

Proposed Change of Use of The Old Police Station, Wilmslow Road, Manchester

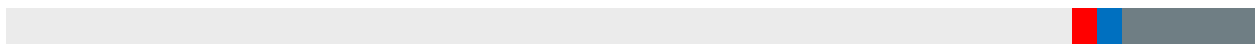
Planning Application

128136/FO/2020

Planning Condition No. 5

Wasil Hussain, HUS Property Developments Ltd

31st December 2021



Introduction

In January 2021, HUS Property Developments Ltd (Applicant) submitted a full planning application (**128136/FO/2020**) (application) to Manchester City Council (MCC) as the Local Planning Authority (LPA). The planning application concerned a material change of use of the former police station building on Wilmslow Road. It is proposed that the site will become 6no two bed self-contained apartments (class C3).

Approval of the application has been granted subject to conditions. However, the permission requires the discharge of a condition relating to air quality:

Condition no. 5 - The applicant may need to install some form of mechanical ventilation for the apartments as they are located within the AQMA and may require a clean air intake to protect future residents.

MCC has an obligation to ensure that the effect of changes in exposure of members of the public to air pollution are acceptable, particularly in its Air Quality Management Area (AQMA) where air quality is generally poor. Therefore, for planning condition no. 5 to be discharged, HUS Property Developments Ltd is required to install a clean air intake or provide the LPA Planning Officer with additional information to demonstrate that the impact of the change of use will not lead to unacceptable exposure to air pollution at the façade of the redeveloped building.

This report provides detailed information relating to air quality at the application site. It includes a description of the likely exposure points at the building façade, a review of existing and likely future air quality on Wilmslow Road and an impartial judgement as to whether mechanical ventilation is required to discharge planning condition no. 5.

The report will determine whether the submitted design requires mechanical ventilation to ensure that the application is not constrained by air quality and as such is consistent with the MCC Local Plan, the Greater Manchester Air Quality Action Plan and the National Planning Policy Framework.

Development Site Location

The application site is in a mixed-use area on Wilmslow Road (A5145) in Didsbury, south Manchester. The application site, which is currently vacant, lies between the Barnado's charity shop and Boots and is opposite Albert Hall Street as shown in **Fig. 1**.

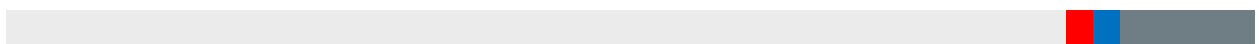
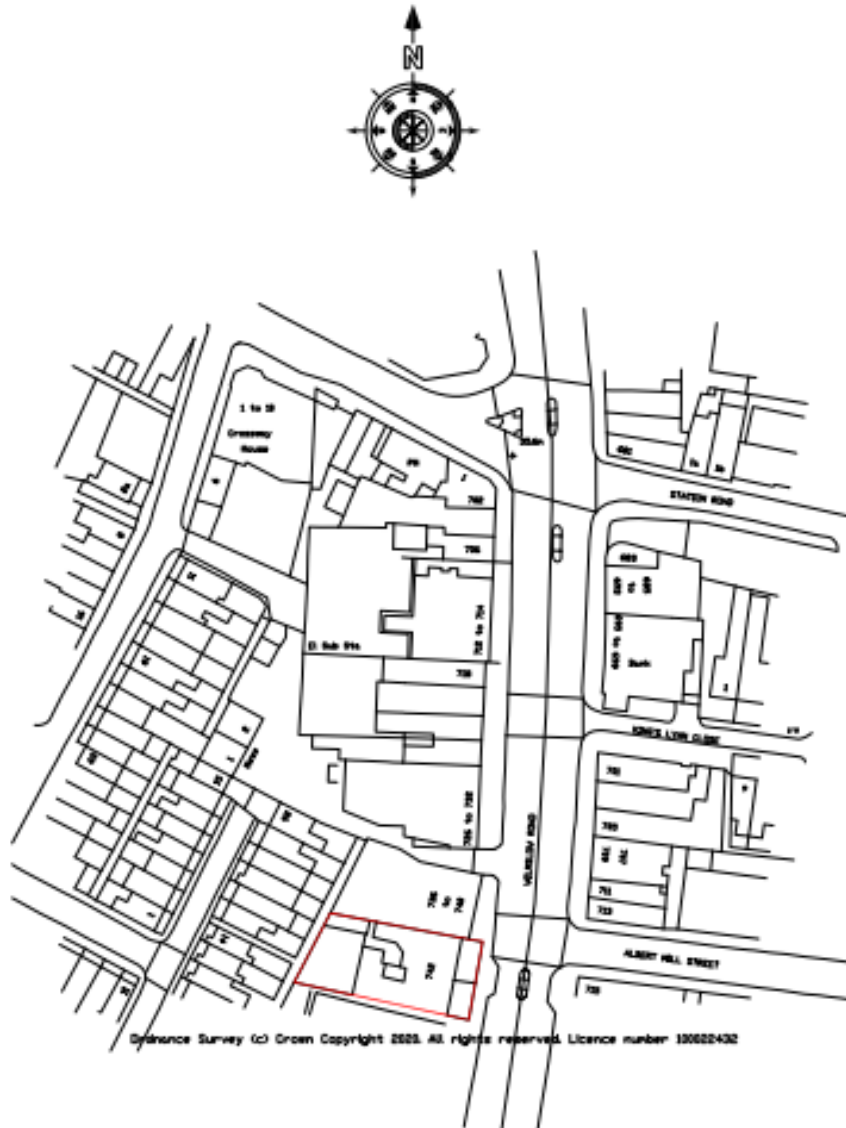
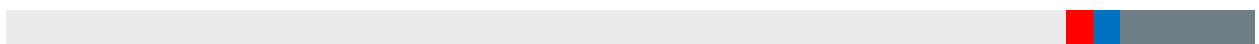


