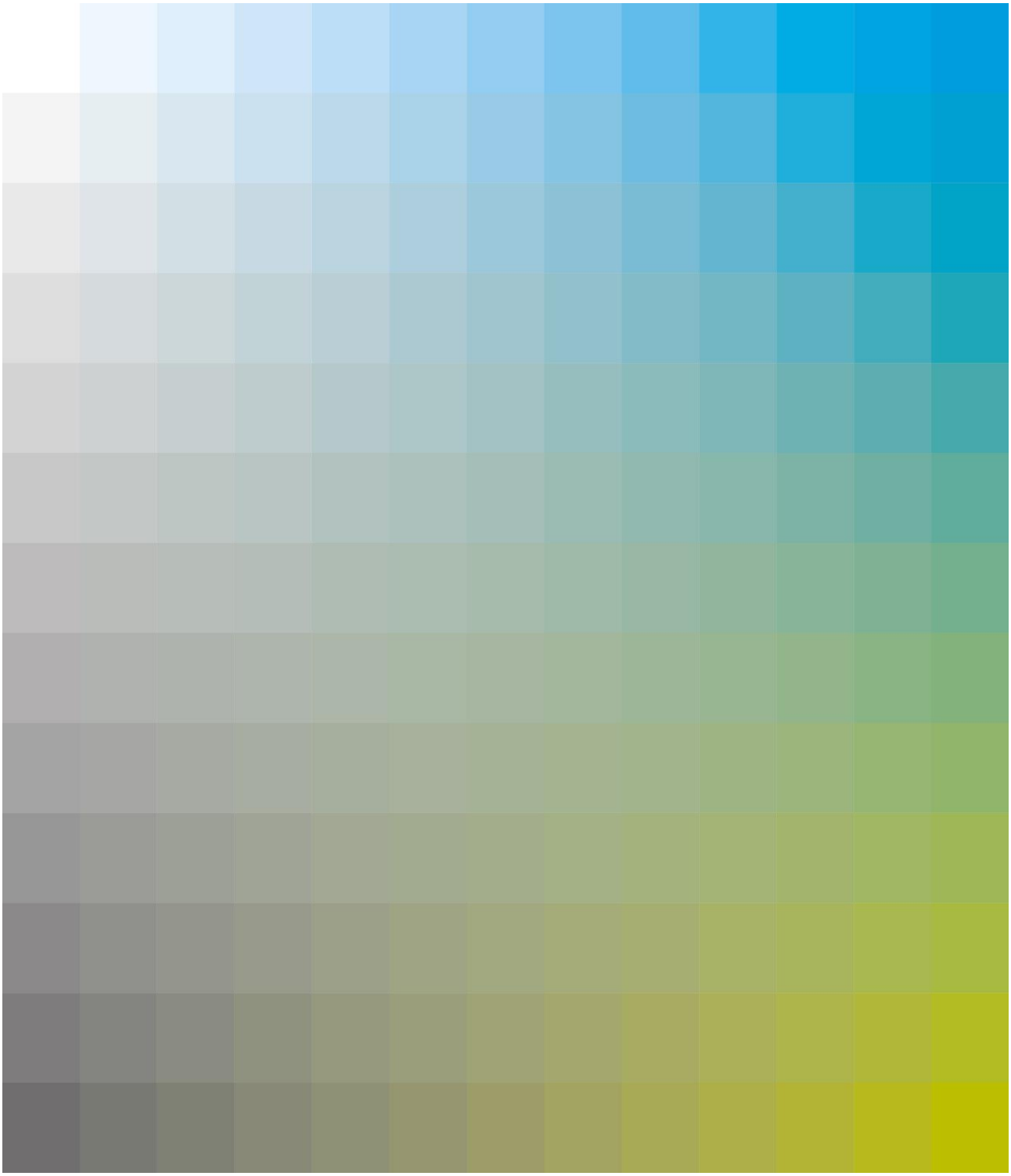
The Hall School

COVER NOTE FOR AIR QUALITY ASSESSMENT REPORT

September 2022



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1 Introduction

This Cover Note has been prepared by Elementa Consulting on behalf of the applicant, The Hall School, in support of the planning application. The Cover Note should be read in conjunction with the Air Quality Assessment Report produced by Ramboll UK Limited in December 2020 (1620007106). The purpose of this Cover Note is to provide updated information in response to changes in polices and data available.

