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Reading Borough Council
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Bridge Street
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25th August 2020

Our Ref. P117633-1003

Dear Mr Markwell

Independent Peer Review of Technical Addenda dated 2020-06-16 and 2020-07-09 (both RWDI Ref# 1901994) relating to Planning Application 200188 at 53-55 Vasten Road, Reading, RG1 8BU

1. Introduction

BRE have been appointed by Reading Borough Council (RBC) to undertake an independent peer review of RWDI report #1901994 and supporting addenda relating to the Pedestrian Level Wind Comfort Assessment of 55 Vasten Road, Reading with particular reference to the following:

- a) Is the level and nature (including the methodology) of information submitted sufficient and proportionate to the proposed level of development sought in this instance?
- b) Is the analysis and conclusion reached by the microclimate report reasonable and robust, set within the adopted local policy context of:
Relevant components of Policies CC3 (Adaption to Climate Change) and CC8 (Safeguarding Amenity) of the Reading Borough Local Plan (Adopted November 2019).
- c) If it is considered that the analysis / conclusions are not reasonable and robust, guidance as to what measures (e.g. alternative mitigation measures) / information would be required to address any concerns raised (if any)?

BRE have provided reviews of the original wind microclimate report including configurations 1 to 3 and of the subsequent report of Configuration 4. These reviews are included in BRE reviews ref P117633-1001 and P117633-1002.

This review considers RWDI Memorandum #1901994 dated 16th June 2020 which provides RWDI responses to the BRE reviews and Memorandum #1901994 dated 9th July 2020 which provides RWDI responses to additional comments raised by RBC.



BRE's Quality Management System is approved to BS EN ISO9001:2008, certificate number LRQ 10000513.

BRE's Environmental Management System is approved to BS EN ISO14001:2004, certificate number LRQ 10000536.

2, RWDI Memorandum #1901994 dated 16th June 2020

This RWDI Memorandum provides RWDI's response to the BRE review of the RWDI Technical Report and Technical Appendix. The table below provides the BRE response to the RWDI Memorandum dated 16th June 2020.

BRE Comments	RWDI Response	Action Required
Technical Report		
The failure by RWDI to consider the upper 20m/s safety threshold. If this threshold is not considered then appropriate mitigation measures cannot be developed. Without this, it will be necessary to carry out a full quantitative assessment of mitigation measures. This could potentially be conditioned by Reading Borough Council.	RWDI consider the '15m/s threshold' (that is winds exceeding 15m/s for more than 0.025% of the time annually) to be the limit for pedestrian safety and the assessment has been conducted as such, with areas expected to have winds exceeding this threshold identified as potential safety concerns and requiring of wind mitigation measures. Exceedance of the higher '20m/s threshold' would necessitate the exceedance of the lower '15m/s threshold' and has therefore inherently been accounted for. Text has been added to the technical report to acknowledge the existence of a higher threshold than that adhered to in the RWDI assessment.	RWDI appear to have misunderstood the BRE comment. The reason for this comment was to point out that the mitigation measures proposed for exceedance of the 15m/s threshold would not necessarily be the same as the mitigation measures required for exceedance of the 20m/s threshold. Therefore exceedances (if any) of the 20m/s threshold must be identified and considered. RWDI have added a comment to the Technical report to acknowledge the Lawson 20m/s threshold. BRE have not seen this report. However, if the assessment considers the potential for exceedance of the 20m/s threshold then no further action is required.
The use of a limited seasonal approach to wind conditions on balconies. This matter results from a fundamental disagreement between BRE and RWDI on best practice. The appropriateness of the RWDI approach needs to be considered by RBC and the developer.	RWDI has extensive experience of microclimate assessments within the administrative bounds of Reading Borough Council (RBC) using this approach.	With regards to wind comfort, Lawson gives no information as to how the effects of seasonality should be calculated and/or interpreted. The Reading Local Plan does not specifically allow or disallow such an approach. Therefore, if RBC are content with this approach then no further action is required
The RWDI response indicates that the wind conditions at the entrance to Sovereign House will remain unsuitable for entrances. This is unacceptable. Appropriate mitigation measures need to be developed to reduce the wind speeds in this area.	Figure 6 and Figure 10 of the Wind Microclimate Technical Report indicate wind conditions at the entrance to Sovereign House would be suitable for sitting and standing use during the windiest season (areas with a green and blue fill respectively). These conditions would be suitable for an entrance location. Wind conditions suitable for strolling use would be located on northern pavement of Vasten Road to the south of the entrance to Sovereign House. While windier	Figure 10 clearly shows a small 'red' area adjacent to Sovereign House which shows 'Uncomfortable conditions', i.e. cyclists or the old and infirmed could potentially be blown over in this area . Such conditions are NOT suitable for entrances, sitting, standing or strolling. The RWDI response does not seem to acknowledge that this 'red' area exists, nor does it offer any specific mitigation measures.

