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| Memo: Air quality consultation Stage 1 |
| **2022/0003/S1**  **10th March 2022**  **Murphy's Yard, Kentish Town NW5**  **London Borough of Camden** |

**To (Case Officer):** Andrew Payne

**From:** Sarah Legge, SLH Environmental Ltd.

**Applicant:** Folgate Estates Limited

**Air Quality Consultant:** Air Quality Consultants Ltd

**Document Title:** Volume 1: Environmental Statement, Chapter 8: Air Quality & Appendix: Air Quality

**Document Date:** June 2021

**Proposal**

*“Outline planning permission with all matters reserved for the demolition of existing buildings and structures and redevelopment to be carried out in phases (with each phase being an independent act of development) comprising the following mix of uses: residential (Use Class C3), residential institution (Use Class C2), industrial (Use Class B2 and/or B8), commercial floorspace (Class E), flexible commercial and Sui Generis floorspace (Use Class E and/or Sui Generis Use), Community (F1 and/or F2), Sui Generis, and cycle and vehicle parking, refuse and recycling storage, plant, highway and access improvements, amenity space, landscape and public realm improvements, and all associated works.”*

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| **Use** | **Floorspace/Number of units** |
| Maximum Residential (C3)  including ancillary areas | 825 dwellings  87,400 m2 |
| Maximum Non-Residential Uses | 7,668 m2 |

**Policy Review**

1. The Air Quality Assessment (AQA) is generally of sufficient technical quality and uses recognised and accepted methodologies for assessing the air quality impacts of the proposed development, but there were inconsistencies and omissions, particularly around traffic data which give concern.

The AQA identifies construction traffic and construction activities as potential sources (note there are no planned building emissions and operational traffic is screened out).

* 1. The AQA modelled the construction traffic (but in isolation, with no baseline traffic flow, and no traffic data reported) and concluded that the impacts from the construction traffic are not significant. This unconventional approach is unlikely to affect the conclusions in this case but should have been justified and construction traffic data provided.
  2. The AQA considered the impacts of construction activities in detail for each phase of construction. The AQA recommends that where different phases have different risk levels, mitigation for the highest risk phases be applied to all other phases as a precautionary measure. On this basis, the development is a High Risk site for demolition, Medium Risk for earthworks, construction and trackout for dust soiling (with a lower risk for human health impacts).
  3. The AQA also assesses the impact of existing air pollution on introduced receptors from the railway (screened out as insignificant) and local roads. However, there are inconsistencies in which road links were modelled, the traffic data and model verification. It is not clear whether this is an error in the report text or, more problematically, in the underlying modelling. Clarification is required in order to give confidence in the results.

1. The development is air quality neutral (London Plan Policy SI 1 (B) (2a).
   1. The Air Quality Neutral assessment was based on emissions from operational transport trips. No building emissions are proposed.
   2. Both building and transport emissions met the benchmarks for a development of this size. So, no offsetting or mitigation measures are proposed from this (London Plan Policy SI 1 (E)).
2. The development is likely to be compliant with London Plan policy (subject to the data issues above)
   1. It is unlikely to have adverse impacts on air quality – London Plan Policy SI 1 (B).
   2. It meets EV parking standards London Plan Policy T6/T6.1 to T6.5.
   3. The development is not located near an Air Quality Focus Area, AQFA (London Plan Policy SI 1 (B) (2d)).
3. The development should consider the following steps to make the development acceptable
   1. Mitigation measures (and PM10 monitoring) for construction activities and NRMM are required to ensure that the impact of this site is not significant.

**Recommendations**

Further information is required to determine compliance with London Plan air quality policies. It is anticipated that, subject to clarification around the traffic modelling, this development is likely to be compliant with London Plan air quality policies.

The following conditions are recommended and should be secured by s106 / legal agreement:

1. On-site plant and machinery must comply with the London Non-Road Mobile Machinery (NRMM) Low Emission Zone standards (London Plan Policy SI 1 (D)).
2. Measures to control emissions during the construction phase relevant to a High Risk site for demolition, Medium Risk for earthworks, construction and trackout should be written into an Air Quality and Dust Management Plan (AQDMP), or form part of a Construction Environmental Management Plan, in line with the requirements of the Control of Dust and Emissions during Construction and Demolition SPG. The AQDMP should be approved by the LPA and the measures and monitoring protocols implemented throughout the construction phase (London Plan Policy SI 1 (D)).