1.1 Context

Ramboll UK Limited produced an Air Quality Assessment (AQA) Report (1620007106) for the Hall School in December 2020 to accompany the planning submission for redevelopment proposals. However, since the report was written, some changes have taken place, which include the following:

- The World Health Organisation (WHO) air quality guidelines were updated in September 2021.
- EU Limit Values are not relevant to the UK anymore, since Brexit.
- The new London Plan was adopted in March 2021.
- Camden Planning Guidance Air Quality was updated in January 2021.
- The London Borough of Camden Air Quality Annual Status Report for 2021 and the Royal Borough of Kensington and Chelsea (RBKC) Air Quality Annual Status Report for 2021 were released in August 2022 and May 2022, respectively.

1.2 Structure of Cover Note

The Cover Note will be structured in such a way so as it is easy to be read with the AQA Report (1620007106). Each Heading of the Cover Note onwards will align with the Heading within the AQA Report (1620007106) under which an explanation together with the updated information will be provided.

2 Executive Summary

The description of the proposed redevelopment work detailed in the AQA Report (1620007106) has been updated to:

- The redevelopment work includes the erection of a single storey extension above the existing Wathen Hall' building following demolition of existing first floor rear science block to provide additional accommodation for the existing school use (Class F.1) and associated alterations including installation of roof-level plant and photovoltaic panels.

The WHO Air Quality Guidelines (AQGs) serve as a global target for national, regional and city governments to work towards improving their citizen's health by reducing air pollution. In September 2021, the WHO updated the AQGs in response to the real and continued threat of air pollution to public health, as detailed in Table 2-1.

Table 2-1: *Recommended 2021 WHO AQG.*

Pollutants	Averaging Time	2021 AQGs [µg/m^3]
$PM_{2.5}$	Annual	5
	24-hour	15
PM_{10}	Annual	15
	24-hour	45
NO_2	Annual	10
	24-hour	25

Paragraph 3 of the Executive Summary within the AQA Report (1620007106) highlights that *'the air quality is predicted to already meet the more stringent WHO guideline values for PM_{10} and $PM_{2.5}$, which are likely to be adopted in the future.'*

Section 7 'Site Suitability' of the AQA Report (1620007106) details the predicted mean annual concentration of NO_2, PM_{10} and $PM_{2.5}$ in 2019. The predicted mean annual concentrations for both PM_{10} and $PM_{2.5}$ at the school building façade were approximately 9.9 µg/m^3. Therefore, only the 2021 WHO guideline for PM_{10} at the building façade is achieved. The 2021 WHO guideline for $PM_{2.5}$ (5 µg/m^3) at the building façade is exceeded, as per Table 2-1.

The last sentence of the last paragraph of the Executive Summary within the AQA Report (1620007106) is not quite accurate. Currently, feasibility studies are being carried out to understand the impacts of replacing existing gas-fired boilers with new low NO_x models in the existing building.

3 Introduction

- The description of the proposed redevelopment work detailed in Section 1.1 of the AQA Report (1620007106) has been updated to:

The redevelopment work includes the erection of a single storey extension above the existing 'Wathen Hall' building following demolition of existing first floor rear science block to provide additional accommodation for the existing school use (Class F.1) and associated alterations including installation of roof-level plant and photovoltaic panels.

- An update is provided to the extant planning permission (2016/6319/P) mentioned in Section 1.1 of the AQA Report (1620007106):

This planning application is the fourth made by the School since 2016 and represents a significant scaling-back of their ambitions to transform the building. This scaling-back has been a consequence of the impacts of the Covid-19 pandemic and spiralling build costs.

The first application, approved in July 2018 (ref: 2016/6319/P), was for much more extensive development including demolition of the Wathen Hall building fronting Crossfield Road and erection of a new building including a significant double-height basement. That permission was later amended (ref: 2019/1325/P) in November 2019 to reduce the basement to a single level.

