



Tangmere

Air Quality Assessment
Addendum

March 2026

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1 Introduction

NRG Consulting have been commissioned to undertake an updated Air Quality Report for a proposed development located at **Tangmere, Willan Road, Broadwater Farm Estate, N17 6HF**.

The scheme benefits from Planning Permission; ref: HGY/2022/0823 and the description of development is:

Demolition of the existing buildings and structures and erection of new mixed-use buildings including residential (Use Class C3), commercial, business and service (Class E) and local community and learning (Class F) floorspace; energy centre (sui generis); together with landscaped public realm and amenity spaces; public realm and highways works; car-parking; cycle parking; refuse and recycling facilities; and other associated works. Site comprising: Tangmere and Northolt Blocks (including Stapleford North Wing): Energy Centre; Medical Centre; Enterprise Centre; and former Moselle school site, at Broadwater Farm Estate.

This report seeks to discharge **Planning Condition 29** for **Tangmere** and states:

An updated Air Quality Assessment shall be submitted to the Local Planning Authority for its written approval prior to the commencement of above ground works for the development hereby approved.

The updated AQA shall include:

- An addendum air quality assessment of the proposed development taking into consideration the likely operational impact of the development beyond the current 7th floor as submitted for the purposes of reaching a conclusion on development significance effects in the actual site and overall local air quality.*
 - Monitoring will need to be undertaking at or within the close proximity of the site itself rather than relying purely on baseline monitoring farther away from the site nor Defra mapped background concentrations.*
 - Provision of Predicted NO₂ Concentrations beyond 2020 as currently submitted. This needs to be submitted for building operational commencement year and a couple of years following the completion of development.*
- Once approved the development shall be completed in accordance with the approved details.*

Reason: To Comply with the air quality requirements of the London Plan and GLA Sustainable Design and Construction SPG.

The development lies within the **London Borough of Haringey** and is situated within an Air Quality Management Area (AQMA).

The pollutants modelled as part of this assessment are nitrogen oxides (NO_x).

Due to this report being an Addendum to the planning approved AQA, the legislation section has been reduced.

Executive Summary

Based on the findings of this report relating to the air quality levels at the proposed development, it is considered that Air Quality levels are below the national objectives and therefore this Condition can be discharged.

Updated data has been provided and comments regarding proximity and height are not relevant to the Tangmere phase of the scheme. This is due to:

- Tangmere does not contain a 7th floor.
- Tangmere is close to existing monitoring locations thus the figures are considered robust and applicable.

2 Baseline Assessment

2.1 Air Quality Strategy – Pollutants and Legislation

The table below provides the UK Air Quality Objectives for NO₂, PM₁₀ and PM_{2.5} are:

Pollutant	Objective	Concentration measured as
Particles (PM ₁₀)	50µg/m ³ not to be exceeded more than 35 times a year	24 hour mean
	40µg/m ³	Annual mean
Particles (PM _{2.5})	20µg/m ³ (10µg/m ³ by 2040)	Annual Mean
Nitrogen Dioxide (NO ₂)	200µg/m ³ not to be exceeded more than 18 times a year	1 hour mean
	40µg/m ³	Annual mean

Table 2.1: UK Air Quality Objectives for Nitrogen Dioxide and Particulate Matter

2.2 Local Area Designations

Air Quality Focus Area

The site is not in an Air Quality Focus Area.

Air Quality Management Area

The site (and the whole borough of Haringey) is in an Air Quality Management Area (AQMA).

2.3 Defra - Background Concentrations

Background concentrations have been obtained from Defra¹. Predictions of total pollutant concentrations include contributions from local emissions sources (such as roads, chimney-stacks, etc.) and local background concentrations. In many situations, the background contribution may represent a significant or dominant proportion of these concentrations. Background concentrations for regulated pollutants are expected to decline in future years as a result of government policies/legislation to reduce pollution emissions.

In order to establish a prediction of total concentrations of pollutants, road source contributions are combined with a background concentration. LAQM.TG(19) recommends the use of empirically derived national background estimates available from the Defra website. These 1 km x 1 km grid resolution maps are currently derived from a base year of 2024 (for NO_x, NO₂, PM₁₀ and PM_{2.5} only), and results for the grid where the scheme is located are provided in the table below.

