**This table sets out the comments made by the London Borough of Camden on the 28th June 2022 and the O2 Masterplan Site Team response**

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| **Issue no.** | **Comment** | **Response** |
| 1 | A carbon offset is required for the detailed planning areas of £755,250 for the residential areas and £72,960 for the commercial areas. Total carbon offset required for Plots N3-E, N4 and N5 = £828,210 | Noted - a formula shall be set out in the S106 to capture the carbon offset required. |
| 2 | The overall carbon reduction for the commercial areas does not quite meet the minimum 35% on site carbon reduction target. Further measures should be considered to ensure the target is met | The objective of London Plan SI 2 is that the overall on-site minimum carbon reduction target is 35%; not individually for residential and commercial areas. Overall site wide, the detailed planning permission areas achieve 66% on site carbon emission reduction, far exceeding the 35% target. |
| 3 | It is proposed that the outline planning application areas will meet the current carbon emission targets. However given the long time scale for the proposals, the need to reduce carbon emissions to net zero in Camden by 2030, the continual improvement in technology, decarbonisation of the grid and changes to building regulations, then it is not expected that the current requirements would represent good practice at the time of development for the future plots. Therefore the CO2 targets that are likely to be in place at the time of submission of the reserved matters application should be considered to ensure that the scheme can meet any higher planning or regulatory targets. | Future phases of development, depending on when they are actually realised, will be covered by the future Building Regulations applicable at the time. We would agree with the above general approach, and expect that buildings will need to meet improving future targets set. |
| 4 | Further consideration of WWHR required | WWHRs have been considered throughout the apartment types but have not been incorporated due to:  – the practical design consideration of pipework crossing apartments and necessity for access through another apartment/ demise;  – desire for flexibility in location of apartments with Part M requirements – so not just fixed to one location within the development;  – health and safety consideration of increased risk of legionella due to greater duration of warm water in pipework; and  – cost viability – the proposed development has exceeded the minimum 10% energy efficiency reduction at Be Lean. Additional fabric improvements as shown above, and energy efficient building services systems and measures as detailed in the energy strategy have been pursued instead of incorporating WWHR systems. |
| 5 | The indicative spatial provision for a future heat network in Appendix I is welcomed. Safeguarding of this route between buildings and to the boundary closest to the expected route of a future network, details of soft points and safeguarded plant room are required. A development of this size should be looking to establish a heat pump led DHN. Engagement with an ESCO is encouraged. ACTION: Further information required. As a minimum a feasibility study should be conditioned. | Safeguarded pipe route with soft points are proposed to be provided along with cross section spatially in attached utilities layouts. Subsequent to the planning submission, work is ongoing to coordinate this across the site. However, in order to connect to a district heating system, a full retrofit of the systems and building would be needed. Space internally for heat exchangers would be allocated at this point in the future.  As stated in the Section 8.3.2 of the energy strategy, ambient loop energy sharing network summary, the highest energy sharing potential from such a system would be expected where the commercial mix is highest, (Phase 4) and will therefore be explored in detailed design stages. Earlier phases of development have a low benefit from energy sharing due to being predominantly residential.  The procurement route of heating systems is a subject of ongoing discussion – ESCOs are one option. |
| 6 | A detailed feasibility study of potential ground, sewer source and waste source heat should be provided. Subterranean constraints are stated but not explained. | The development is heating-led, and therefore not suited to year round drawing of heat from the ground, which may result in lowered ground temperatures. Reclaiming waste heat from sewers is an emerging technology, not market ready or proven technology on a commercial scale, therefore not suited to the development. |
| 7 | Decentralised ASHP with domestic hot water electric top up has been recommended for the domestic areas and VRF for the commercial but few details have been provided. A non-combustion system is welcomed but further details are required | Please advise what further information is required |
| 8 | 645m2 of Solar PV proposed. Further information required to show PV has been maximised. PV should be combined with green / blue roofs | PV will be located on all green/brown roof areas where there is sufficient solar irradiation. Amenity areas on the lower roofs aren't detailed yet, but are intended to be fully accessible spaces for residents to use. PV will be considered as part of the fitout |
| 9 | To ensure continued reporting a condition is recommended | Noted |
| 10 | It is concerning that only 86% of the sample dwellings meet the criteria. Given the prevalence of single aspect or corner flats (rather than dual aspect) further passive measures such as external shading should be fully explored. Air tempering for those units with proven acoustic issues is acceptable but no details have been provided of the units which will require this. If active cooling is proposed due to justified acoustic reasons then two separate overheating analyses; one with openable windows and one with closed windows should be provided to ensure that passive measures have been maximised and the façade design has been optimised. | The Applicant is working towards 95%.  The TM59 analysis undertaken has carried out extensive testing of passive design strategies:  – Studio apartments have been relocated so that they are not west facing, to reduce the build-up of heat before sleeping hours.  – Reduced glazing areas were tested, however the proposed windows are the result of ensuring good internal daylight levels are balanced with solar gain control, and also aligned with the architectural design intent.  – Window openable areas have been maximised to enable natural ventilation when air quality and acoustic levels on site are within comfortable levels for occupants.  – Glazed areas have been recessed to provide external shading  – Light coloured, internal blinds have been included in the base building specification.  – Greater mechanical ventilation rates (with windows closed) are understood to have little effect: On a previous similar residential project, ventilation rates of up to 0.3 m3/s were tested with additional shunt fans. Results showed that from the practically achievable ventilation rates tested, any ventilation rates over 0.1 m3/s, demonstrated marginal improvement. The 100 l/s can be provided by the single MVHR units currently proposed within each dwelling.  – Lowering the g-value only had a moderate effect due to the shading already provided by internal blinds, and therefore was not pursued. The proposed g-values are selected to provide a balance between controlling solar gain and providing good internal daylight levels.  – External shutters with free area for ventilation when shut have been explored however shutters are not proposed due to architectural aesthetics and concerns over long-term maintenance issues  – It is also important to note that as the external ambient temperatures in the London DSY1 weather file exceed 26°C for 2.7% of annual hours, there is very little margin (0.3% of annual hours) left as flexibility. Once unavoidable internal heat gains are included in the model (cooking, lighting, people, small power equipment), it can therefore be expected that rooms will quickly exceed the threshold in a dynamic model  – Allowing for secure night ventilation with a restrictor on openings allowing for 15% free area improves the result so that 95% of the assessed spaces meet the thermal comfort criteria for DSY1. Windows will be closed when external noise levels exceed acoustic comfort.  Therefore passive design measures are deemed to have been applied as far as technically feasible  Please refer to acoustic report submitted with planning for details on which apartments do not meet acoustic criteria. The majority of apartments do not meet both day and night time acoustic comfort levels, meaning occupants are likely to choose to close their windows to achieve acoustic comfort.  Additionally, where dwellings are constrained by acoustic conditions or air quality, making occupants less likely to rely on opening windows for managing internal temperatures, air tempering will be provided to lower peak internal temperatures and mitigate the risk of overheating with windows closed. No active cooling is proposed, therefore two separate analyses are not required. |
| 11 | Water use of 105l/p/d for the residential areas should be conditioned |  |
| 12 | The Pre Assessment Summary states that the proposals are targeted to achieve 80.4% (excellent) which would meet the requirements. However no breakdown is provided for Energy, Water or Materials. I was unable to locate the Pre Assessment report. To determine if the requirement of 60% for Energy, 60% for Water and 40% for materials are achieved. ACTION: Further information required. | See attached the BREEAM Pre-assessment which outlines the credits targeted under all categories, including Energy, Water and Materials. The requirement of 60% for Energy credits, 60% for Water credits and 40% for Materials credits is being targeted through baseline and medium risk credits as follows:  - Energy: 69%  - Water: 100%  - Materials: 86% |
| 13 | Figure 13-3 refers only to modules A1-A5 which meet the benchmark but not the aspirational benchmark. Figures for Module B1-B5 and C1-4 are not shown in the graph. Table 13-1 shows the overall estimated emissions which indicates that the benchmark is not met for the Modules B-C (excluding B6&B7) with 428kg.CO2e for modules B1-5 and 9kg/co2e for modules C1-C4 against a bench mark of 350. This is stated to be in part due to the impact of refrigerant leakages on B1 emissions. In addition B2 and B3 and B5 information is not included in the estimates. Further information and consideration of ways to reduce the WLC of these modules is required. ACTION: Further information required | - The results from the whole life carbon analysis showed that the current design of the development would achieve a result between the baseline and aspirational benchmarks, when considering an overall A1-C4 (excl. B6 & B7) picture, ~1029.4 kg.CO₂ₑ/m².  - The B1-C4 emissions captured in the project have been updated to capture the B2 and B3 emissions, through using the GLA’s methodology from the guidance released in March 2022. These have been estimated to represent a minor overall change of ~13 kg.CO₂ₑ/m². B5 emissions remain not included as there is no expectation for refurbishment on the proposed development. The overall B1-C4 result now captures additional emissions from B2 and B3 and therefore has resulted in higher B1-C4 emissions, ~449.3 kg.CO₂ₑ/m².  - The high results for the B1-C4 emissions compared to the benchmark have been driven by:  o B1 emissions – which are associated to refrigerant leakage emissions due to the type of system being used.  o B4 emissions – which are associated to the replacement of materials and products.  - Proposals for ways in this could be reduced in the coming design stages include:  o Review of refrigerant type and charge within the systems at coming design stages. By using less of a refrigerant or a refrigerant with a lower GWP emission intensity, would allow for the B1 emissions from the proposed design to reduce.  o Application of manufacturer specific product lifespans opposed to generic element estimations. For this assessment RICS Professional Statement figures on element lifespans have been assumed. It is expected that for certain elements that using manufacturer specific data on lifespans would reduce the total B4 emissions   E.g. RICS considers a 30 year lifespan for façade elements and internal walls, however according to many manufacturer’s information, precast concrete façades have a guaranteed lifespan of 50 years, and according to the Concrete Block Association blockwork internal walls have a lifespan of 100 years.  o Careful selection of product. Efforts will be made to ensure the design team and contractors agree on the use of materials and products that have both long lifespans, as well as low initial A1-A5 emissions. This will further contribute to reducing B4 emissions.  o Development of good maintenance schedules. As the development is build to rent, the developer will remain on site and ensure good maintenance schedules, helping to extend the lifespans of system and reduce the impact on B4 emissions |
| 14 | Whilst pre demolition audits are proposed they have not yet been undertaken. These are encouraged at pre app and required at outline and reserved application stage and is therefore required. ACTION : Further information required | See attached Pre-demolition Audit |
| 15 | A commitment is made to achieving 95% reuse or recycling of demolition and construction waste and at least 95% of excavation waste put to beneficial use. ACTION: Condition recommended |  |