**Appendix – Detailed Air Quality Assessment Review**

The Air Quality Assessment (AQA) is generally of sufficient technical quality and uses recognised and accepted methodologies for assessing the air quality impacts of the proposed development.

The AQA identifies the operational traffic, Construction traffic and construction activities as potential sources (note there are no planned building emissions).

It also assesses the impact of existing air pollution on introduced receptors from local roads and the railway. However, there are inconsistencies in the reported methodology. Clarification is required over which road links were modelled, in order to give confidence in the results.

**Operation**

No emissions are considered from the final development as traffic levels will be reduced, and “the Proposed Development will not include any centralised combustion energy plant or back-up life safety generator plant”.

In addition to new potential sources, the development will introduce sensitive receptors into an AQMA. The impact of existing air pollution from traffic and the nearby railway was considered for these new receptors.

The AQA concluded that future residents will experience acceptable air quality.

However there is confusion around which road links were modelled and the traffic data.

* The roads listed in Table A6.2 do not fully match the roads shown in Figure A6.1. This may be an error in the report, not the modelling. If Figure A6.1 is correct, all relevant roads are included. If Table A6.2 is correct, the modelling omits several important roads.
* It appears that the AQA did not included all the modelled roads for the verification modelling, as it only lists traffic data (in Table A6.4) for the two closest roads to the monitoring stations, which would not be a valid way to verify the modelling.

It is not clear whether this is an error in the report or, more problematically, in the underlying modelling. Further clarification is needed to give confidence in the results.

The traffic data used in the AQA (where stated) was not listed in the Transport Assessment, so consistency could not be checked.

The AQA includes a sensitivity test, at LBC’s request, looking at impacts if there is no reduction in traffic emissions or mapped background concentrations. Air pollution concentrations were still below the objectives at the new receptors.

The impact of the nearby railway on the new receptors was scoped out, based on Defra guidance.

**Construction Traffic**

The AQA modelled the construction traffic, but in isolation, with no baseline traffic flow. It is unclear why this approach was used.

No data on construction traffic flows and traffic split is included in the AQA, just a map (Figure A6.6) showing the modelled links and speeds, so no judgement can be made on whether this is data is consistent or appropriate.

The AQA concluded that the impacts from the construction traffic are not significant. Given the very low predicted impacts (below 0.5% of the relevant objectives), this is likely to be true, but this unconventional approach should have been justified.

**Construction Activities**

The AQA considered the impacts of construction activities in detail for each phase of construction.

The development is:

* a High Risk site for demolition for dust soiling for all phases (it is Medium Risk for human health impacts);
* Medium Risk for earthworks for dust soiling for Phase 1 & 2 and High Risk site for phase 3 & 4 (& low risk for human health impacts in all phases);
* Medium Risk for construction for dust soiling for Phase 1 & 2 and High Risk site for phase 3 & 4 (& low risk for human health impacts in all phases);
* Medium Risk for trackout for dust soiling for all phases (it is low risk for human health impacts).

There was an error in Table 8.8, but this does not appear to affect the conclusions:

* When assessing the demolition, Table 8.8 states demolition has a Medium Dust Emission Magnitude, when it should be Large.
* The AQA states there will be on-site crushing, which according to guidance indicates demolition has a Large Dust Emission Magnitude Class, not a Medium Class. (The total building volume (to be demolished) is commonly used to assess the Dust Emission Magnitude Class for demolition, but this is not stated in the AQA.)
* However, the rest of the process, and the conclusions are correct, with the Risk of Impacts without Mitigation based on a Large Dust Emission Magnitude.

Construction activity measures are proposed. The AQA recommends that where different phases have different risk levels “it is recommended that the increased level of mitigation required for the high risk phases be applied to all other phases as a precautionary measure.” This is a robust recommendation and it would be good to see a commitment on this.

The AQA lists mitigation measures which should be used to ensure that no significant impacts occur. Monitoring is also highly recommended to ensure the residual impacts are not significant. These measures should be secured as a planning condition in line with GLA guidance.

The Non-Road Mobile Machinery, NRMM, was not considered in the AQA. A condition is recommended to ensure these do not have a significant impact.

**Air Quality Neutral**

An air quality neutral assessment was undertaken, covering transport emissions (no building emissions are proposed). As the Proposed Development is currently in outline only, the gross internal floor areas of each land use class are not known; therefore, AQA uses a pessimistic assumption for each use class. The AQA concluded that the development was Air Quality Neutral.

**Minor Issues**

Further information would have been useful in parts of the AQA. These omissions are unlikely to change the conclusions.