Fig. 1 – Existing Location Plan



Old Police Station
738-744 Wilmslow Road
Didsbury
M20 2DW
Existing Location Plan
1:1250



This area of Wilmslow Road provides a high density of retail outlets and services which attract road vehicles utilising a limited number of on-road parking spaces.

The façade of the old police station is non-uniform in that it ranges from 6-8m from the kerb of Wilmslow Road at the ground floor. Directly outside the building is widened pavement and traffic island separating two carriageways. As such road traffic is likely to be relatively slow on this section of Wilmslow Road and is the main source of air pollutants nitrogen dioxide (NO₂) and particulate matter (PM₁₀) for which the Manchester Air Quality Management Area (AQMA) is declared.

Local air quality in the area is reviewed and assessed by MCC.

Regulatory Environment

National Air Quality Strategy

The Air Quality Strategy published by the Department for Environment, Food, and Rural Affairs (DEFRA) provides the policy framework (**Ref. 1**) for air quality management and assessment in the UK.

The Government has established a set of air quality standards and objectives to protect human health. The 'standards' are set as concentrations below which effects are unlikely even in sensitive population groups, or below which risks to public health would be exceedingly small.

The 'objectives' set out the extent to which the Government expects the standards to be achieved by a certain date. The objectives for use by local authorities are prescribed within the Air Quality (England) Regulations, 2000 (**Ref. 2**) and the Air Quality (England) (Amendment) Regulations 2002 (**Ref. 3**).

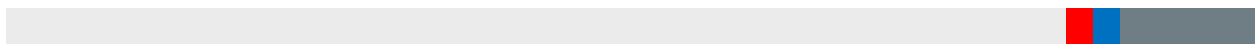
The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. The annual mean objectives for nitrogen dioxide (NO₂) and fine particles (PM₁₀) are considered to apply at the façades of residential properties, nurseries, schools and hospitals but not at hotels. The 24-hour objective for PM₁₀ is considered to apply at the same locations as the annual mean objective, as well as in gardens of residential properties and at hotels.

The objectives of relevance to the assessment are shown in **App. 1**.

A new Clean Air Strategy (**Ref. 4**) was published in January 2019 and includes a number of objectives including 'targeted local action' in problem areas and the provision of new powers for local authorities to tackle air pollution in such areas.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) (**Ref. 5**) sets out planning policy for England in one place. It places a general presumption in favour of sustainable development, stressing



the importance of local development plans, and states that the planning system should perform an environmental role to minimise pollution.

The NPPF is supported by Planning Practice Guidance (PPG) (**Ref. 6**), which includes guiding principles on how planning can take account of the impacts of new development on air quality. The PPG states that *“Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with EU Limit Values” and “It is important that the potential impact of new development on air quality is taken into account ... where the national assessment indicates that relevant limits have been exceeded or are near the limit”*. The role of the local authorities is covered by the Local Air Quality Management (LAQM) regime, with the PPG stating that local authority Air Quality Action Plans *“identify measures that will be introduced in pursuit of the objectives”*.

The PPG states that *“Whether or not air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to generate air quality impact in an area where air quality is known to be poor. They could also arise where the development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, lead to a breach of EU legislation (including that applicable to wildlife)”*.

The PPG sets out the information that may be required in an air quality assessment, making clear that *“Assessments should be proportional to the nature and scale of development proposed and the level of concern about air quality”*. It also provides guidance on options for mitigating air quality impacts, as well as examples of the types of measures to be considered. It makes clear that *“Mitigation options where necessary, will depend on the proposed development and should be proportionate to the likely impact”*.

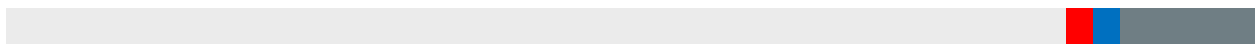
Manchester Local Development Framework

The MCC Core Strategy was adopted on 11th July 2012 (**Ref. 7**). It is the key document in Manchester's Local Development Framework and covers a period of 15 years from 2012 to 2027. It outlines the Council's vision for Manchester in 2027 along with the planning policies which will be used to deliver that vision. These include:

Policy EN 16 - Air Quality

The Council will seek to improve the air quality within Manchester, and particularly within AQMAS, located along Manchester's principal traffic routes and at Manchester Airport. Developers will be expected to take measures to minimise and mitigate the local impact of emissions from traffic generated by the development, as well as emissions created by the use of the development itself, including from Combined Heat and Power and biomass plant.

When assessing the appropriateness of locations for new development the Council will consider the impacts on air quality, alongside other plan objectives. This includes cumulative impacts, particularly in AQMAS.



Policy DM 1 - Development Management

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:

Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.

The Greater Manchester Combined Authority and its ten boroughs published the final draft of Greater Manchester's Plan for Homes, Jobs and the Environment for consultation at the end of 2020.