A further application (ref: 2020/5867/P) was then made to renew the previous application given difficulties in implementing it during the Covid-19 pandemic. This permission was recently approved on September 2020.

- The energy strategy described in Section 1.2 of the AQA Report (1620007106) has been modified to the below:

Despite being a minor development, the School has strong ambitions to significantly improve its environmental performance. It is determined that the School would significantly exceed Building Control and planning policy requirements for carbon emissions. As part of the proposed energy strategy, new air source heat pumps are proposed on the existing roof to cater for the extension. Feasibility studies are being carried out to understand the impacts of replacing existing gas-fired boilers with new ones in the existing building. The addition of photovoltaic panels to both the roofscape of the main building as well as the extension would provide significant sustainability benefits.

4 Site Description

Section 2.2 'Proposed Redevelopment' of the AQA Report (1620007106) is changed to the below:

The planning permission is for the erection of a single storey extension above the existing 'Wathen Hall' building following demolition of existing first floor rear science block to provide additional accommodation for the existing school use (Class F.1) and associated alterations including installation of roof-level plant and photovoltaic panels.

As part of the proposed energy strategy, new air source heat pumps are proposed on the existing roof to cater for the extension. Feasibility studies are being carried out to understand the impacts of replacing existing gas-fired boilers with new low NO_x models in the existing building.

5 Existing Air Quality

5.1 European Union Ambient Air Quality and Clean Air for Europe, 2008

The text in the AQA Report (1620007106) is reworked below to remove the UK as an EU Member State and the obligations that would apply for a Member State.

EU Directive 2008/50/EC5 on ambient air quality and cleaner air for Europe (the CAFE directive) sets out the ambient air quality standards for nitrogen dioxide (NO_2) and particulate matter with an aerodynamic diameter of less than 10 µm (PM_{10}) to be achieved by 1 January 2010 and 2005, respectively. The Air Quality Standards Regulations 2010 implements the requirements of the Directive into United Kingdom (UK) legislation.

Although the UK is no longer an EU Member State, the Air Quality Standards Regulations 2010 remain in domestic legislation.

In December 2015, the Department for Environment Food and Rural Affairs (Defra) on behalf of the UK Government produced plans to improve air quality in the UK. The adequacy of these plans to bring about the necessary improvements in air quality to meet the relevant national air quality objectives (NAQOs) within the shortest time possible were successfully challenged within the High Court in 2016.

Subsequently, in 2017, a plan for the reduction in roadside NO_2 concentrations was released which requires local authorities to identify local actions to accelerate the improvement in air quality in their jurisdictions. It also includes the national measures, including banning the sale of conventionally powered cars and light goods vehicles by 2040 and further investment in cleaner transport.

5.2 Local Air Quality Management

Following the UK's departure from the EU, EU Limit Values are no longer applicable. Only NAQOs are applicable to the UK.

5.3 National Planning Policy Framework

The National Planning Policy Framework (NPPF) in Section 3.1.4 of the AQA Report (1620007106) is the 2019 version, which is not relevant as the NPPF was revised on 20 July 2021. The NPPF sets out the government's planning policies for England and how these are expected to be applied.

Paragraph 8 within achieving sustainable development states that:

"An environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

Paragraph 105 within promoting sustainable transport states that:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."

Paragraph 174 within conserving and enhancing the natural environment states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development

should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans."

Paragraph 185 within ground conditions and pollution states that:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development."

Paragraph 186 within ground conditions and pollution states that:

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

Paragraph 187 within ground conditions and pollution states that:

Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

Paragraph 216 within oil, gas and coal explorations and extraction states that:

"When determining planning applications, minerals planning authorities should ensure that the integrity and safety of underground storage facilities are appropriate, taking into account the maintenance of gas pressure, prevention of leakage of gas and the avoidance of pollution."

5.4 The London Plan

The London Plan referred to in Section 3.2.1 of the AQA Report (1620007106) is the 2016 version and is no longer current as it has been replaced by the one adopted in March 2021.

The Draft New London Plan in Section 3.2.2 of the AQA Report (1620007106) was adopted in March 2021. The following policies within the Plan are now relevant to the topic of air quality:

Policy GG3 Creating a healthy city states that:

F. "To improve Londoners' health and reduce health inequalities, those involved in planning and development must seek to improve London's air quality, reduce public exposure to poor air quality and minimise inequalities in levels of exposure to air pollution."