* The extent of the impacts was not discussed, and no isopleth map was included. This would have been helpful in clarifying the confusion around traffic data flagged above.
* Amenity spaces are not considered in the AQA.
* The LLAQM is not discussed in the AQA.

**Stage 1**

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| **The model** | **Response needed** |
| 1. ***Application details:*** | |
| * 1. Is the floor space/GIA (split by use class where applicable) correct/the same as stated on the application form? | Yes, where available. As the Proposed Development is currently in outline only, the gross internal floor areas of each land use class are not known; therefore, AQA uses a pessimistic assumption for each use class. |
| * 1. Is the layout of the development proposed the same as in the AQA (especially any buildings included in the model, but also amenity spaces, location of sensitive uses etc)? | Yes.  Amenity spaces are not considered in the AQA. |
| * 1. Are all new parking spaces, new roads and new bus stops etc included in the model? | No, the proposed final development was not modelled, except as new receptors to assess the impact of existing air pollution. |
| * 1. Is the modelled stack location and height shown on the plans? (where a plant room is included) | Not applicable, there is no stack proposed for this development. |
| * 1. Have other new emissions sources been identified (such as new industrial sources, vents and discharges, NRMM, vessels/boats etc)? | Yes. The AQA identifies construction traffic and construction activities as potential sources of pollution.  No emissions are considered from the final development as traffic levels will be reduced, and “the Proposed Development will not include any centralised combustion energy plant or back-up life safety generator plant”.  Note, the development will introduce sensitive receptors into an AQMA. The impact of existing air pollution from traffic and the nearby railway was considered for these new receptors. |
| * 1. Have any new emissions sources or receptors been scoped out, and is this justified? | Yes. The impact of the nearby railway on the new receptors was scoped out, based on Defra guidance. This conclusion is robust. |
| 1. ***Baseline model:*** | |
| * 1. Has a suitable baseline year been chosen? | Yes, 2019. |
| * 1. Are all relevant local roads included, and have appropriate traffic counts/fleet splits and profiles (where applicable) been used?   (Where traffic counts have been included in the transport assessment these should be checked against the AQA) | This is not clear for the Future ‘With development’ scenario, as the roads listed in Table A6.2 do not fully match the roads shown in Figure A6.1. This may be an error in the report, not the modelling.  If Figure A6.1 is correct, all relevant roads are included. If Table A6.2 is correct, the modelling omits several important roads. Further clarification is required.  It is also unclear why they appear to have used a different set of roads for the verification modelling.  It is also unclear why the construction traffic was modelled in isolation, with no baseline traffic flow. There is no data in the report on construction traffic shown in Figure A6.6, so no judgement can be made on whether this is appropriate.  The traffic data used in the AQA (where stated) was not listed in the Transport Assessment, so consistency could not be checked. |
| * 1. Is queueing and congestion at local junctions appropriately modelled? | Yes. Queuing and congestion are not explicitly modelled but their impacts are included within the model inputs, notably speed and location of receptors. |
| * 1. Is local geography properly taken into account (street canyons, raised or lowered roads | Yes. Street canyons are included in the modelling. Terrain is explicitly excluded. |
| * 1. Have local industrial sources been properly accounted for? | Yes. |
| * 1. Have point sources from other local developments (e.g. CHP systems or DH/CH energy centres) been included? | No, no point sources are not modelled.  The cumulative impacts of traffic from other developments has been included. |
| * 1. Have suitable monitoring sites for verification purposes been identified? Are any monitoring sites scoped out, and is this appropriate? | Yes, 2 diffusion tubes nearest the site. Other diffusion tubes and automatic monitoring sites were identified, their exclusion has been justified in the AQA, and is reasonable. |
| * 1. Has the verification procedure been carried out appropriately (including any fixes to the model)? | This is not clear. It appears that the AQA did not included all the modelled roads for the verification modelling, as it only lists traffic data (in Table A6.4) for the two closest roads to the monitoring stations. The model cannot be verified using different road links.  This may be an error in the report, not the modelling, and the same issue seen in Q2.2. Further clarification is required.  The verification processing after this step is carried out appropriately. |
| 1. ***Future baseline scenario:*** | |
| * 1. Have changes to the traffic emissions been sensibly applied? | Yes, for operational traffic.  In addition, the AQA includes a sensitivity test, at LBC’s request, looking at impacts if there is no reduction in traffic emissions or mapped background concentrations. Air pollution concentrations were still below the objectives at the new receptors.  There is no information on construction traffic. |
| * 1. Have emissions from committed developments within the model area been taken into account? | Yes. The future baseline also includes traffic generated by nearby cumulative developments. |
| * 1. Have committed changes to junctions and road layouts been taken into account? | No, no planned changes are mentioned. |
| * 1. Have any new street canyons or other significant changes to local geography been taken into account? | No, no planned changes are mentioned. |
| 1. ***Future “With development” scenario:*** | |
| * 1. Do traffic changes match the transport assessment? | N/A, the ‘With Development’ scenario is not modelled, as the change in operational traffic is below the screening criteria. Modelling was undertaken to assess the impact of the existing air pollution on the introduced receptors. |
| * 1. Have emissions from energy systems been taken into account? And do they match the requirements of the energy strategy (including profiles where necessary)? | N/A |
| * 1. Have changes proposed to junctions and road layouts as part of the development been taken into account? | N/A |
| * 1. Have any new street canyons or other significant changes to local geography as a result of the development been taken into account? | N/A |
| * 1. Has suitable evidence been included to justify emissions factors for non-transport sources (e.g. technical specs for CHP)? | N/A |
| 1. ***Model outputs*** | |
| * 1. If energy and traffic emissions were modelled separately, have they been combined in a sensible way? | N/A, only traffic emissions were modelled. |
| * 1. Has NOx to NO2 conversion been done appropriately? | Yes. |
| * 1. Have suitable on and off-site receptors been explicitly modelled, and have the results for all receptors been detailed (including receptors at height, mechanical ventilation inlets and amenity spaces)? | Only onsite receptors are modelled, as the proposed development is predicted to have a negligible impact on the surrounding area.  These receptors are assumed to be residential (a worst case assumption) and therefore of high sensitivity. |
| * 1. Has a map been provided to indicate the extent of impacts? | No. |
| * 1. Has an air quality neutral assessment been undertaken? And do the details match the rest of the modelling? | Yes, an air quality neutral assessment was undertaken, covering transport emissions (no building emissions are proposed). Comparable traffic data was not listed elsewhere within the modelling so consistency could not be checked.  As the Proposed Development is currently in outline only, the gross internal floor areas of each land use class are not known; therefore, AQA uses a worst case assumptions for each use class to calculate the benchmark.  There is a typo in Table 8.15 as it states a Benchmark Trip Rate for C3 class per m2, this is actually per dwelling, and is used correctly in the assessment. |

