HOARE LEA

Air Quality Technical Note

To:	Katherine Frost, Senior Sustainability Officer (Planning)
Cc:	Andrew Fry (Acumen) Siofra Boyd (Rolfe-judd)
From:	Kathryn Woolley, Principal Air Quality Consultant (Hoare Lea)
Date:	20 July 2020
Project:	London Irish Centre
File ref:	MEM-1011742-5A-HW-20200720-London Irish Centre_V00.docx

London Irish Centre- Air Quality

This Air Quality Technical Note has been prepared in response to comments raised by Katherine Frost, Senior Sustainability Officer (Planning), at the London Borough of Camden (LBoC) on the Air Quality Assessment (AQA) (reference document title REP-1011742-HW-20200228-London Irish Centre Rev01) prepared by Hoare Lea for the planning application 2020/1481/P. A copy of the comments raised by LBoC is provided in Appendix 1.

This Air Quality Technical Note aims to provide clarification on and further information regarding the items raised by LBoC and a response to each comment has been prepared below.

Response to Comments

LBoC have made three requests for further information. These have been responded to in order and referred to as comments 1, 2 and 3 for ease of reference.

Comment 1:
"Section 1.3 of the AQA states that "an air quality neutral assessment is no longer required in line with the London Plan as there will be only one residential unit comprised of nine bedrooms and 883 m2 of non-residential construction."

Issue 1: The application is for a net increase of 2,815sqm and the development is therefore considered a 'major' development and an AQN assessment is required. ACTION: Further information required"

It has been confirmed by the project's architect, Coffey Architect, that the non-residential floor space is proposed to increase by 1119m^2 (GIA) and a such the Proposed Development can be classified as Major.

The transport consultant, Caneparo Associates, has confirmed that *"the AADT would stay the same. In particular note that the residential element is an ancillary use and shares its refuse / recycling and servicing arrangements with the London Irish Centre. As the site is car free people staying there would use public transport, walk or cycle".* Therefore, the Proposed Development is considered air quality neutral with regard to transport emissions and no mitigation is required.

Additionally, the AQA (reference document title REP-1011742-HW-20200228-London Irish Centre Rev01) states: *"The energy provision for the Proposed Development will be met by Air Source Heat Pumps (ASHPs) for the hot water system and photovoltaic panels which do not release any emissions. Natural gas will only be used for the kitchen appliances. As the only gas use is for the kitchen appliances, the proposed emission rate for this plant is expected to be below the criteria set out in the EPUK/IAQM guidance. As such the impact from combustion plant will be negligible and no mitigation is required."*

As such, the Proposed Development is also considered air quality neutral with regard to building emissions, and no mitigation is required.

Comment 2:

"The scheme is a major development in an area of poor air quality which includes new residential accommodation therefore a detailed air quality assessment is required. Contrary to the summary of background data in 4.7 of the AQA, the London Air map indicates that there is an exceedance of the NO2 limits at the site which in line with APEC C from the London Councils Air Quality and Planning Guidance. As such:

"Refusal on air quality grounds should be anticipated, unless the Local Authority has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures. "

The CPG Air Quality should be followed and specifically it should be noted that "Modelling should not predict improvements to future years (future vehicle emissions or future background concentrations).""

Overall there has been a reduction in annual mean NO_2 concentrations across the monitoring sites in the vicinity of the Application Site between 2014 and 2018. Between 2016 and 2018, concentrations at the two urban background diffusion tube monitoring sites, CA6 and CA10, which are most representative of conditions at the Application Site, reduced from 31µg/m^3 to 27µg/m^3 and from 40µg/m^3 to 35µg/m^3 respectively. Considering that this reduction falls over two years, it can be considered that the reduction in concentrations at the diffusion tube sites will be greater between 2016 and 2021, which is the expected opening year of the Proposed Development. Adding to this, the 2016 LAEI NO_2 concentrations at diffusion tube sites CA6 and CA10 are 45.3µg/m^3 and 45.4µg/m^3 respectively, which are approximately 14µg/m^3 and 5µg/m^3 larger than the monitored concentrations for the same year. Therefore the LAEI predicted NO_2 concentrations for 2016 at the urban background monitoring sites can be viewed as being an overprediction.

As such, it can be considered that the true 2016 NO_2 concentration for the Application Site is lower than the LAEI predicted concentration of 42.6µg/m^3 and that concentrations at the Application Site will decrease between 2016 and the opening year of the Proposed Development in 2021. Therefore, it is not expected that there will be any exceedances of the annual mean NO_2 objective and it can be considered the Proposed Development is not in an area of poor air quality.