Location	Pollutant	Data for 2024 (µg/m ³)
Proposed Development Coordinates: Easting: 533055 Northing: 190332	NO ₂	17.78
	NO _x	24.68
	PM ₁₀	14.80
	PM _{2.5}	9.06

Table 2.2: Background NO_x, NO₂, PM₁₀ and PM_{2.5} Concentrations

¹ <https://uk-air.defra.gov.uk/data/gis-mapping/>

2.4 London Atmospheric Emissions Inventory (LAEI)

The LAEI 2022 is the latest version of the London Atmospheric Emissions Inventory and shows emissions over a narrower grid than the DEFRA model (20m x 20m). Emissions estimates of key pollutants (NO₂, PM₁₀, PM_{2.5}) by source type are included for the base year 2022 and forecast years 2025.

These emissions have been used to estimate ground level concentrations of key pollutants NO_x, NO₂, PM₁₀ and PM_{2.5} across Greater London for years using an atmospheric dispersion model.

Location	Pollutant	Data for 2022 (µg/m ³)	Data for 2025 (µg/m ³)
Proposed Development	NO ₂	20.62	19.35
	PM ₁₀	15.16	15.25
	PM _{2.5}	9.10	9.56

Table 2.3: Background NO₂, PM₁₀ and PM_{2.5} Concentrations - LAEI



Figure: LAEI Maps (2025) – Top: NO₂ Bottom: PM_{2.5} and PM₁₀

2.5 Local Air Quality Monitoring

Haringey – Air Quality Status Report

Each year, local authorities in London publish an annual report of the air quality monitoring in the borough. This report includes the latest published report, the *London Borough of Haringey Air Quality Annual Status Report for 2024*. This was published in May 2025 and contains verified and adjusted data and thus can be considered reference grade.

London Borough of Haringey – Automatic Monitoring

The local authority undertakes monitoring of NO₂ via automatic monitoring stations. The closest ones to the proposed development are displayed in the table below.

Monitoring ID	Location	Distance from Site	NO ₂ (µg/m ³)	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)
HG005	639 High Road	2km	25	13	9
Annual Mean NO ₂ Ratified and Bias-adjusted Monitoring Results					
Table 2.4: Modelled Verification Locations – Automatic Monitoring – Data from 2024					