Greater Manchester Air Quality Action Plan

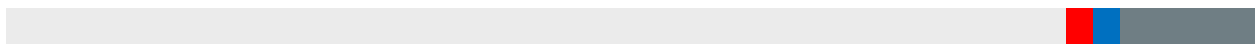
The Greater Manchester Combined Authority published the Greater Manchester Air Quality Action Plan (AQAP) 2016-2021 (**Ref. 8**). The AQAP involved a review of the strategies, policies and plans which tackle or are in some way related to air quality, to develop a clear, robust and meaningful set of actions to deliver real changes in terms of air quality, whilst supporting the sustainable economic growth of the region.

No specific actions are mentioned with respect to air quality on Wilmslow Road.

Clean Air Plan

As one of the ten Greater Manchester councils, MCC is currently drafting a Clean Air Plan which has been in development since 2018 when a Strategic Outline Case was submitted to government. A final plan has been developed based on delivering compliance in the 'shortest possible time' and that improves air quality with the least detrimental impact.

The proposed final Clean Air Plan includes the introduction of a 'Category C' charging Clean Air Zone. This would cover local roads across the whole of GM and operate 24 hours a day, seven days a week. The anticipated implementation date is Monday 30 May 2022. The most polluting commercial vehicles would pay a daily charge (applicable from midnight to midnight) to travel on local roads in the zone. Failure to pay the daily charge would result in a penalty charge notice (PCN), in addition to the daily charge.



Existing Environment

Emission Sources

The key local source of air pollution which currently impacts on air quality at the development site is road traffic. Vehicle exhaust gas emissions are produced by traffic using Wilmslow Road (A5145) and slow-moving traffic on Albert Hill Street and Old Oak Street close to the application site.

Sensitive Receptors

The application site is considered to consist of high sensitivity receptors because it will introduce new human receptors to air pollution which can be exposed for long periods of time. Human exposure is possible at the following locations within the redesigned building:

- Ground level – in the two lounges at 8m from Wilmslow Road (drawing number 12 **App. 2**)
- First floor level – in the two living and dining areas at 8m from Wilmslow Road approximately 6m above ground (drawing number 12 **App. 3**)
- Second floor level – in the two bedrooms at 8m from Wilmslow Road approximately 12m above ground (drawing number 12 **App. 4**)

It should be noted that the air pollution concentration exposure reduces with height due to increased mixing in ambient air. Therefore, it can be robustly assumed that compliance with air quality standards in the ground floor lounges will mean compliance will be achieved in the living/dining areas and the bedrooms.

Air Quality Management Areas

Concerns about air quality are manifest in the Greater Manchester AQMA, the boundaries of which were declared in 2016 because of exceedances of the annual mean NO₂ objective. The section of the AQMA relevant to Didsbury is shown in **Fig. 2**.

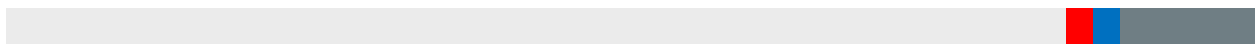
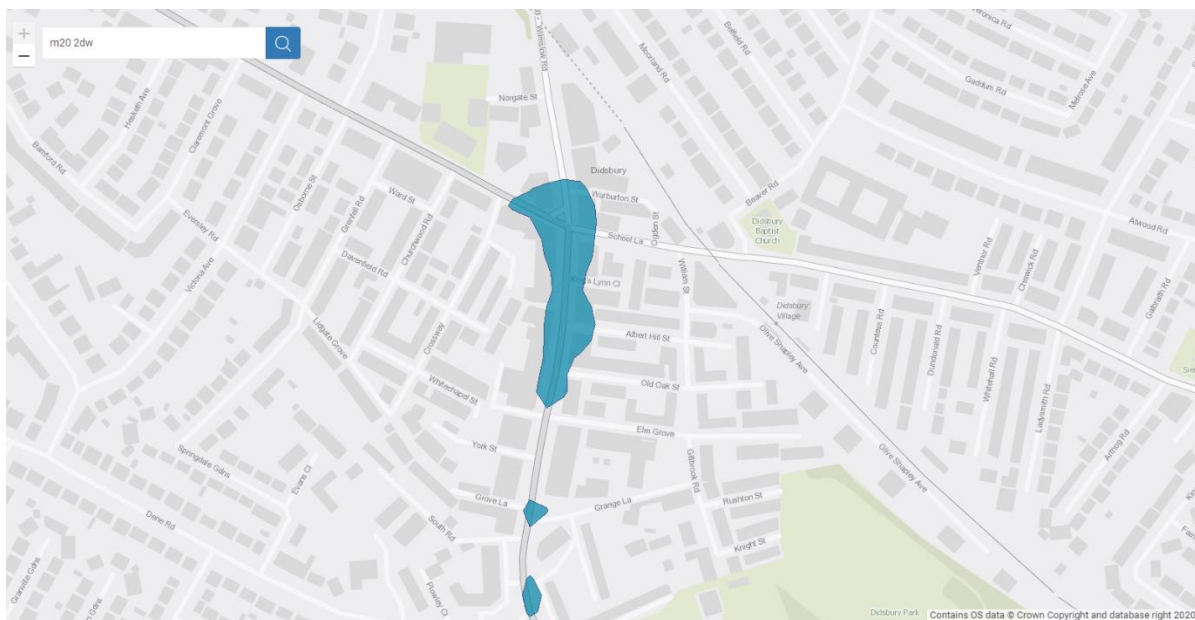


Fig 2. Greater Manchester AQMA (Ref. 9)



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Fig. 2 shows the development site is located inside the Greater Manchester AQMA, which covers the section of Wilmslow Road between Elm Grove and School Lane. The application site lies inside the AQMA and is therefore of concern to MCC due to elevated concentrations of NO_2 and PM_{10} .