Following criteria of assessment in Table 1 of the CPG Air Quality, it can be concluded that only a basic air quality assessment type is required, rather than detailed, given that the development does not bring air quality impacts but does bring sensitive receptors.

Comment 3:

"There are a number of concerns about the predicted magnitude of dust emissions. It is noted that some of the criteria are met for higher potential magnitude (not all the criteria need to be met in each case).

Demolition above 20m would be defined as 'large'.

No mention is made of the demolition material. If concrete then again this would be considered 'large'

Earthworks include are in a potentially dusty soil type and therefore considered 'large' risk of dust

Construction includes potentially dusty concrete and is therefore considered a 'medium' risk

Trackout is of a potentially dusty surface material and is therefore considered 'large'

Therefore the dust magnitude has been underestimated. The assessment should be corrected and appropriate mitigation and monitoring proposed. ACTION: Further information required."

The magnitude of dust emissions from demolition, earthworks, construction and trackout stated in the AQA are still considered to be correct and categorised as Small. We provide our reasoning below.

The Application Site's demolition volume of 7600m^3 is more than 60% below the threshold level used to classify developments as small (20000m^3). As the demolition volume is considerably below the threshold, it can be considered that the amount of dust generated from demolition will remain small despite concrete likely being a material for some part of the demolition and some demolition occurring above 20 m from ground level.

Earthworks at sites with areas below 2500m^2 are classified as small. The Application Site has an area of 1300m^2 which represents approximately half of this threshold level, which is considerably below the threshold and means that there will only be a small amount of earthworks. The soil is also loamy and clayey which means that, in addition to soil particles being small, soil particles are of a medium and large size which have lower potential to be dusty. Therefore it can be considered that the dust emissions due to earthworks would be small.

The Application Site has a construction volume of 12700m^3 which is well below the threshold level used to classify developments as small (25000m^3), again at approximately 50%. As such, the dust emissions from using concrete as a construction material is unlikely to be high enough to cause the overall magnitude of dust emissions to be greater than small.

The Application Site is approximately 45m in length which is less than the threshold level of 50m for small classifications. The soil is also loamy and clayey which means that, in addition to soil particles being small, soil particles are of a medium and large size which have lower potential to be dusty. Therefore when both of these factors are considered, the magnitude of dust from trackout can be categorised as small.

Summary

This Air Quality Technical Note has been prepared in order to respond to the request for further information from the Planning team at LBoC. It is hoped that providing this further information will clarify any air quality concerns raised by LBoC.

It has been confirmed by the project's architect, Coffey Architect, that the Proposed Development can be classified as Major based on the increase in floor area introduced as part of the Proposed Development. Overall the Proposed Development is considered air quality neutral with regard to transport and building emissions, and no mitigation is required.

The NO_2 annual mean concentrations recorded at the two most representative monitoring sites have declined between 2016 and 2018. The LAEI predicted NO_2 concentrations for 2016 at these sites are larger than those monitored and thus can be viewed as being an overprediction. As such, the true 2016 NO_2 concentration for the Application Site is likely to be lower than 42.6µg/m^3 and that there will be a reduction in concentrations. Therefore, it is not expected that there will be any exceedances of the annual mean NO_2 objective and it can be considered the Proposed Development is not in an area of poor air quality. As such, it can be concluded that only a basic air quality assessment type is required, rather than detailed.

It is considered that the magnitude of dust emissions from demolition, earthworks, construction and trackout stated in the AQA are correct.

Appendix 1 – Request for Further Information Raised by LBoC

From: Andrew Fry <afry@acumen-ps.com>
Sent: 30 June 2020 11:09
To: Kathryn Woolley <KathrynWoolley@hoarelea.com>
Cc: Siofra Boyd <siofrab@rolfe-judd.co.uk>
Subject: FW: 2020/1481/P London Irish Centre 50-52 Camden Sq - AQ

[External email]

Kathryn,

See below comments on the London Irish Centre Air Quality assessment from Camden Council.
Please can you confirm receipt of this email and date by which you can respond to the points raised.