	<p>than in the baseline scenario (Figure 4) These conditions would be suitable for a pedestrian thoroughfare. Further to the above, the assessment has been undertaken devoid of landscaping. As such, the inclusion of existing landscaping west of the entrance to Sovereign House would be expected to provide further shelter to the existing entrance and eliminate walking use conditions in a maintenance space west of the entrance in the context of cumulative schemes.</p>	<p>The RWDI assessment did not include landscaping. It is suggested that the inclusion of additional landscaping to the west of Sovereign House would be expected to provide shelter. However, the area to the west is not part of the planning application.</p> <p>Action required: evidence based mitigation measures must be provided to demonstrate that these unacceptably windy conditions in the surrounding existing public realm can be ameliorated.</p>
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Technical Appendix

<p>The results indicate that the wind conditions at ground level and podium level will be suitable for the intended pedestrian activity at all locations except for the podium café seating area where conditions during the summer in one area will be suitable for standing. It is stated that with the proposed landscaping scheme the conditions would be expected to become suitable for sitting. This has not been demonstrated.</p>	<p>The majority of the café seating area would be suitable for sitting use during the summer season. Standing use conditions at the northern edge of the café terrace are highly localised and would be expected to be eliminated by the introduction of landscaping to reduce mean flow velocity around the Site and the application of any balustrade required for safety on the northern edge of the terrace.</p>	<p>BRE agree that additional landscaping and/or balustrades could provide the required level of mitigation at this windy area. But this has not been demonstrated and no specific mitigation measures are provided.</p> <p>Action required: evidence based mitigation measures should be provided to demonstrate adequate amelioration at this location.</p>
<p>The wind conditions at balcony and terrace level are mainly suitable for sitting during the summer. There are, however, several balconies where the conditions are only suitable for standing use during the summer. Where balconies are provided, then it is reasonable to expect people to be able to comfortably sit out on them during the summer.</p>	<p>Wind conditions suitable for standing use during the summer season are considered acceptable for private amenity space during the summer season, as per RWDI's methodology. This is justified by balconies being mixed use spaces and the space being used for a given activity (e.g. sitting) by the occupant when conditions permit. Communal amenity space is required to have a more stringent sitting use during the summer season.</p>	<p>The Lawson criteria do not include balconies; therefore it becomes a matter of judgement regarding acceptable conditions. The RWDI criteria are more relaxed than used by most other wind consultancies. It is BRE's opinion that people have an expectation that balconies will be suitable for sitting. The RWDI assessment shows that several balconies will not meet the Lawson criteria for sitting at any time during the year (including summer). According to BRE's interpretation of the Lawson assessment methodology it is likely that occupants will perceive the wind conditions on these balconies to always be windy; complaints may therefore be made about the wind conditions on these balconies.</p>

		<p>It is BRE's opinion that all balconies should, as a minimum, have wind conditions suitable for long term sitting during the summer season. Consequently, BRE would assess a number of balcony conditions as being unsuitable for their intended purpose.</p> <p>Action required: For reasons given above, BRE cannot "require" action. Nevertheless we believe that further mitigation is required at several balcony locations. Such measures might include raising the balustrade height, adding side walls, fully enclosing the balcony, or the developer marketing these units as having windy balconies. If features are added to mitigate the balcony wind conditions, then the efficacy of these features should be demonstrated</p>
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3, RWDI Memorandum #1901994 dated 9th July 2020

This RWDI Memorandum provides RWDI's response to the BRE review of the RWDI Technical Report and Technical Appendix. The table below provides the BRE response to the RWDI Memorandum dated 16th June 2020.

