



The Camden Council Sustainability Officer has provided comments on issue 1 of the Condition 29 Ventilation and Extraction Statement. This document sets out the response to those comments. For clarity and ease of reference the Sustainability Officer's comments are repeated below:

1. *There seem to be a number of air inlets at ground floor and the lower levels. Filtration is mentioned, but it's not clear whether this sufficiently cleans the air – can you confirm whether the air is under 60mg for NO₂?*
2. *Can you provide more details of the filters – what kind are they, where are they, what are they filtering – NO_X and/or PMs? Particularly important for the resi properties fronting onto TCR.*
3. *Office system seems to be ok as the air inlets are at roof level, but can you confirm the air is clean?*

To respond to the points in sequence.

Please note all the responses include references to air quality (AQ). Where AQ values are stated, they have been taken from the consented Air Quality Assessment.

Comment 1

Yes, the air is below $\mu\text{g}/\text{m}^3$ based on the reasoning below.

From the air quality assessment, which was completed in 2020, it was predicted that the highest NO₂ concentration at the façade of the development would be at Receptor P3 with a concentration of 47.6 $\mu\text{g}/\text{m}^3$. Receptor P3 was representative of the Retail entrance from Tottenham Court Road at a height of 1.5 m. So, it is reasonable to assume that the air on the façade would be below 60 $\mu\text{g}/\text{m}^3$ and therefore, following guidance set out in Defra's Technical Guidance TG (16), is unlikely to exceed the short-term AQS objective of 200 $\mu\text{g}/\text{m}^3$.

Comment 2

The filter details were referenced in the original discharge submission report, section 4.00 Air Inlet and Exhaust Points and Filtration; however, this information has been further enhanced and clarified below.

NO₂ filtration is not required to the office mechanical ventilation plant as the annual mean concentration is less than 60 $\mu\text{g}/\text{m}^3$. This applicable to the roof air intakes and the air intakes at ground floor on the Morwell Street façade.

NO₂ filtration is not required to the future retail tenant mechanical ventilation plant as the annual mean concentration is less than 60 $\mu\text{g}/\text{m}^3$. This applicable to the air intakes louvre locations that are high level ground floor on the Tottenham Court Road façade.

NO₂ filtration is not required to the residential whole house ventilation plant to the Morwell Street façade as the annual mean concentration is less than 40 $\mu\text{g}/\text{m}^3$.

NO₂ filtration is required the residential whole house ventilation plant to the Tottenham Court Road façade as the annual mean concentration is greater than 40 $\mu\text{g}/\text{m}^3$.

For the particulate filtration (PMe) filtration requirement, the development is following the guidance set out in BS EN ISO 16890. This is notes for each plant in the table below.

The table below is an enhance of the table contained in section 4.00, Air Inlet and Exhaust Points and Filtration of the issue 1 of the Condition 29 Ventilation and Extraction Statement.



COMMERCIAL OFFICE			
Office Fresh Air Supply And Extract – AHU1 & AHU2			
Plant location	The roof plant enclosure		
Fresh air inlet	From the plant enclosure at roof level		
Exhaust air outlet	Within the plant enclosure at roof level		
Filters	The filters are integral to the air handling unit supply and extract sections		
	NO ₂	Not required based on the consented Air Quality Assessment results	
	PMe	Based on the recommendations of BS EN ISO 16890 for an outside air category of ODA 2 and a supply air category of SUP 2. See the specific plant details below	
Filtration efficiency	Inlet - Panel	:	ePM10 50% (M5)
	Inlet - Bag	:	ePM1 60% (F7)
	Extract - Bag	:	ePM10 50% (M5) for the protection of the thermal wheel
Basement Supply And Extract – AHU3			
Plant location	Basement B2 plant room		
Fresh air inlet	From the fresh air inlet plenum to Morwell Street		
Exhaust air outlet	To the exhaust air plenum to Morwell Street		
Filters	The filters are integral to the air handling unit supply and extract sections		
	NO ₂	Not required based on the consented Air Quality Assessment results	
	PMe	Based on the recommendations of BS EN ISO 16890 for an outside air category of ODA 2 and a supply air category of SUP 2. See the specific plant details below	
Filtration efficiency	Inlet - Panel	:	ePM10 50% (M5)
	Inlet - Bag	:	ePM1 60% (F7)
	Extract - Bag	:	ePM10 50% (M5) for the protection of the thermal wheel
Toilet Extract – EX01 & EX02			
Plant location	The roof plant enclosure		
Exhaust air outlet	Within the plant enclosure at roof level		
Filters	Not applicable, this is an exhaust air plant		



Building Manager's Toilet Extract – EX03	
Plant location	High level in the ground floor ceiling void
Exhaust air outlet	Via a façade louvre at high level ground floor in Morwell Street
Filters	Not applicable, this is an exhaust air plant
Cafe Toilet Extract – EX04	
Plant location	High level in the ground floor ceiling void
Exhaust air outlet	Via a façade louvre at high level ground floor in Morwell Street
Filters	Not applicable, this is an exhaust air plant
Refuse Extract – EX05	
Plant location	Basement B1 plant room
Exhaust air outlet	Via a façade louvre at high level ground floor in Morwell Street
Filters	Not applicable, this is an exhaust air plant
Firefighting Shaft Smoke Extract – EX FF1	
Plant location	The roof plant enclosure
Exhaust air outlet	Within the plant enclosure at roof level
Filters	Not applicable, this is an exhaust air plant
Basement Smoke Extract Fan – EX FF2	
Plant location	Basement B2 plant room
Exhaust air outlet	To the exhaust air plenum to Morwell Street
Filters	Not applicable, this is an exhaust air plant



