

HGY/2022/3851: Plot D (Ashley Road West) Condition D6 (Marketing Suite) Overheating – 17.07.23

Ref	LBH Comment (12/05/23)	Responses
1	It is not clear which weather file for London is used for the analysis. Redo the overheating modelling with the Central London weather file (based on CIBSE TM49), which will more accurately represent the urban heat island effect. Please follow Haringey's key overheating requirements (please follow this link to the summary document).	Completed - see Section 4.1 Weather data
2	The input values for building fabric used for the overheating analysis does not match with the proposed non-residential fabric specifications: U-values and air tightness. Please redo the analysis with appropriate and robust input specifications, or outline where and why changes have been made. - Set out the thermal mass assumption, and thermal elements performance (u-values, g-value) of proposed fenestration, air tightness and ventilation strategy. - Detail specification of the proposed mechanical ventilation (efficiency and air changes)	Completed - see Section 4.4 Building Fabric
3	Model the zones without active cooling and with mitigation measures that follow the cooling hierarchy to reduce the cooling demand first. The applicant must demonstrate that the risk of overheating has been reduced as far as practical and that all passive measures have been explored, including reduced glazing and increased external shading.	N/A – The building is already built and systems are installed. Therefore, we are unable to make any suggestions or assess potential passive/active measures for overheating mitigation that were or could have been considered at design stage. In this respect we cannot satisfy this comment
4	Specify the shading strategy, including: technical specification and images of the proposed shading feature (e.g. overhangs, Brise Soleil, external shutters), elevations and sections showing where these measures are proposed. Internal blinds cannot be used to pass the weather files, but can form part of the delivered strategy to reduce overheating risk for occupants (as long as it does not compromise any ventilation requirements).	N/A – The building is already built and systems are installed. Therefore, we are unable to make any suggestions or assess potential passive/active measures for overheating mitigation that were or could have been considered at design stage. In this respect we cannot satisfy this comment

5	Undertake further modelling: - Model the 2020s DSY 2 and 3 and DSY1 for the 2050s and 20280s. Ensure the design has incorporated as many mitigation measures to pass these more extreme and future weather files as far as feasible. Any remaining overheating risk should inform the future retrofit plan. - Any communal corridors, where pipework runs through;	Completed – see Section 4.1 Weather data, Section 5 Results and Appraisal, and Appendix A																																																																								
6	Specify the active cooling demand (space cooling, not energy used) on an area-weighted average in MJ/m ² and MY/year? Please also confirm the efficiency of the equipment, whether the air is sourced from the coolest point / any renewable sources.	Please, refer to M&E drawings - “Marketing Suite Combined Mechanical Services – TH-ARM-01-001-M-5079-50-116 AF for AC schedule, location and efficiencies. <table><thead><tr><th>Demand (kWh/m²)</th><th>Actual</th><th>Notional</th><th>Reference</th></tr></thead><tbody><tr><td>Heating</td><td>14.96</td><td>11.64</td><td>42.54</td></tr><tr><td>Cooling</td><td>96.42</td><td>70.70</td><td>33.51</td></tr><tr><td>Auxiliary</td><td>3.80</td><td>3.86</td><td>2.86</td></tr><tr><td>Lighting</td><td>53.90</td><td>71.01</td><td>104.73</td></tr><tr><td>DHW</td><td>10.21</td><td>10.21</td><td>10.21</td></tr><tr><td>Equipment</td><td>26.57</td><td>26.57</td><td>26.57</td></tr><tr><td>Displaced Electricity</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>Total</td><td>205.84</td><td>193.98</td><td>220.41</td></tr></tbody></table> <table><thead><tr><th>Consumption (kWh/m²)</th><th>Actual</th><th>Notional</th><th>Reference</th></tr></thead><tbody><tr><td>Heating</td><td>3.57</td><td>5.78</td><td>58.26</td></tr><tr><td>Cooling</td><td>12.70</td><td>18.66</td><td>14.89</td></tr><tr><td>Auxiliary</td><td>3.80</td><td>3.86</td><td>2.86</td></tr><tr><td>Lighting</td><td>51.20</td><td>67.46</td><td>104.73</td></tr><tr><td>DHW</td><td>10.21</td><td>11.22</td><td>22.68</td></tr><tr><td>Equipment</td><td>26.57</td><td>26.57</td><td>26.57</td></tr><tr><td>Displaced Electricity</td><td>0.00</td><td>0.00</td><td>0.00</td></tr><tr><td>Total</td><td>108.04</td><td>133.53</td><td>229.99</td></tr></tbody></table>	Demand (kWh/m ²)	Actual	Notional	Reference	Heating	14.96	11.64	42.54	Cooling	96.42	70.70	33.51	Auxiliary	3.80	3.86	2.86	Lighting	53.90	71.01	104.73	DHW	10.21	10.21	10.21	Equipment	26.57	26.57	26.57	Displaced Electricity	0.00	0.00	0.00	Total	205.84	193.98	220.41	Consumption (kWh/m ²)	Actual	Notional	Reference	Heating	3.57	5.78	58.26	Cooling	12.70	18.66	14.89	Auxiliary	3.80	3.86	2.86	Lighting	51.20	67.46	104.73	DHW	10.21	11.22	22.68	Equipment	26.57	26.57	26.57	Displaced Electricity	0.00	0.00	0.00	Total	108.04	133.53	229.99
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The table above indicates cooling demand as 96.42kWh/m² which is equal to 347.11 MJ/m² . See Tubular Comparison Report attached.

The table below shows the Heating + Cooling demand in MJ/m². 400.93MJ/m² which converted to 111.37 kWh/m². See BRUKL report.

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	400.93	296.39
Primary energy* [kWh/m ²]	243.88	295.44
Total emissions [kg/m ²]	41.2	51.7

* Primary energy is net of any electrical energy displaced by CHP generators, if applicable.