Background Air Quality

The application site centre is located at OS grid reference 384693, 391136, which corresponds to DEFRA 1 km² mapped background square 384500, 391500 within the MCC area **Ref. 10**). The background squares surrounding the development site centre are all located in an area for which MCC is responsible for the review and assessment of local air quality.

Table 1 (NO_2) and **Table 2** (PM_{10}) show the concentrations extracted for the site centre and eight surrounding 1 km² grid squares. Apportionment of sources contributing to total background NO_2 (the key pollutant of concern) show that the main contributions in this area of Manchester are made by the A-roads, cold start emissions on local roads, domestic heating and rural sources.

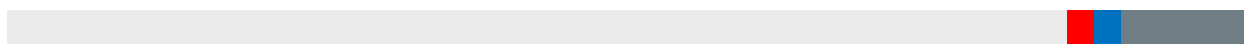


Table 1. Background NO₂ concentrations (µg/m³)

X	Y	Pollutant	2021	2022	2025	2030
384500	392500	NO ₂	17.1	16.5	14.9	13.5
384500	393500	NO ₂	15.3	14.8	13.3	12.0
384500	391500	NO ₂	16.1	15.5	13.8	12.2
385500	392500	NO ₂	15.1	14.6	13.2	11.9
385500	393500	NO ₂	16.1	15.5	14.0	12.6
385500	391500	NO ₂	15.7	15.1	13.6	12.0
383500	392500	NO ₂	16.1	15.4	13.7	12.0
383500	393500	NO ₂	15.4	14.8	13.2	11.6
383500	391500	NO ₂	15.5	14.8	13.2	11.5
Maximum			17.1	16.5	14.9	13.5
Annual mean objective			40			

Table 2. Background PM₁₀ concentrations (µg/m³)

X	Y	Pollutant	2021	2022	2025	2030
384500	392500	PM ₁₀	11.6	11.5	11.2	11.1
384500	393500	PM ₁₀	11.9	11.8	11.5	11.5
384500	391500	PM ₁₀	11.6	11.5	11.2	11.1
385500	392500	PM ₁₀	11.8	11.7	11.3	11.3
385500	393500	PM ₁₀	12.0	11.9	11.6	11.5
385500	391500	PM ₁₀	11.8	11.7	11.3	11.3
383500	392500	PM ₁₀	11.7	11.6	11.3	11.3
383500	393500	PM ₁₀	11.6	11.5	11.2	11.2
383500	391500	PM ₁₀	11.3	11.2	10.9	10.9
Maximum			12.0	11.9	11.6	11.5
Annual mean objective			40			

Table 1 and **Table 2** show the highest background NO₂ and PM₁₀ concentrations are mapped in square 384500,392500 (for NO₂) containing the application site and 385500,393500 (for PM₁₀). However, none indicate an exceedance of the annual mean objectives of 40 µg/m³ and are all under half of the objective. Both tables show a downward trend in NO₂ and PM₁₀ between 2021 and 2030, which is stronger for NO₂ and PM₁₀.

Local Monitoring Data

A review of the latest Greater Manchester Combined Authority Annual Status Report (ASR) (**Ref. 11**) shows that no monitoring data has been or is currently collected on Wilmslow Road. However, for the purpose of assessing existing local exposure, proxy data were collected for a roadside monitoring site over 1 km away with higher traffic flows than Wilmslow Road. The site is located 7m from the kerb of the A34 Kingsway in East Didsbury at an exposure height of 3m.

The site and corresponding results for 2021 are shown in **Table 3**.

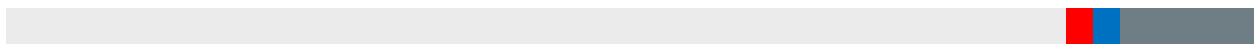


Table 3. NO₂ diffusion tube monitoring data (µg/m³)

Site	ID	X	Y	Distance to kerb (m)	2016	2017	2018	2019	2020*
A34 Kingsway, East Didsbury	MA74NO	385400	390095	3.0	38.0	37.1	35.7	33.6	23.3

*results impacted by reduced traffic flows caused by Covid-19 pandemic social restrictions.

Table 3 shows that the concentrations recorded at MA74NO on the A34 Kingsway remained consistently under the 40 µg/m³ annual average objective between 2016 and 2020. In 2019, the site was over 6 µg/m³ below the objective and in 2020 over 16 µg/m³ below. However, the 2020 result is considered to be unreliable because of reduction in traffic flows caused by the Covid-19 pandemic social restrictions. The key feature of the data recorded between 2016 and 2019 is the falling trend year on year and on-going compliance.

Local Traffic Data

Sampled traffic data were sourced from Department for Transport (DfT) Traffic Counters (**Ref. 12**) for the A34 Kingsway and A5093 Wilmslow Road as shown in **Table 4**.