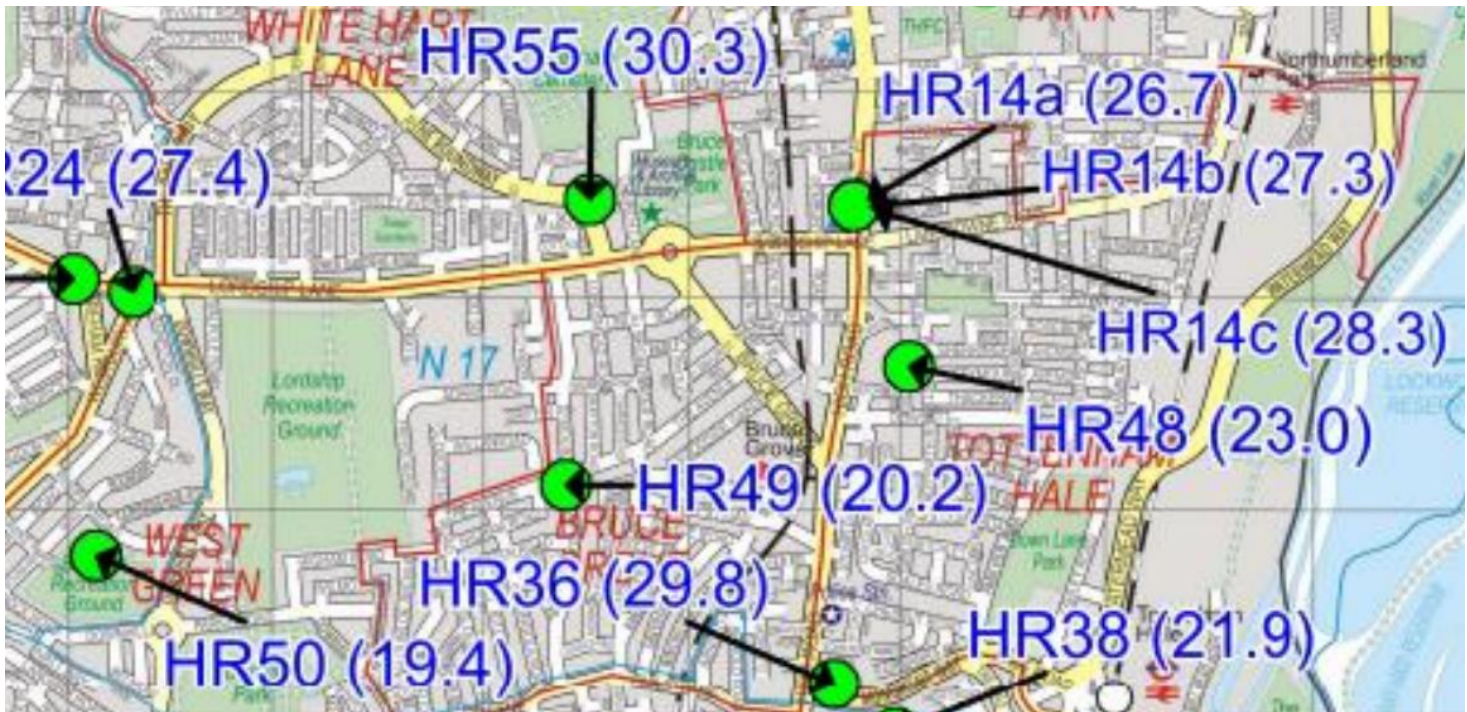


Figure: Location of Nearest Automatic Monitoring

London Borough of Haringey – Non-Automatic Monitoring

Haringey operate a network of diffusion tubes within the borough. Details of the closes

Monitoring ID	Location	Distance from Site	NO ₂ (µg/m ³)	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)
HR49	151 Mount Pleasant Road, N17 6TQ	230m	19	N/A	N/A
HR55	Risley Ave, Primary, N17 7AB	400m	23.7	N/A	N/A
Annual Mean NO ₂ Ratified and Bias-adjusted Monitoring Results (0.85)					
Table 2.5: Modelled Verification Locations – Non-Automatic Monitoring – Data from 2024					

