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Circle Square, Plots 2 & 4 – Wind Microclimate Study

Executive Summary: *The proposed amendments include the removal of three trees on Oxford Road, adjacent to Building 2 of the Circle Square Masterplan. This note sets out the consideration of the potential implications on the wind conditions following removal of the trees. It finds that the removal of the trees will not result in any exceedances of the safety criteria for any locations. It sets out that at one location, on the corner of Oxford Road and Brancaster Road (now Newman Street) there is anticipated to be an exceedance of the comfort criteria for ingress / egress. As such, the main entrance to this retail unit has been relocated to the south-east façade of Building 2 which was assessed as being suitable in terms of pedestrian safety and comfort for entrance use, with the entrance on Oxford Road being used as a secondary entrance only. Otherwise, wind conditions remain as indicated in the original wind tunnel assessment.*

Dear Vinny,

I am pleased to confirm that NOVA Fluid Mechanics Limited (NOVA) has taken over the wind engineering business unit from BMT, retaining BMT wind engineering staff and IP (including past project data), and importantly the technical expertise thereof.

In 2018, BMT carried out an assessment of the overall impact to the wind microclimate in and around Plots 2 & 4 of the proposed Circle Square development in Manchester, which is summarised in BMT Report 432203rep1v3, dated 11th January 2018, which was submitted in support of the approved planning application. In summary, wind conditions at the vast majority of locations within the site and surrounding area were suitable, in terms of both pedestrian comfort and safety, for planned uses with only a few minor exceedances, in terms of comfort only, in localised areas.

Between March 2019 and March 2020, BMT/NOVA have been notified of minor changes to Plots 2 & 4 of the Circle Square development compared to the scheme that was assessed in 2018. The final proposal is presented in “FINAL1813-c2-minor material amendments_060120.pdf”, received on 10th March 2020.

NOVA have reviewed in detail the information provided and, in summary, the key amendments that would potentially affect the results of the wind microclimate studies are as follows:

- Removal of the three trees that front Oxford Road adjacent to Plot 2 as shown in the following image provided on 19/03/2019.
- The relocation of the entrances to the Plot 2 retail space.

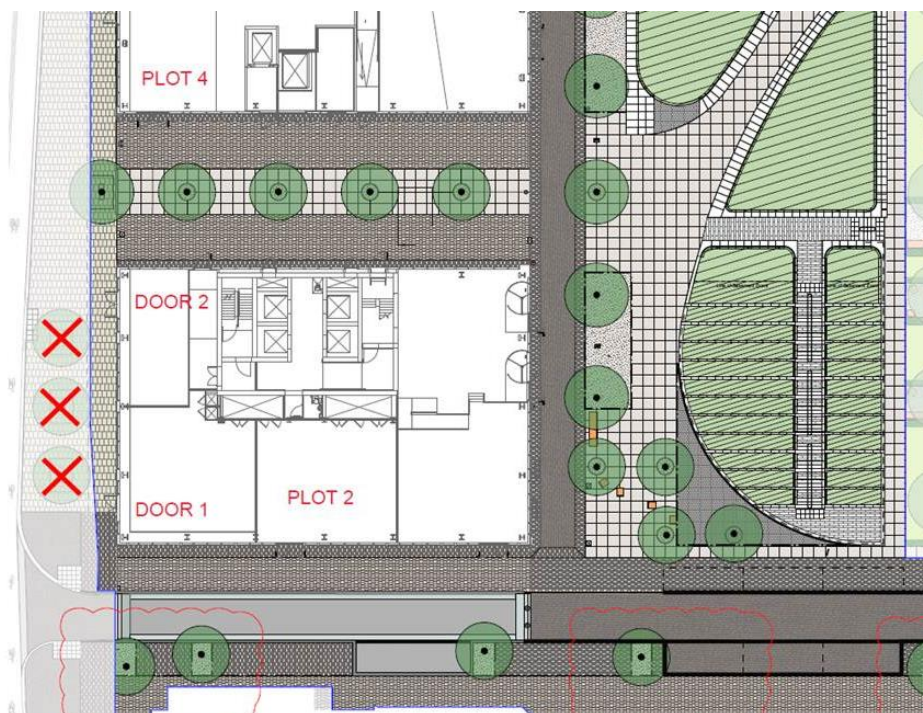


Figure 1: Plan view of the landscaping scheme indicating the trees that have been removed.

The results of the wind tunnels studies for the existing surrounds, with the three trees that front Oxford Road included, indicate that Location 94 (marked in Figure 1) marginally exceeds the comfort criteria for ingress/egress in winter only. Conversely, Location 21 is suitable for the intended use as an entrance throughout the year. Both locations are suitable in terms of pedestrian safety.

Based on a review of the wind tunnel data and the sensitivity of these two locations to elevated winds, in the absence of the three trees it would be expected that Location 21 would remain suitable for the intended use as an entrance, although conditions would likely be close to the threshold in winter with the potential for a marginal exceedance of the comfort criteria. Correspondingly, wind conditions at Location 94 would be expected to further deteriorate, becoming suitable for leisurely thoroughfare at best throughout the year and thus potentially unsuitable as a main entrance. However, it is noted that the main entrance to the retail unit has been relocated to the south-east façade of Plot 2 in a location that was assessed in the wind tunnel as being suitable both in terms of pedestrian safety and comfort, with the entrance on Oxford Road being used as a secondary entrance only. Furthermore, the removal of the trees would only be expected to result in changes to the pedestrian comfort, with both locations remaining suitable in terms of pedestrian safety.

On the basis of NOVA's extensive experience of wind microclimate testing, and having reviewed the amendments in conjunction with the results of the wind microclimate studies, NOVA are happy to confirm the impact of the amendments to the development and landscape scheme on the wind microclimate in and around the proposed site would be limited to the changes in wind conditions at the aforementioned Plot 2 entrances. Otherwise, the conclusions of BMT's original report remain valid.

Should you have any queries or concerns on any of the above, please do not hesitate to contact me.

Kind regards,

David Hankin MEng ACGI PhD MRAeS
Technical Director