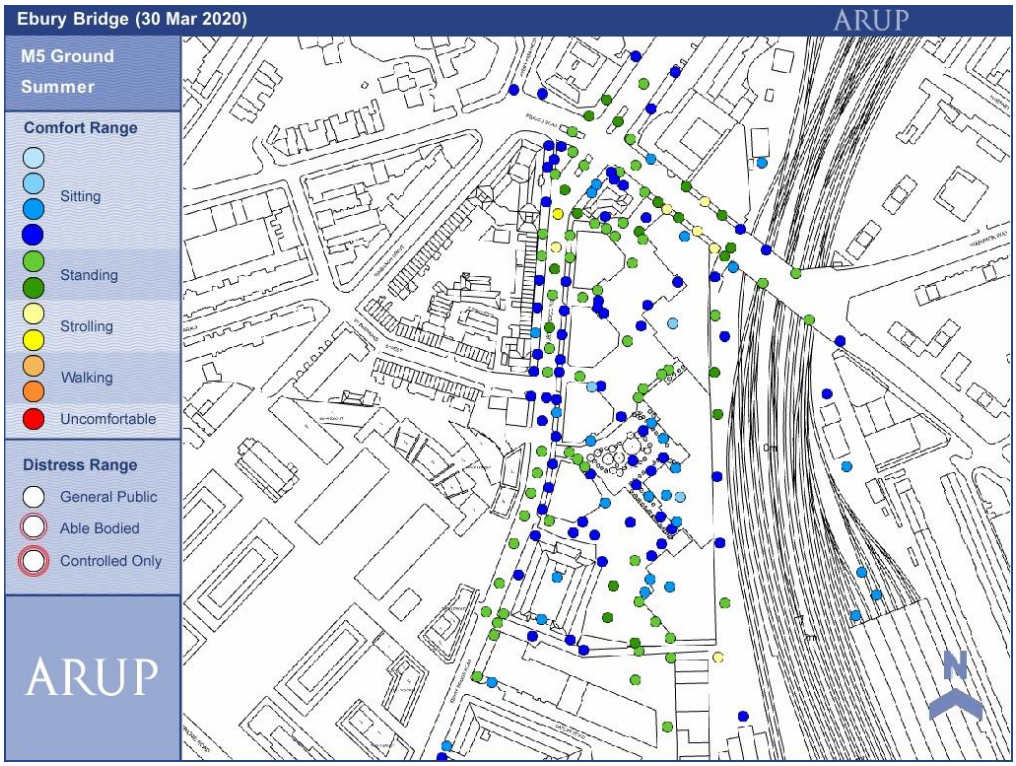

Figure 19: Plot of the wind results around the masterplan in future surroundings (summer)

Masterplan podium and terrace levels, with landscaping:

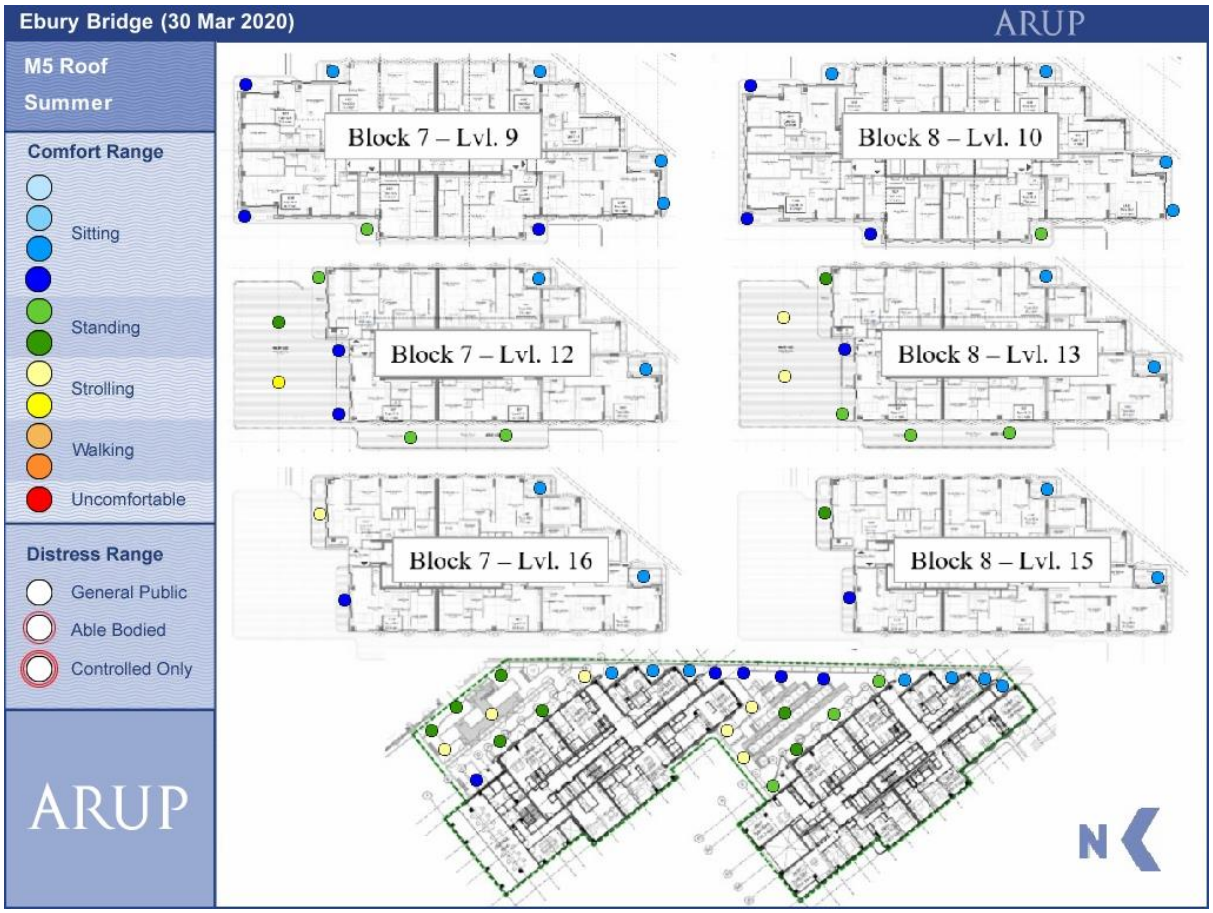

Figure 20: Plot of the wind results on the Block 7 and 8 podiums and terraces within the masterplan in existing surroundings (summer)