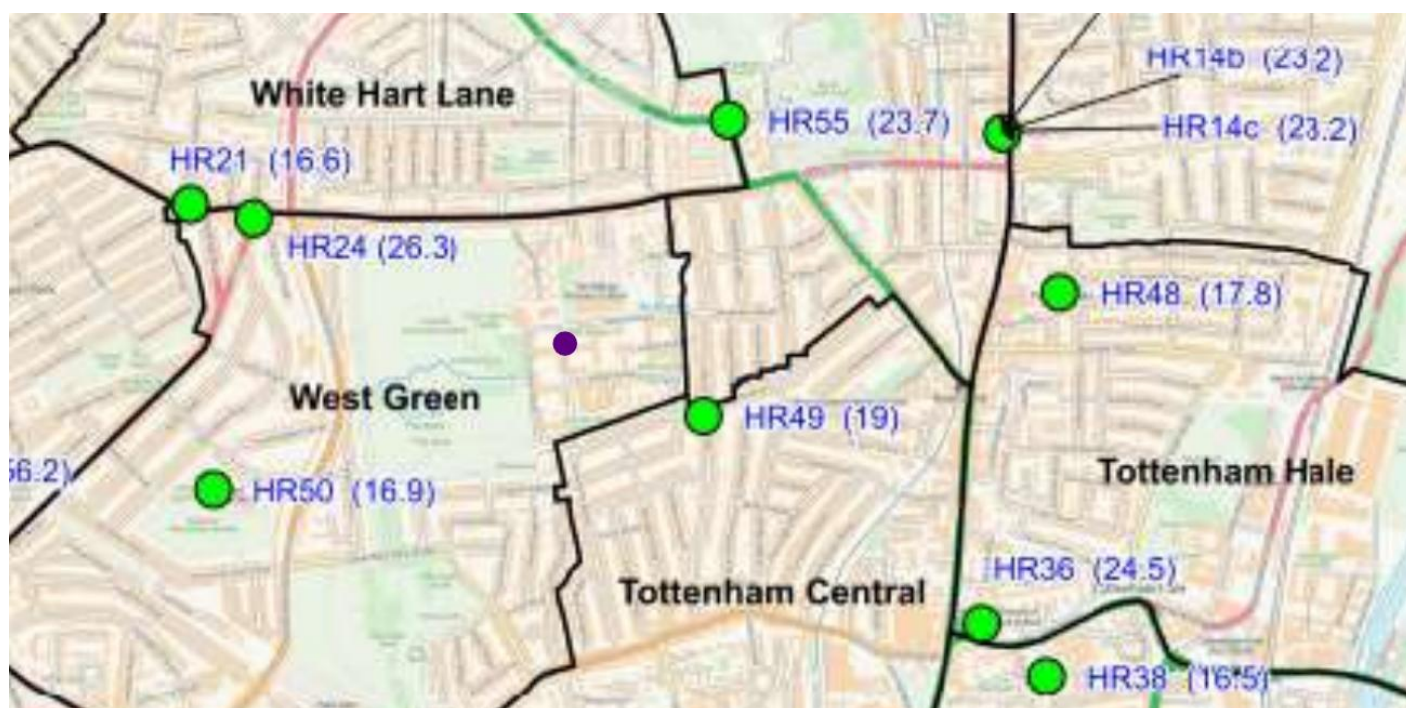


Figure: Diffusion Tube Network – Haringey – Site is where the “17” is. Figures denoted are the annual NO₂ figures for 2023.

Third Party Services

As well as directly under their control, other public and private sectors have begun monitoring air quality data. Known sources of these including *Breathe London*, the *London Air Quality Map* and *IQAir*.

Local Monitoring – Haringey Fixers (Breathe London)

Since the planning report, a monitor on Adams Road within 50m of the development site has been installed by Haringey Fixers. This roadside monitor was installed on the 25th April 2023. The monitor experienced periods of downtime before being taken offline on 1st January 2026. Raw figures for 2024 and 2025 were:

Year	NO ₂ (µg/m ³)	PM _{2.5} (µg/m ³)
2024	22	8
2025	21	11

3 Operational Phase (Traffic Emissions) Assessment

3.1 Modelled Scenarios

Two scenarios have been modelled as part of this assessment. These are as follows:

- Scenario 1 (2027) – Development completion year
- Scenario 2 (2030) – A couple of years post-development

Data used for these scenarios can be seen in the below table:

Datapoint	Latest Available Year
Meteorological Data (Met Office and Stations)	2024
Traffic Data (Road Vehicles – DfT)	2026 (projected to 2029 using TEMPRO)
Background Concentrations (DEFRA)	2024
Monitoring Data (Diffusion Tubes & Automatic Monitoring)	2024
Table 3.1: Modelled Scenario Data	

ADMS-Roads

Modelling the impact of traffic emissions on the proposed development will be undertaken using the latest version of the ADMS-Roads model². ADMS-Roads is significantly more advanced than that of most other air dispersion models in that it incorporates the latest understanding of the boundary layer structure and goes beyond the simplistic Pasquill-Gifford stability categories method with explicit calculation of important parameters. The model uses advanced algorithms for the height-dependence of wind speed, turbulence and stability to produce improved predictions.

Emission Factors

Defra have provided an updated Emission Factors Toolkit (Version 12) in December 2023 which incorporates updated NO_x emissions factors and vehicle fleet information³. These emission factors have been integrated into the latest ADMS-Roads modelling software.

Traffic Data

Baseline traffic flows along the local roads are available from the Department for Transport (DfT)⁴. Baseline data has been projected to 2027 and 2030 from existing or converted 2024 data.

Projection of traffic data has been undertaken using growth factors specific to the scheme, obtained from TEMPro⁵. The projected flow rates are provided in this report. It is assumed that the percentage heavy-duty vehicles (HDV) and speed will remain unchanged in future years.