Policy D3 Optimising site capacity through the design-led approach states that:

9) "Development proposals should help prevent or mitigate the impacts of noise and poor air quality."

Policy D8 Public realm states that:

I. "Development Plans and development proposals should incorporate green infrastructure such as street trees and other vegetation into the public realm to support rainwater management through sustainable drainage, reduce exposure to air pollution, moderate surface and air temperature and increase biodiversity."

Policy SI 1 Improving air quality states that:

A. *"Development Plans, through relevant strategic, site-specific and areabased policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality"*
B. *"To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:*
    1) *Development proposals should not:*
        a) *lead to further deterioration of existing poor air quality*
        b) *create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits*
        c) *create unacceptable risk of high levels of exposure to poor air quality.*
    2) *In order to meet the requirements in Part 1, as a minimum:*
        a) *development proposals must be at least Air Quality Neutral*
        b) *development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures*
        c) *major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1*
        d) *development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure."*
C. *"Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:*
    1) *how proposals have considered ways to maximise benefits to local air quality, and*
    2) *what measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this."*
D. *"In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance."*
E. *"Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development."*

Policy SI 8 Waste capacity and net waste self-sufficiency states that:

E. "Developments proposals for new waste sites or to increase the capacity of existing sites should be evaluated against the following criteria:

4) the impact on amenity in surrounding areas (including but not limited to noise, odours, air quality and visual impact) – where a site is likely to produce significant air quality, dust or noise impacts, it should be fully enclosed."

5.5 Camden Planning Guidance Air Quality, 2021

The Camden Planning Guidance Air Quality, 2019 in Section 3.3.2 of the AQA Report (1620007106) has now been replaced by the Camden Planning Guidance Air Quality, 2021. This planning guidance supports the policies in the Camden Local Plan 2017. It covers a range of topics (such as design, housing and

sustainability) and all sections should be read in conjunction with, and within the context of, Camden's other documents.

The guidance provides information on key air quality issues within the borough and supports Local Plan Policy CC4 Air quality.

5.6 Camden Clean Air Quality Action Plan 2022 – 2026

Camden Clean Air Quality Action Plan 2019-2021 described in Section 3.3.3 the AQA Report (1620007106) is still valid. However, Camden Council has produced a draft two-part document which sets out Camden's approach for improving air quality and protecting health from exposure to air pollution in Camden:

1. The Camden Clean Air Strategy 2019-2034 sets out our strategic objectives for realising the vision for a borough in which no person experiences poor health as a result of the air they breathe.
2. The Camden Clean Air Action Plan 2022-2026 describes the actions that we will take over the next four years (2022-2026). This will follow on from the previous Camden Clean Air Action Plan 2019-2022.

The document goes beyond the legal requirements by committing to more ambitious air quality standards, including pollution sources not usually addressed by local authorities.

In March 2022, Camden again became the first council to commit to achieving the updated 2021 WHO air quality guidelines, as part of our strategic objective to achieve the most stringent evidence-based air pollution targets possible, in the shortest possible time.

Although the WHO guideline levels are not legally-binding, they are regarded in a similar way to the NAQOs. To ensure continual improvement in air quality, interim targets (Table 5-1) for these pollutants have been determined, set at the handover period from each successive Camden Clean Air Action Plan document.

Table 5-1: *Camden long-term air quality and Interim targets to meet the WHO AQG. The WHO guideline limit for PM_{10} is to be met by 2030 while the WHO guideline limits for $PM_{2.5}$ and NO_2 are to be met by 2034. All values represent mean annual concentration in µg/m³.*

Pollutants	2026	2030	2034
$PM_{2.5}$	—	10	**5**
PM_{10}	20	15	**15**
NO_2	30	20	**10**

6 Existing Air Quality

6.1 Local Authority Monitoring

Camden's Air Quality Annual Status Report for 2021 and RBKC Air Quality Annual Status Report for 2021 were released in August 2022 and May 2022, respectively. Table 6-1 provides an update to Table 5.5 and Table 6 of the AQA Report (1620007106) to include 2021 data.