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| **Interpretation of results:** | **Response needed** |
| 1. ***General:*** | |
| * 1. Is the development Air Quality Neutral? | Yes. |
| * 1. Have the impacts at the modelled receptors been categorised in line with IAQM guidance? | Yes. |
| * 1. Has the extent of the impacts been discussed (i.e. not just the number of modelled receptors, but with reference to the isopleth maps as well)? | No, the extent of the impacts was not discussed, and no isopleth map was included. This would have been helpful in clarifying the confusion listed in Q2.2. |
| * 1. Is the development considered acceptable in air quality terms by the developer? | Yes. |
| * 1. Is this conclusion justified in the professional opinion of the reviewers? | Further clarification is required to give confidence in the results.  This conclusion is likely to be appropriate, but there is confusion around the which road links were modelled, the traffic data and verification. It is not clear whether this is an error in the report text or, more problematically, in the underlying modelling. |
| 1. ***Mitigation measures (where provided)*** | |
| * 1. Are any proposed mitigation measures genuinely additional to the “with development” scenario, as modelled? | No, for operation.  Construction activity measures are proposed. |
| * 1. Are proposed mitigation measures appropriate to the problem to be mitigated? | N/A, as no mitigation measures for operation are proposed.  The mitigation measures for construction activity are appropriate. |
| * 1. Has the impact of mitigation measures been estimated, and are they sufficient to address the identified problem? | No. |
| * 1. Are offsetting payments proposed in lieu of mitigation? | No. |
| * 1. Will the mitigation measures need to be secured by condition/s106? | Yes, for construction activities. |
| * 1. Are design changes required to implement mitigation measures? | No. |
| * 1. Is the development (post stated mitigation) acceptable in air quality terms? | Further clarification is required to give confidence in the results.  This conclusion is likely to be appropriate, but there is confusion around the which road links were modelled and the traffic data. It is not clear whether this is an error in the report text or, more problematically, in the underlying modelling. |