Table 4. Annual Average daily Flow (2-way)

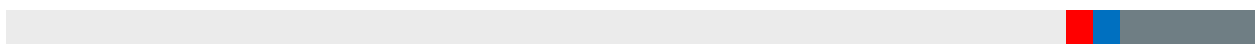
Road	X	Y	Counter ID	Year	AADT	% HGV	Source
522 Wilmslow Road (A5093)	384651	391794	944410	2019	8,252	0.8%	DfT
815 Wilmslow Road (A5145)	385017	390420	7713	2019	11,832	0.6%	DfT
868 Kingsway (A34)	385350	390000	46357	2019	37,436	1.2%	DfT

Table 4 shows that two-way Annual Average Daily Traffic (AADT) flows on the A34 Kingsway were over 4 times higher as counted at 522 Wilmslow Road and 3 times as high as counted at 815 Wilmslow Road. A greater proportion of the AADT was recorded as Heavy Goods Vehicles (HGV) on Kingsway which produce more pollution than light duty vehicles.

Ingress of Air Pollutants

Outdoor pollutants are generated by sources such as industrial processes and traffic emissions, and can migrate indoors through windows, doors and other means of ventilation.

In May 2018, the London Mayor launched a programme of air quality audits to help clean up toxic air and protect the health of young children in 20 nurseries in some of London's most



polluted areas (**Ref. 13**). The programme included a programme of air quality monitoring to determine the relationship between outdoor and indoor NO₂ concentrations.

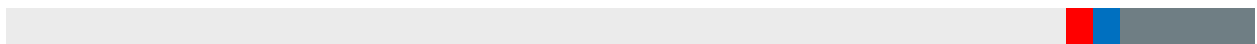
Previous research undertaken for the Greater London Authority found that outdoor NO₂ concentrations and the airtightness of the building envelope explained 84% of the variation between classrooms, indicating the influence of strong outdoor pollution sources and the importance of the building envelope. Overall, indoor to outdoor (I/O) ratios ranged from 30-50% in an airtight, contemporary school buildings compared to 70-90% in older Victorian schools that have original wooden window frames.

Table 5 provides a summary of the average monitored relationship between outdoor and indoor concentrations of NO₂ for a range of schools across London.

Table 5. Ratio of sampled indoor to outdoor concentrations of NO₂

School	Ratio of indoor to outdoor (I/O) Concentrations (%)
Thomas Coram Centre, Camden	70
Rachel McMillan Nursery School, Greenwich	60
Robert Owen Nursery School, Greenwich	75
NAQA Pembury House Nursery School, Haringey	57
NAQA Maxilla and Goldborne Children's Centre, Kensington/ Chelsea	51
NAQA Ethelred Nursery School, Lambeth	54
NAQA Triangle Nursery School, Lambeth	38
NAQA Clyde Nursery School, Lewisham	67
NAQA Kay Rowe Nursery School, Lewisham	53
NAQA Sheringham Nursery School, Newham	73
NAQA Windham Nursery School, Richmond	71
NAQA Ann Bernadt Nursery School, Southwark	86
NAQA Kintore Way Nursery School, Southwark	63
NAQA Nell Gywnn Nursery School, Southwark	70
NAQA Alice Model Nursery School, Tower Hamlets	61
NAQA Columbia Market Nursery School, Tower Hamlets	79
NAQA Somerset Nursery School, Wandsworth	48
NAQA Dorothy Gardner Nursery School, Westminster	64
NAQA Tachbrook Nursery School, Westminster	18

Table 5 shows that the ratio of indoor to outdoor NO₂ concentrations ranges from 18% at the Tachbrook Nursery School, Westminster to 86% at the NAQA Columbia Market Nursery School, Tower Hamlets which is consistent with the previous findings by the Greater London Authority. The data confirm that ingress to airtight contemporary schools is lower than older schools which offer less protection.



Based on the range of indoor to outdoor concentrations sampled at London schools, the indoor NO₂ concentration of a theoretical building with a façade at 3m from Kingsway would range from 6.0 µg/m³ (18% at NAQA Tachbrook Nursery School) to 28.9 µg/m³ (86% at NAQA Ann Bernadt Nursery School) which are both well under the ambient air objective for NO₂ of 40 µg/m³.

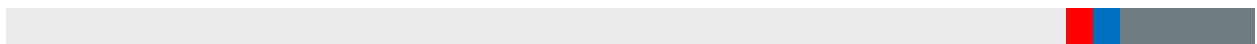
Discussion

Monitoring data collected at 3m from the kerbside of the A34 Kingsway in 2019 was under the NO₂ ambient air annual mean objective by over 6 µg/m³ (**Table 3**). Based on an assumed linear relationship between traffic flows, it can be determined that ambient concentrations of NO₂ at 3m from Wilmslow Road will not be higher than 33.6 µg/m³ because traffic flows are 3-4 times lower. The monitored concentration on Kingsway is under the ambient air quality objective of 40 µg/m³.

The dispersion of pollution is influenced by many factors which are specific to the receiving environment. The unique conditions on Wilmslow Road such as the damping effect on vehicle speeds caused by the traffic island, elevated emissions from slow moving and idling queuing vehicles and potential 'street canyon' effects from buildings mean that the relationship between traffic flows and pollutant concentrations is not necessarily the same as that on A34 Kingsway. Caution must therefore be applied when assuming a linear relationship between traffic flows are monitored concentrations in this way.