Overall, the 2021 data follow the same trend as the 2019 data. All stations, except CD1, Swiss Cottage, meet the NAQO for the mean annual concentration of NO_2. The 1-hour objective for NO_2 is achieved at all stations. However, the 2021 WHO AQG for NO_2 was exceeded at all stations.

All stations achieved the NAQOs for the annual mean objective and 24-hour objective for PM_{10} as well as the annual mean objective for $PM_{2.5}$.

Only KC1, North Kensington achieved the 2021 WHO AQG for PM_{10}. The 2021 WHO AQG for $PM_{2.5}$ was exceeded at all stations.

***Table 6-1**: Recorded NO_2, PM_{10} and $PM_{2.5}$ concentrations at monitoring stations in vicinity to the site. The annual mean objective is in µg/m³.*

Site	NO_2		PM_{10}		$PM_{2.5}$
	Annual mean objective	1-hour objective	Annual mean objective	24-hour mean objective	Annual mean objective
CD1, Swiss Cottage	44.00	2	16	0	9
CA7, Frognal Way	15.35	—	—	—	—
CA17, Fitzjohn's Road	29.95	—	—	—	—
BL0, Bloomsbury	27.00	0	16	0	9
KC1, North Kensington	20.00	0	13	1	9

2020 air quality data are not included as they are not representative of the usual conditions due to COVID-19 lockdown. Additionally, it is of the view that 2021 data are still not characteristic of the area as it was a period of recovery.

6.2 Defra Background Concentrations

As mentioned above, it is of the view that 2019 is the most representative set of data. They are added in Table 6-2 as the numbers were misquoted in the AQA Report (1620007106). However, background concentrations for 2021 are provided in **Table 6-2** for reference.

***Table 6-2:** Defra predicted annual mean background concentrations in µg/m³ at the site.*

Year and Grid Square	NO_2	PM_{10}	$PM_{2.5}$
2019 (526500, 184500)	30.3	19.2	12.3
2021 (526500, 184500)	27.6	18.5	11.8

The 2020 background concentrations are not included as they are not representative of the usual conditions due to COVID-19 lockdown. Both sets of data achieve the NAQOs, although exceeding the 2021 WHO AQGs, with the background concentrations improving in 2021. Similarly, it is of the view that 2021 data are still not characteristic of the area as it was still a period of recovery.

7 Site Suitability

7.1 Summary of site assessment

Table 7-1 summarises the findings of the predicted mean annual concentration in 2019 at the building façade. They all achieve the NAQOs but exceed the 2021 WHO AQGs.

It is expected that the more stringent 2021 WHO AQGs are not achieved. However, this is likely to be changing as more measures are enforced within the borough, as described within the draft Camden Clean Air Action Plan 2022-2026. The interim targets determined will also pave the way to better air quality within the borough.

Table 7-1: *Predicted mean annual concentration at the front façade and at a height of 1.5m, representing ground exposure.*

Pollutants	Predicted Mean Annual Concentration [µg/m^3]
$PM_{2.5}$	9.9
PM_{10}	9.9
NO_2	28.0

7.2 Mitigation measures

Since the NAQOs are achieved at the façade of the building, no mitigation measures are required. The outcome of the AQA Report (1620007106) therefore does not change.

8 Summary and Conclusions

Section 8 'Summary and Conclusions' of the AQA Report (1620007106) describes that *'air quality is predicted to already meet the more stringent WHO guideline values for PM_{10} and $PM_{2.5}$, which may be adopted in the future.'*

However, since the WHO AQGs were updated in 2021, only the limit for PM_{10} is achieved.

9 Conclusions of this Cover Note

As the scheme is determined to be a minor development as explained in the Planning Statement, no dispersion modelling is required. However, predicted mean annual concentrations were determined (ADMS-Roads dispersion model) at the façade of the building for the year 2019, as detailed in the AQA Report (1620007106).

The predicted mean annual concentrations for NO_2, PM_{10} and $PM_{2.5}$ achieve the NAQOs. Therefore, the occupants are not predicted to be exposed to poor air quality and no mitigation measures are required.