Regards,

Andrew Fry
For and on behalf of Acumen Portfolio Solutions Ltd

ACUMEN
PORTFOLIO SOLUTIONS

Project Office Address:
Acumen Portfolio Solutions Ltd, 2nd Floor, 19 Pepper Street, London E14 9RP.
Tel: 020 7537 6320
Mobile: 07887 492 702

From: Frost, Katherine <Katherine.Frost@camden.gov.uk>
Sent: 26 June 2020 16:44
To: Smith, Kristina <Kristina.Smith@camden.gov.uk>
Cc: Berry-Khan, Gabriel <Gabriel.Berry-Khan@camden.gov.uk>
Subject: 2020/1481/P London Irish Centre 50-52 Camden Sq - AQ

Dear Kristina

Thank you for consulting us on Energy and Sustainability for 2020/1481/P London Irish Centre 50-52 Camden Sq. There is currently insufficient information and therefore **further information is required** as is set out below.

I have considered the following:

- Air Quality Assessment by Hoare Lea 28 February 2020

Summary:
Whilst the proposals for a non-combustion heating solution are welcomed there are a number of concerns with the AQA including

- A missing Air Quality Neutral Assessment
- Requirement for detailed modelling with appropriate mitigation to maintain internal air quality,
- An underestimation of the potential dust risk during demolition and construction and therefore additional mitigation required.

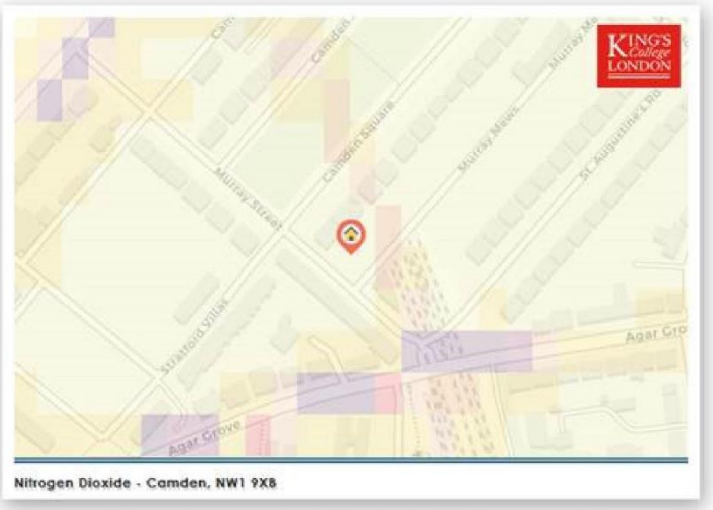
Operational impact of development on local area:

Comment: The traffic will be similar to the existing building and therefore there will not be any significant impact on air quality
Comment: Non-combustion heating by ASHP is proposed which is welcomed.

AQ Neutral assessment:
Section 1.3 of the AQA states that " an air quality neutral assessment is no longer required in line with the London Plan as there will be only one residential unit comprised of nine bedrooms and 883 m2 of non-residential construction."

Issue 1: The application is for a net increase of 2,815sqm and the development is therefore considered a 'major' development and an AQN assessment is required. **ACTION: Further information required**

PREVIEW



This map was used with permission from The Greater London Authority and Transport for London, who fund, develop and maintain the London Atmospheric Emissions Inventory. For more information please visit data.london.gov.uk

EU ANNUAL MEAN LIMIT VALUES

- NO2 is 43 µg/m³ exceeding the EU limit of 40 µg/m³
- PM10 is 24 µg/m³ passing the EU limit of 40 µg/m³
- PM2.5 is 14 µg/m³ passing the EU limit of 25 µg/m³

For more information please refer to the 'National air quality objectives and European Directive limit and target values for the protection of human health'.

WHO ANNUAL MEAN LIMIT VALUES

- NO2 is 43 µg/m³ exceeding the WHO limit of 40 µg/m³
- PM10 is 24 µg/m³ exceeding the WHO limit of 20 µg/m³
- PM2.5 is 14 µg/m³ exceeding the WHO limit of 10 µg/m³

For more information please refer to the 'World Health Organization - Ambient (outdoor) air quality and health'.

Operational impact on occupants:

3.4.4 Camden Air Quality CPG

Following the criteria of assessment triggers in Table 1 of the Camden Air Quality CPG, it has been determined that a detailed air quality assessment is not required and that a screening assessment should be undertaken based on the scale of the Proposed Development and the sensitivity of the area. This screening assessment will determine the significance of air quality impacts arising from the operation of the Proposed Development.

Issue 2: The scheme is a major development in an area of poor air quality which includes new residential accommodation therefore a detailed air quality assessment is required. Contrary to the summary of background data in 4.7 of the AQA, the London Air map indicates that there is an exceedance of the NO2 limits at the site which in line with APEC C from the London Councils Air Quality and Planning Guidance. As such:

"*Refusal on air quality grounds should be anticipated, unless the Local Authority has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered*

further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures. "

The CPG Air Quality should be followed and specifically it should be noted that "Modelling should not predict improvements to future years (future vehicle emissions or future background concentrations)."