As traffic flows on the A34 Kingsway are between 3-4 times higher than Wilmslow Road it is however highly unlikely that concentrations on Wilmslow Road will be any higher than 33.6 µg/m³ at 3m from the roadside even when local conditions are considered. Furthermore, as the closest exposure point at the two proposed ground level lounges are 8m from the kerbside, it is likely that the concentration at the façade will be less than 33.6 µg/m³ because there is an extra 5m of ambient air in which the air pollution can mix and disperse before being received. At the first and second floor levels it will be even lower due to increase vertical mixing in the air column.

As concentrations at the 8m façade are likely to be less than 33.6 µg/m³ and the building will be constructed with modern airtight window frames, ingress to the building is will be at the lower end of the sampled indoor to outdoor concentration ratio range (18% to 86%) presented in the sampled data for London schools in **Table 5**. As a precautionary approach, it is therefore robust to state that the indoor concentration is likely to be less than the 28.9 µg/m³ using the highest estimate of ingress to the building i.e, 86% of 33.6 µg/m³. In reality, any air entering the building will be subject to natural filtration at much lower ratio than 86% such is the effectiveness of modern airtight window construction.



Conclusion

It has been determined that the application site is located in the Greater Manchester AQMA declared because of exceedances of the annual mean NO₂ objective. Therefore, semi-quantitative analysis using monitored traffic flow and pollution monitored datasets has been completed which demonstrates, using a cautious approach, that ambient air concentrations of NO₂ are likely to be well below the national air quality strategy health-based objective at the ground level façade.

It is therefore judged that there is no requirement for mechanical ventilation to provide clean air intake to be incorporated into the design to protect future residents from the impact of road traffic emissions from Wilmslow Road. Ambient air concentrations at the 8m façade are unlikely to be higher than the monitored concentration on Kingsway and will be reduced further by natural filtration from modern airtight windows.

Although air quality adjacent to the application site is relatively poor inside the AQMA, it is considered that the application is compliant with the NPPF PPG because exposure of future residents to air pollution from Wilmslow Road will be well below the ambient air quality objectives inside the building. In general, monitored concentrations are trending down across Manchester, as evidenced by the data presented for the site on the A34 Kingsway in **Table 3**. This trend is likely to continue as the benefits of the Clean Air Plan, government policies to reduce emissions¹ and uptake of cleaner vehicles² all take effect in the coming years.

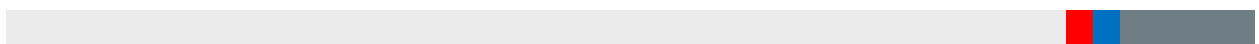
As the design incorporates zero parking provision, by definition it will encourage walking, public transport and cycling as the only means of accessing the building. The submitted design is therefore not constrained by air quality and is consistent with the MCC Local Plan, the Greater Manchester Air Quality Action Plan, Clean Air Plan and the National Planning Policy Framework. Therefore, it is impartially judged that mechanical ventilation is not required to discharge planning condition no.5.

¹ HM Government (2018). The Road to Zero.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf

² HM Government (2020). Sales of new petrol and diesel cars to end in the UK by 2030.

<https://www.gov.uk/government/news/government-takes-historic-step-towards-net-zero-with-end-of-sale-of-new-petrol-and-diesel-cars-by-2030>

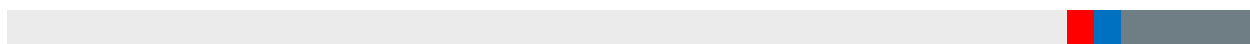


Appendices

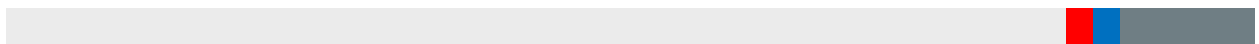
Appendix 1 – National Air Quality Strategy Objectives

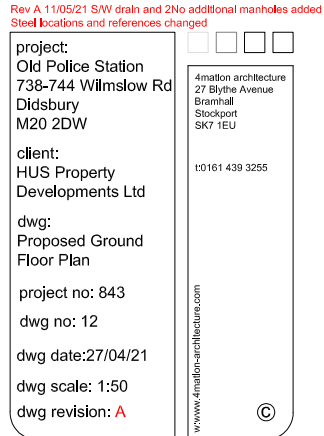
Table A1 - National Air Quality Strategy Objectives

National Air Quality Objectives and European Directive Limit Values for the Protection of Human Health						
Pollutant	Applies to	Objective	Measured as	Date to be achieved by and maintained thereafter	European Obligations	Date to be achieved by and maintained thereafter
Nitrogen dioxide (NO ₂)	UK	200µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005	200µg/m ³ not to be exceeded more than 18 times a year	01.01.2010
	UK	40µg/m ³	annual mean	31.12.2005	40µg/m ³	01.01.2010
Particulate Matter (PM ₁₀) (gravimetric)	UK (except Scotland)	40µg/m ³	annual mean	31.12.2004	40µg/m	01.01.2005
	UK (except Scotland)	50µg/m ³ not to be exceeded more than 35 times a year	24-hour mean	31.12.2004	50µg/m ³ not to be exceeded more than 35 times a year	01.01.2005