The modelled speeds have been derived from the London Atmospheric Emissions Inventory (LAEI), specifically for major road networks and local roads. However, where a link approaches a junction a speed of 15 kph has been modelled in order to represent queuing traffic at a junction.

² Model Version: 5.0.0.1 Interface Version 5.0.0.5313 (16/02/2020)

³ <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/>

⁴ <http://www.dft.gov.uk/traffic-counts/>

⁵ TEMPro (Trip End Model Presentation Program) version 7, Department for Transport

Traffic Flows

Baseline traffic flows along the local roads are available from the Department for Transport (DfT)⁶. Baseline data has been projected to 2027 from converted or existing 2022 data. Projection of traffic data has been undertaken using growth factors specific to the Local Authority obtained from TEMPro⁷. The projected flow rates are provided below. It is assumed that the percentage HDV and speed will remain unchanged in future years.

Link Name	AADT - 2024	AADT - 2029	HDV (%)	Speed (kph)
A10	15383	15917	1.96	32
A109	15994	16549	1.00	32
A109 (west)	14470	14972	1.62	32
A10 (High Road)	23385	24196	3.19	32
Risley Avenue	719	744	1.11	32
The Roundway	28737	29734	2.01	32

Table 3.2: Background NO_x, NO₂, PM₁₀ and PM_{2.5} Concentrations

Meteorological Data

Hourly sequential meteorological data has been used from **London City meteorological station** has been used. Wind speed and direction data has been plotted as a wind rose in the figure below.

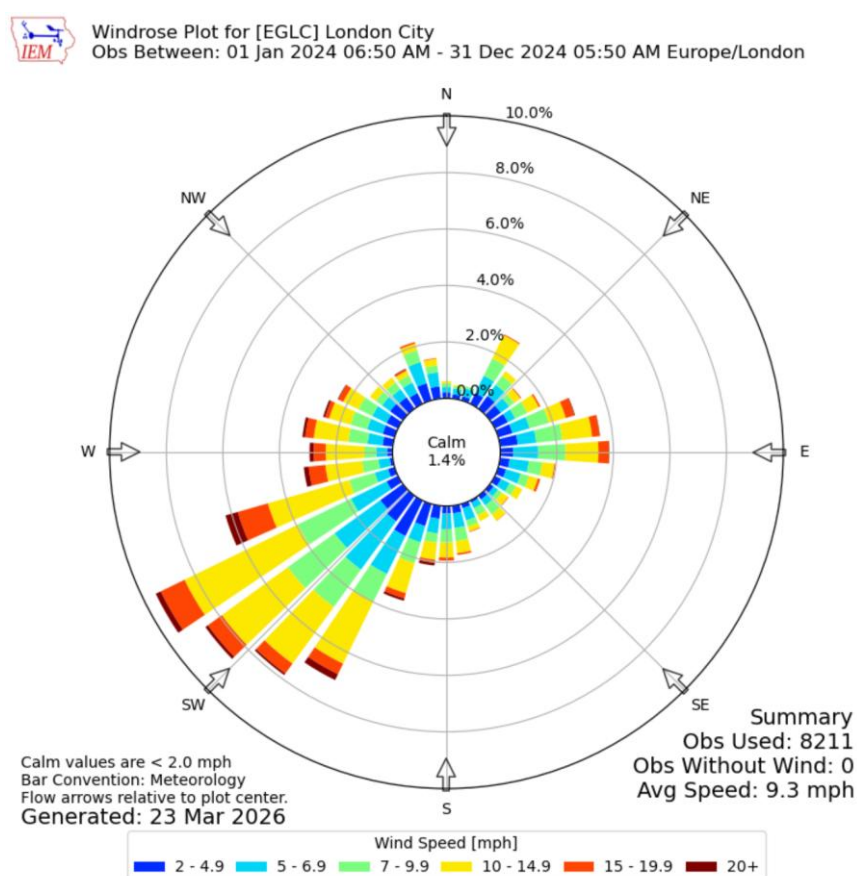


Figure 3.1: Wind Speed and Direction Data, London City (2024)