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| **Construction/demolition** | **Response needed** |
| 1. ***General:*** | |
| * 1. Have suitable human and ecological receptors been identified? | Yes. |
| * 1. Has a screening assessment been carried out to see if a DRA is needed? | I cannot find a screening assessment, the AQA appears to go straight to the detailed assessment. A screening assessment would have shown a detailed assessment was needed, so this does not change the conclusions. |
| * 1. Has the DRA been undertaken by a suitably qualified person? | Yes. |
| * 1. Has the DRA correctly assessed the Risk of Dust impacts for the demolition phase? | The conclusions are correct, but Table 8.8 states demolition has a Medium Dust Emission Magnitude, when it should be Large, see below. However, the Risk of Impacts without Mitigation are correct, ie based on a Large Dust Emission Magnitude.  The AQA states there will be on-site crushing, which indicates it has a Large Dust Emission Magnitude Class, not a Medium Class. (The total building volume (to be demolished) is commonly used to assess the Dust Emission Magnitude Class for demolition, but this is not stated in the AQA.) |
| * 1. Has the DRA correctly assessed the Risk of Dust impacts for the earthworks phase? | Yes. |
| * 1. Has the DRA correctly assessed the Risk of Dust impacts for the construction phase? | Yes. |
| * 1. Has the DRA correctly assessed the Risk of Dust impacts for trackout? | Yes. |
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| * 1. Has the DRA recommended suitable mitigation measures for the demolition phase? | Yes, for a High Risk site for demolition for dust soiling for all phases (it is Medium risk for human health impacts).  The AQA lists mitigation measures which should be used to ensure that no significant impacts occur. |
| * 1. Has the DRA recommended suitable mitigation measures for the earthworks phase? | Yes, for a:   * Medium Risk for earthworks for dust soiling for Phase 1 & 2. * High Risk site for phase 3 & 4, * (& low risk for human health impacts in all phases).   The AQA lists mitigation measures which should be used to ensure that no significant impacts occur. |
| * 1. Has the DRA recommended suitable mitigation measures for the construction phase? | Yes, for a:   * Medium Risk for construction for dust soiling for Phase 1 & 2. * High Risk site for phase 3 & 4, * (& low risk for human health impacts in all phases).   The AQA lists mitigation measures which should be used to ensure that no significant impacts occur. |
| * 1. Has the DRA recommended suitable mitigation measures for trackout? | Yes, for a Medium Risk site for trackout for dust soiling for all phases (it is low risk for human health impacts).  The AQA lists mitigation measures which should be used to ensure that no significant impacts occur. |
| * 1. Has monitoring been suggested for the site? | Yes, the AQA states:  “The GLA’s guidance suggests that, for a Medium Risk site, automatic monitoring of particulate matter (as PM10) will be required.” |
| * 1. Have construction and demolition measures identified as best in class through the LLAQM been implemented and has the site offered to participate in the LLAQM or similar initiatives? | No. The LLAQM is not mentioned. |

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| **Recommendations** | **Response needed** |
| 1. ***Overall development:*** | |
| * 1. Are there technical issues with the assessment that mean that it cannot be decided if the development is acceptable? | Yes, further clarification is needed on the traffic modelling.  There is confusion around the which road links were modelled, the traffic data and verification. It is not clear whether this is an error in the report text or, more problematically, in the underlying modelling (see Q2.2 & 2.8). It is not clear whether this is an error in the report text or, more problematically, in the underlying modelling. |
| * 1. Can the development as currently proposed be recommended for approval? | No, further clarification is required.  Subject to clarification above, it is likely that the development will be acceptable for air quality (with mitigation conditions). |
| * 1. Are there matters preventing approval that can be addressed with refinements to the development or mitigation measures (i.e. before stage II) | No. |
| * 1. Are there matters preventing approval that cannot be dealt with within the current development? | No. |
| 1. ***Matters to be secured by condition on s106 agreement*** | |
| * 1. Any mitigation measures for the final development that need to be secured by condition or s106? | No. |
| * 1. Any mitigation measures for construction and demolition that need to be secured by condition or s106? | Yes, mitigation measures for construction activities and NRMM.  The AQA recommends that where different phases have different risk levels “it is recommended that the increased level of mitigation required for the high risk phases be applied to all other phases as a precautionary measure.” This is a robust recommendation and it would be good to see a commitment on this. |
| * 1. Any offsetting measures or payments that need to be secured by s106? | No. |
| * 1. Any documents where conformity needs to be secured by the planning permission? | No. |