RBC Comments	RWDI Response	BRE Comment
<p>The justification put forward for not undertaking a full seasonal approach appears to be "RWDI has extensive experience of microclimate assessments within the administrative bounds of Reading Borough Council (RBC) using this approach". I don't consider this to be a particularly constructive response. Perhaps in the first instance you could provide me with such examples determined since the adoption of the Reading Local Plan (November 2019)? At the present time I would revert to my previous response sent to you on 11th June in relation to this matter, which still stands.</p>	<p>It should be noted that the Reading Local Plan adopted in November 2019 identified the requirement to use the guidelines laid out by the Lawson Criteria, but does not provide any further detail. The assessment undertaken conforms to the methodology laid out by Lawson and includes an assessment of winds throughout the year with safety exceedances being presented annually and pedestrian comfort being presented for the windiest season (either winter or spring depending upon individual probe locations) and the summer season, when amenity spaces are expected to be most frequently used.</p>	<p>The limited seasonal approach for wind comfort as used by RWDI does not provide any information on the acceptability of wind conditions during the Autumn and Spring. If the public amenity spaces are unlikely to be used during the Spring or Autumn then a limited seasonal approach is adequate. However, if there is an expectation by RBC or others that these spaces will be used outside of the summer season then the RWDI approach does not provide any information for assessing the suitability of these spaces for other seasons.</p> <p>BRE cannot advise whether the RWDI approach is appropriate for</p>

	The utility of presenting dot plots for four seasons for pedestrian comfort is a long standing difference of opinion between RWDI and BRE and acknowledged (prior to this point) by both parties as not materially impacting the outcomes of the assessment.	this development because we have no knowledge of the intended use of the public amenity spaces outside of the summer season.
In terms of the area around the café, the RWDI response states "The majority of the café seating area would be suitable for sitting use during the summer season. Standing use conditions at the northern edge of the café terrace are highly localised and would be expected to be eliminated by the introduction of landscaping to reduce mean flow velocity around the Site and the application of any balustrade required for safety on the northern edge of the terrace." I would have expected this to have been actually demonstrated through the provision of plans to evidence the actually proposed mitigation measures? I suggest that you consider this further.	A qualitative assessment of the proposed landscaping scheme has been included within the reporting. On demonstrating the mitigation and landscaping measures, it is common that when wind conditions exceed the desired conditions for the intended use by no more than one category, with no instances of safety exceedances, that likely suitability of wind mitigation measures are assessed qualitatively and further quantitative testing of measures is generally not required. In the report we note that the landscape plan referenced within the report as Fig 17 of Appendix B should provide the necessary level of mitigation at this area, and we have not recommended any further measures on top of the proposed landscaping.	A qualitative assessment can be appropriate in some instances to determine the suitability of an area for the intended activity. However, BRE would expect this approach to be used in conjunction with specific additional mitigation measures. RWDI have not proposed any specific mitigation measures for the café seating area. They are relying on the general landscaping to provide mitigation. There is no evidence that the general landscaping will provide adequate mitigation at this specific café location (note in passing that the provision of isolated trees has no significant wind mitigation effect). We would expect adequate wind mitigation to be demonstrated.

4. General Summary

Policies CC3 and CC8 of the Reading Borough Local Plan (Adopted November 2019) state:

CC3: Wherever possible, new buildings shall be orientated to maximise the opportunities for both natural heating and ventilation and **reducing exposure to wind** and other elements.

CC8: 4.1.36 One of the key concerns of planning is to ensure that new development **does not reduce the quality of the environment for others**, particularly where it would affect residential properties. At the same time, **ensuring that new development creates a quality living environment for future residents is also critical**. The policy aims to ensure that existing and **additional residential properties provide an acceptable living environment**, which is a key element of a high quality of life. It is applicable to any type of development.

It is BRE's opinion that the proposed development at 53-55 Vasten Road, Reading, RG1 8BU falls to comply with the above clauses of the Reading Borough Local Plan (Adopted November 2019) for the following reasons:

- The wind conditions in the existing public realm near to Sovereign House in Configuration 3 are shown to be unsuitable for entrances, sitting, standing and strolling and have the potential to blow pedestrians and cyclist over. No adequate mitigation measures are proposed.

- The wind conditions on several balconies are shown to be unsuitable for sitting throughout the year. Whilst balconies fall outside of the Lawson Criterion, BRE would expect balconies to be suitable, as a minimum, for sitting during the summer months.

It is a CC8 requirement '*that new development creates a quality living environment for future residents is also critical*'. No mitigation measures are proposed by RWDI for these balconies, despite their assessment that they are not suitable for long-term sitting in any season (including summer). If further wind mitigation measures are not provided at these balconies (such as those suggested earlier), an approach suggested in the footnote ¹ might be considered by the developer.

- The wind conditions at the open-air café are unsuitable for sitting in one area. No specific mitigation measures have been proposed or assessed.

Until the above issues are adequately addressed, it is BRE's recommendation that planning approval should not be granted.

Yours sincerely



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¹ A solution could be to market these apartments as having balconies that are windy and generally unsuitable for sitting. Purchasers can then make an informed decision. This might preclude complaints about windy balcony conditions.