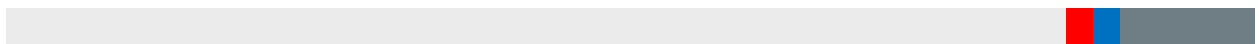


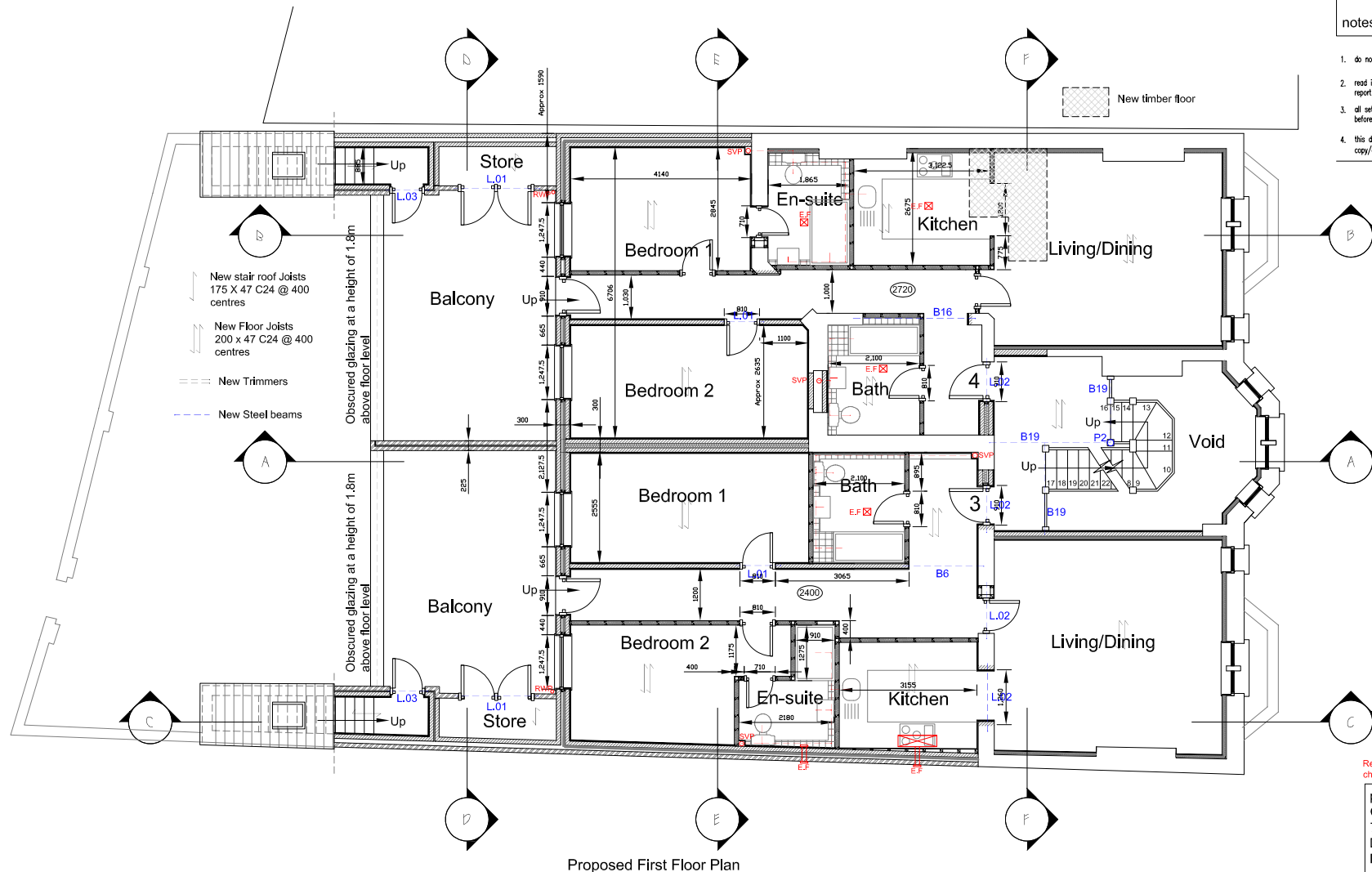
Appendix 2 – Ground Floor Level Design





Appendix 3 – First Floor Level Design





Rev A 11/05/21 S/W nwp's added, steel locations and references changed

project:
Old Police Station
738-744 Wilmslow Rd
Didsbury
M20 2DW

client:
HUS Property
Developments Ltd

dwg:
Proposed First
Floor Plan

project no: 843

dwg no: 13

dwg date: 27/04/21

dwg scale: 1:50

dwg revision: A

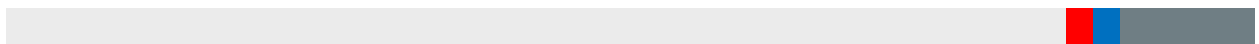
4mation architecture
27 Blythe Avenue
Bramhall
Stockport
SK7 1EU