⁶ <http://www.dft.gov.uk/traffic-counts/>

⁷ TEMPro (Trip End Model Presentation Program) version 7, Department for Transport

3.2 Model Output

NO_x/NO₂ Relationship

Following recent evidence that shows the proportion of primary NO₂ in vehicle exhaust has increased⁸. As such, a new (version 9) NO_x to NO₂ calculator has been devised⁹. This new calculator has been used to determine NO₂ concentrations for this assessment, based on predicted NO_x concentrations using ADMS-Roads. Converted NO₂ concentrations are initially compared to local monitoring data in order to verify the model output. If the model performance is considered unacceptable then the NO_x concentrations are adjusted before conversion to NO₂.

On-Site Receptor Locations

In order to assess the potential impact of the traffic emissions from the local road network, a number of receptors have been identified representing the different facades of the proposed development. These have been modelled at a height of 1.5m on the ground floor to the rear and at 4.5m at the front of the site to represent a worst-case location (as there is no residential on ground floor at the site frontage.)



Figure 3.2: Modelled Receptor Locations

⁸ Trends in Primary Nitrogen Dioxide in the UK, Air Quality Expert Group, 2007

⁹ https://laqm.defra.gov.uk/documents/Updated_NOx_from_NO2_Calculator_fno2_v8.1.pdf: <https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html#NOxNO2calc>.

3.3 Operational Phase

The significance of emissions will be determined by comparing the predicted results to the Air Pollution Exposure Criteria (APEC) detailed in the Air Quality and Planning Guidance written by the London Air Pollution Planning and the Local Environment (APPLE) working group¹⁰. The Air Pollution Exposure Criteria is considered appropriate to describe the significance of the impacts predicted, together with an indication as to the level of mitigation required in order for the development to be approved. The APEC table is provided below.

APEC Category	NO ₂	PM ₁₀	Recommendations
A	>5% below national annual mean objective	>5% below national annual mean objective	No air quality grounds for refusal; however, mitigation of any emissions should be considered.
		>1-day less than national 24-hour objective	
		>1-day more than national 24-hour objective	
Table 3.3: Air Pollution Exposure Criteria (APEC)			

3.4 Impact of Vehicle Emissions

Nitrogen Dioxide

Predicted annual mean concentrations for NO₂ in **2027** and **2030** are provided in the table below. As mentioned, NO₂ concentrations have been calculated from the predicted NO_x concentrations using the latest NO_x-NO₂ conversion spreadsheet available from the Air Quality Archive.

Receptor ID	2027	2030
	Locations as per 3.2	Locations as per 3.2
R1	25.6	25.8
R2	26.1	26.3
Objective	40	
Table 3.4: Predicted NO ₂ Concentrations, Annual Mean (µg/m ³)		

