BUROHAPPOLD ENGINEERING

Design Note

Project	NOMA, 4 Angel Square
Subject	Comments in relation to discharging Planning conditions (wind mitigation)
Project no	042512
Date	11th of July 2024

Revision	Description	Issued by	Date	Approved (signature)
00	Draft	BV	11/07/2024	GO

1. Introduction

This design note has been prepared in relation to Planning Condition 42, that has arisen as a result of the Wind Microclimate Assessment supporting the planning application for NOMA 4 Angel Square. A meeting (May 2024) took place with the Manchester City Council representatives to discuss the discharge condition CDN/20/0480. This design note is a follow up to this meeting and supports the statement that the requirement to mitigate or monitor the existing marginal safety exceedance is negligible and not required, and statements to support this view are included below.

We refer in this document to the following documents:

1) The Wind Microclimate Assessment was a quantitative CFD (Computational Fluid Dynamics) study that has been attached to the Planning Permission Ref 123437/FO/2019,

2) The planning condition 42 statement and BuroHappold design note

   A Burohappold design note was submitted (CDN_20_0480-DESIGN_NOTE-1474361) under condition discharge application CDN/20/0480 in July 2020 and was subsequently approved (see below).

   - The report recommends installing a planter across the road from 4 Angel Square (well outside of the site/ownership boundary)

   The wording of the condition approval is as follows:

   The above noted has been considered and is acceptable. The wind environment will be reviewed on completion of the building to confirm whether there are any safety issues associated with the wind climate adjacent to the Parkers Hotel Apartment building. This review shall be submitted to the City Council, as Local Planning Authority, as part of the full discharge of this planning condition

3) New Victoria planning application wind studies 111777/FO/2016/C1

4) The subsequent meeting with the MCC in May 2024

We need to refer to the findings and justifications for the conditions to be discharge are within the Wind Microclimate Assessment supporting the planning application for NOMA 4 Angel Square was carried out during 2020. The Wind Microclimate Assessment was a quantitative CFD (Computational Fluid Dynamics) study that has been attached to the Planning Permission Ref 123437/FO/2019. It has been undertaken to determine if wind comfort and safety conditions

would be suitable for the planned pedestrian activities at the Proposed Development Site and surroundings, including the cumulative scenario where committed developments are introduced, such as the New Victoria development adjacent to Victoria Station.

The CFD Wind Microclimate Assessment determined an existing safety issue present on the baseline condition (this was later corroborated by the Wind Tunnel studies for New Victoria see - 111777_FO_2016_C1-Appendix_9.1_Wind_Figures-653459.pdf Figure 10.5) adjacent to the Parkers Hotel Apartment building. The CFD analysis of the proposed configuration (C2) confirmed there was a remaining safety issue adjacent to the Parkers Hotel Apartment building.

The results of the C2 configuration improved the pre-existing safety issue adjacent to the Parkers Hotel Apartment building. This safety issue was reduced to a very small area, directly adjacent to the façade of this building, where it is unlikely that pedestrians would walk. As well as being 2.5 hrs a marginal increase above the safety threshold set at 2.2 therefore, we consider this issue becomes **practically negligible.**

Further information regarding the findings of the study are listed below

2. Configurations studied and findings of the CFD study

The Wind Microclimate Assessments covered the study of three configurations as follows:

C1 - Existing site in the context of existing buildings.

C2 – Proposed Development in the context of existing surroundings

C3 - Proposed development in the context of future surroundings

The following wind effects related to safety were found:

C1 Summary wind effects

In the baseline conditions a safety issue was identified adjacent to the Parkers Hotel Apartment building, and three other locations far away from this location.

C2 Summary wind effects

In this configuration only one of the safety issues observed in C1 remained (adjacent to the Parkers Hotel Apartment building) but had reduced in size and intensity significantly.

C3 Summary wind effects

In this configuration the safety issues seen in both earlier configurations remained.

NOTE: The New Victoria wind tunnel studies report showed a removal of the safety adjacent to the Parkers Hotel Apartment building once the New Victoria development was built.

The results for the above configurations suggest the areas of safety are not currently affected by surrounding developments.

3. Summary

Following on from the Wind Microclimate Assessment supporting the planning application (2019), another CFD study was undertaken (2020) to assess the impact of the additional proposed mitigation (a planter located adjacent to the Parkers Hotel Apartment building) on resolving the remaining safety issue and therefore Planning Condition 42. This assessment was carried out for one configuration as agreed with the MCC, which was the proposed development in the context of surrounding buildings and landscape. The assessment revealed that the proposed mitigation is sufficient to resolve the existing safety issue.

In order to resolve the safety issue, the required dimensions of the planter are such that the MCC Highways requirements are not met, i.e. the remaining space available on the pavement after implementation of the planter is approximately 1.4m (compared to the MCC Highways minimum requirement of 1.8m). As such, the proposed planter mitigation measure was found to be impractical. Because further mitigation would be located on a public pavement, and outside the redline boundary of the Proposed Development.

However, reviewing the result for C2, it was concluded that the pre-existing safety issue adjacent to the Parkers Hotel Apartment building was improved to a sufficient degree for this location. The safety issue was reduced to a very small area with limited number of exceedance hours, directly adjacent to the façade of this building, where it is unlikely that

pedestrians would walk at this close distance from the façade. Therefore, the wind effect at this location becomes **practically negligible**.

4. Conclusion

It should be noted that the safety issue by the Parkers Hotel Apartment building results from the exceedance of a wind speed of 15 m/s for approximately 2.5 hrs per year (the threshold was 2.2 hrs), this is a marginal exceedance. Moreover, there has not been anecdotal reference of high wind speeds occurring in this location as it stands, i.e. in the baseline scenario which resulted in a larger area of safety exceedance at this location than the scenario including the Proposed Development and landscape. Therefore, it is considered that the safety issue in the studied scenario is low risk even without implementation of the proposed mitigation.