ACTION: Further information required.

Construction impacts risk assessment:

Table 6: Predicted Magnitude of Dust Emissions

Activity	Magnitude	Justification
Demolition	Small	The Application Site has a demolition volume of approximately 7,600 m³. Some demolition may occur at a height of above 20 m above ground level. The potential dust emissions magnitude from demolition is considered small.
Earthworks	Small	The soil at the Application Site is loamy and clayey[21] and therefore there is a potential for high dust emissions during dry conditions. As part of the Proposed Development there will be a basement included which is likely to require some earthworks. However, the total area of the Application Site is small at approximately 1,300 m². Overall, the potential dust emissions magnitude from earthworks is considered to be small.
Construction	Small	It is expected that concrete will be used as a construction material, which has a high potential for dust generation. However, the total building volume is small at approximately 12,700 m³. In accordance with the IAQM criteria, the potential dust emission magnitude from construction based on this detail would be small.
Trackout	Small	Due to the size of the Application Site, the unpaved road length is likely to be below 50 m in length. The soil at the Application Site is loamy and clayey and therefore there is a potential for high dust emissions during dry conditions. Therefore, the potential dust emissions magnitude from trackout is considered to be small overall.

Criteria:

Demolition: Example definitions for demolition are:

- **Large:** Total building volume >50,000 m³, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20 m above ground level;
- **Medium:** Total building volume 20,000 m³ – 50,000 m³, potentially dusty construction material, demolition activities 10-20 m above ground level; and
- **Small:** Total building volume <20,000 m³, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10 m above ground, demolition during wetter months.

Earthworks: Earthworks will primarily involve excavating material, haulage, tipping and stockpiling. This may also involve levelling the site and landscaping. Example definitions for earthworks are:

- **Large**: Total site area >10,000 m², potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >8 m in height, total material moved >100,000 tonnes;
- **Medium**: Total site area 2,500 m² – 10,000 m², moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4 m - 8 m in height, total material moved 20,000 tonnes – 100,000 tonnes; and
- **Small**: Total site area <2,500 m², soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height, total material moved <20,000 tonnes, earthworks during wetter months.

Construction: The key issues when determining the potential dust emission magnitude during the construction phase include the size of the building(s)/infrastructure, method of construction, construction materials, and duration of build. Example definitions for construction are:

- **Large:** Total building volume >100,000 m³, on site concrete batching, sandblasting;
- **Medium:** Total building volume 25,000 m² – 100,000 m³, potentially dusty construction material (e.g. concrete), on site concrete batching; and
- **Small:** Total building volume <25,000 m³, construction material with low potential for dust release (e.g. metal cladding or timber).

Trackout: Factors which determine the dust emission magnitude are vehicle size, vehicle speed, vehicle numbers, geology and duration. As with all other potential sources, professional judgement must be applied when classifying trackout into one of the dust emission magnitude categories. Example definitions for trackout are:

- **Large**: >50 HDV (>3.5t) outward movements[16] in any one day[17], potentially dusty surface material (e.g. high clay content), unpaved road length >100 m;
- **Medium**: 10-50 HDV (>3.5t) outward movements[16] in any one day[17], moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m; and
- **Small**: <10 HDV (>3.5t) outward movements[16] in any one day[17], surface material with low potential for dust release, unpaved road length <50 m.

Issue 3: There are a number of concerns about the predicted magnitude of dust emissions. It is noted that some of the criteria are met for higher potential magnitude (not all the criteria need to be met in each case).

- Demolition above 20m would be defined as 'large'.
- No mention is made of the demolition material. If concrete then again this would be considered 'large'
- Earthworks include are in a potentially dusty soil type and therefore considered 'large' risk of dust
- Construction includes potentially dusty concrete and is therefore considered a 'medium' risk
- Trackout is of a potentially dusty surface material and is therefore considered 'large'

Therefore the dust magnitude has been underestimated. The assessment should be corrected and appropriate mitigation and monitoring proposed. **ACTION: Further information required.**

Kind regards

Katherine

Katherine Frost
Senior Sustainability Officer (Planning)

Telephone: 020 7974 5922

The majority of Council staff are now working at home through remote, secure access to our systems.

Where possible please now communicate with us by telephone or email. We have limited staff in our offices to deal with post, but as most staff are homeworking due to the current situation with COVID-19, electronic communications will mean we can respond quickly.