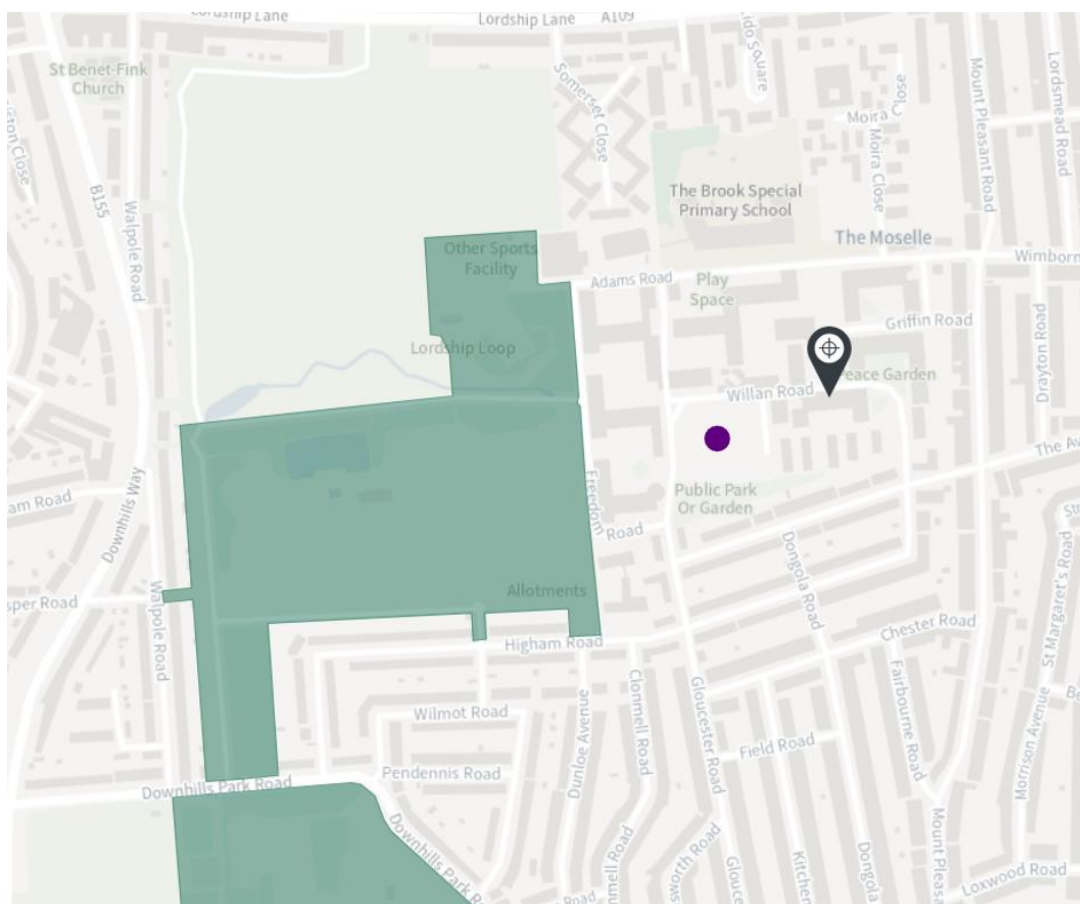
Results show that the modelled concentrations are far below the national objectives. This is as per the trend for decreasing air quality emissions in the local borough as per the automatic and non-automatic monitoring data.

¹⁰ Air Quality and Planning Guidance, written by the London Air Pollution Planning and the Local Environment (APPLE) working group, January 2007

3.5 Impacts on Designated Nature Conservation Sites

Based on this guidance, and using the tool provided by DEFRA (Magic¹¹) there are no European or UK Designations (Statutory – NNRs, Areas of Outstanding Natural Beauty, Ramsar Sites, SSSIs, SACs, SPAs) within 200m of the site.

The closest area of interest ecologically is the **Lordship Lane Recreational Ground (SINC)**. This is a non-statutory designation and based on the distance, will not be impacted by the development at Tangmere post dust-mitigation measures.



3.6 Broadwater Farm Estate - Energy Centre

The original planning application had reviewed the impacts of a new centralised energy-centre for the Broadwater Farm Estate. Currently this is mooted to be included within the Northolt Phase. Its composition is currently unknown but it can be reasonably assumed to be heat-pump led and to avoid fossil fuels.

Impact on Building Emission Benchmarks

The current on-site proposals are for 100% of the heating and hot water demand to be supplied from ASHP here so zero-emissions are generated for the Building Emission Benchmarks.

3.7 Traffic Emission Benchmarks (TEB)

The development is car-free.

¹¹ <https://magic.defra.gov.uk/MagicMap.aspx>

4 Conclusion

Impact of Vehicle Emissions

Predicted concentrations at all the modelled receptors fall within APEC Category A, which states that there are “no air quality grounds for refusal, however, mitigation of any emissions should be considered”.

Air Quality

Based on the results of this assessment there is no need for mitigation for air quality purposes.

Air Quality Neutral

The site is Air Quality Neutral.

Overall Summary

The development at Tangmere will have no impact on local air quality.

Based on the findings of this report relating to the Air Quality levels at the proposed development, it is considered that Air Quality is within the national objective. Updated data has been provided and clarifications made for the Tangmere phase of the BWF development and thus on this basis, it is the authors opinion that this report is sufficient to discharge Planning Condition 29.