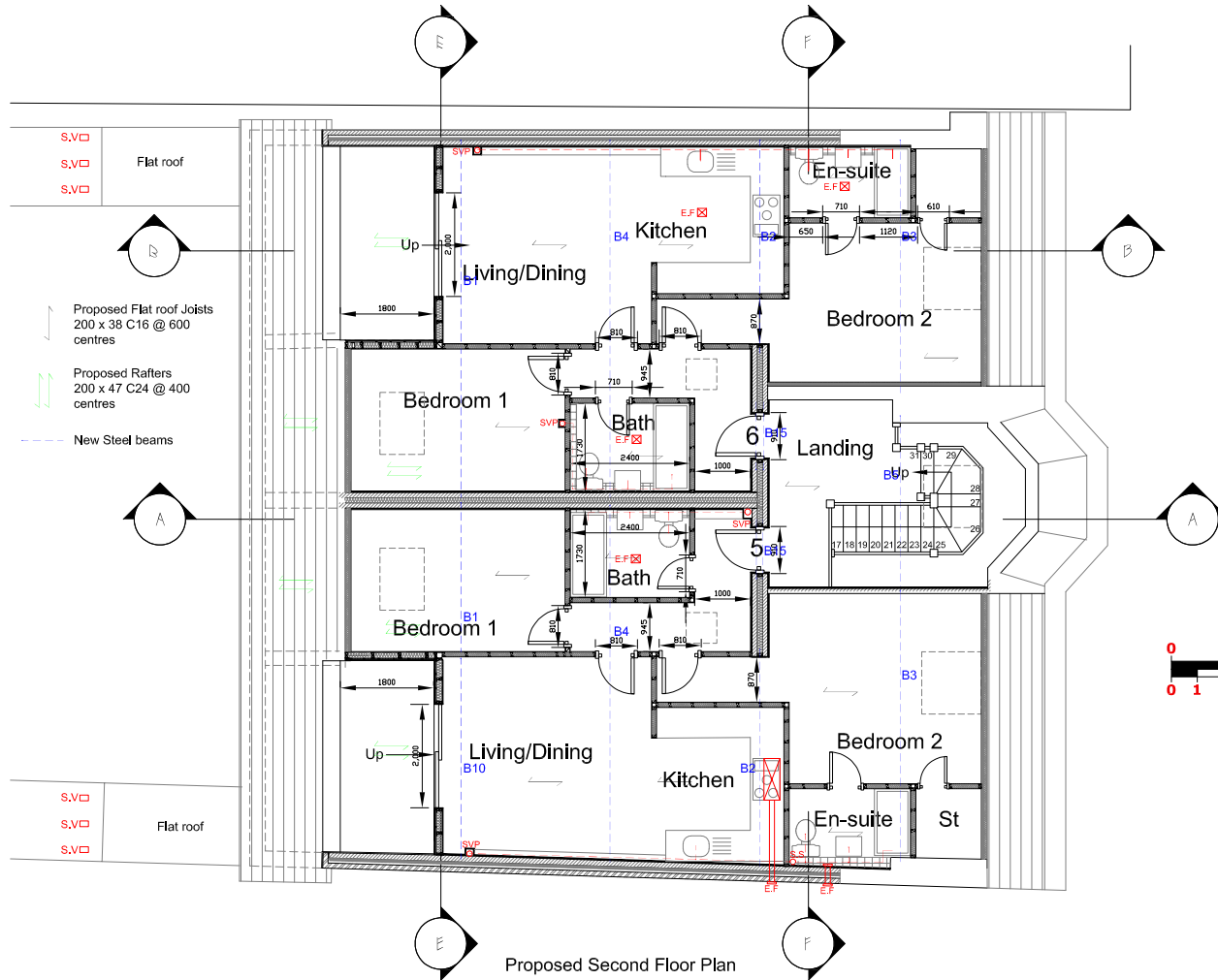
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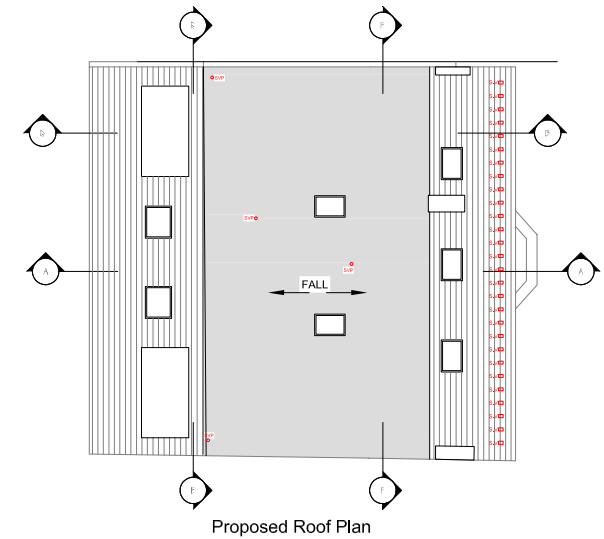
Appendix 4 – Second Floor Level Design





notes

1. do not scale from this drawing – use figured dimensions only
2. read in conjunction with all other consultants/specialists drawings. report any discrepancies before affected work commences
3. all setting out dimensions to be checked on site by contractor before work commences
4. this drawing remains copyright of 4madon architecture. copy/distribute only with consent of author



Rev A 11.05.21 steel location and references amended, slate vents added

project:
Old Police Station
738-744 Wilmslow Rd
Didsbury
M20 2DW
client:
HUS Property
Developments Ltd

dwg:
Proposed Second
Floor & Roof Plan &
Proposed
Elevations
project no: 843
dwg no: 14
dwg date: 27/04/21
dwg scale: 1:50/100
dwg revision: A

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27 Blythe Avenue
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