Heat Recovery Ventilation Unit – Café Area – HRU 01			
Plant location	High level in the ground floor café ceiling void		
Fresh air inlet	Via a façade louvre at high level ground floor in Bayley Street		
Exhaust air outlet	Via a façade louvre at high level ground floor in Bayley Street		
Filters	The filters are integral to the proprietary heat recovery ventilation unit		
	NO ₂	Not required based on the consented Air Quality Assessment results	
	PMe	Based on the recommendations of BS EN ISO 16890 for an outside air category of ODA 2 and a supply air category of SUP 3, where the constraints of the proprietary unit allow. See the specific plant details below	
Filtration efficiency	Inlet - Panel	:	ePM1 55% (F7)
	Extract - Panel	:	ISO course (G4) for protection of the heat exchanger only
Heat Recovery Ventilation Unit – Building Manager Room – HRU 02			
Plant location	High level in the ground floor Building Manager Room ceiling void		
Fresh air inlet	Via a façade louvre at high level ground floor in Morwell Street		
Exhaust air outlet	Via a façade louvre at high level ground floor in Morwell Street		
Filters	The filters are integral to the proprietary heat recovery ventilation unit		
	NO ₂	Not required based on the consented Air Quality Assessment results	
	PMe	Based on the recommendations of BS EN ISO 16890 for an outside air category of ODA 2 and a supply air category of SUP 2, where the constraints of the proprietary unit allow. See the specific plant details below	
Filtration efficiency	Inlet - Panel	:	ePM1 55% (F7)
	Extract - Panel	:	ISO course (G4) for protection of the heat exchanger only



Retail Units		
Plant location	Future tenant plant within the retail unit demise	
Fresh air inlet	Louvres built into the Tottenham Court Road signage location/detail at high level ground floor	
Exhaust air outlet	Louvres built into the Tottenham Court Road signage location/detail at high level ground floor	
Filters	Part of the future retail tenant mechanical ventilation scheme.	
Filters	NO ₂	Not required based on the consented Air Quality Assessment results
	PMe	BS EN ISO 16890 compliant based on an outside air category of ODA 2 and a supply air category of SUP 3. To be provided as part of the future retail tenant fit-out scheme
Filtration efficiency	Part of the future retail tenant mechanical ventilation scheme.	
RESIDENTIAL		
Refuse Extract – EX06		
Plant location	High level in the ground floor refuse store	
Exhaust air outlet	Via a façade louvre at ground floor in Morwell Street	
Filters	Not applicable, this is an exhaust air plant	
Firefighting Shaft Smoke Extract – EX FF3		
Plant location	The roof plant enclosure	
Exhaust air outlet	Within the plant enclosure at roof level	
Filters	Not applicable, this is an exhaust air plant	
Whole House Ventilation Units (WHV)		
This is applicable to the apartments on the Tottenham Court Road facade		
Plant location	Within each residential unit services cupboard	
Fresh air inlet	Ventilation opening in the façade to each apartment	
Exhaust air outlet	Ventilation opening in the façade to each apartment	
Filters	NO ₂	Required based on the consented Air Quality Assessment results
	PMe	Based on the recommendations of BS EN ISO 16890 for an outside air category of ODA 2 and a supply air category of SUP 2, where the constraints of the proprietary unit allow. See the specific unit details below
Filters	The WHV units do not incorporate NO ₂ filtration. Therefore, a separate filter pack, which incorporates NO _x and PME filtration, shall be provided on the fresh air inlet connection to each WHV unit.	



	The WHV units incorporate inlet filters to the fresh air inlet and room extract connections to protect the integral plate heat exchanger.		
Filtration efficiency	Filter Pack - NOx	:	Gas Stage filters
	Filter Pack - ePM	:	ePM2.5 75% (F7)
	Inlet - Panel	:	ISO course (G4)
	Exhaust - Panel	:	ISO course (G4)
Whole House Ventilation Units (WHV)			
This is applicable to the apartments on the Morwell Street facade			
Plant location	Within each residential unit services cupboard		
Fresh air inlet	Ventilation opening in the façade to each apartment		
Exhaust air outlet	Ventilation opening in the façade to each apartment		
Filters	NO ₂	Not required based on the consented Air Quality Assessment results	
	PMe	Based on the recommendations of BS EN ISO 16890 for an outside air category of ODA 2 and a supply air category of SUP 2, where the constraints of the proprietary unit allow. See the specific unit details below	
Filters	The WHV units incorporate inlet filters to the fresh air inlet and room extract connections to protect the integral plate heat exchanger. The enhanced PME filtration standard has been specified for the Morwell Street façade.		
Filtration efficiency	Inlet - Panel	:	ePM10 50% (M5)
	Exhaust - Panel	:	ePM10 50% (M5)

Comment 3

Yes, the air has been defined as clean based on the explanation below.

From the 2020 dispersion modelling it was predicted that the worst-case concentration would be below 60 µg/m³ and, therefore, the short-term AQS objective would be achieved. As this is the objective that is applicable for office use (as users are only present temporarily and considered to be in good health so less sensitive to air pollution than the old and very young which the annual objective is designed to protect). So, while the air will not be completely free from pollution it is anticipated to be better than at road level so will achieve the short-term NO₂ and PM₁₀ AQS objectives (modelled annual mean NO₂ and PM₁₀ concentrations at Receptor P3 at 23.15 metres above ground level rather than at 1.5 metres were 46.7 µg/m³ and 21 µg/m³ So are in accordance with TG(16) guidance would be expected to achieve the short-term AQS objectives (note: TG(16) indicated that the daily PM10 objective will be achieved if the annual mean is <32 µg/m³)