Memorandum

To: Kidbrooke Partnership LLP

From: SLR Consulting

Date: 14th October 2019 **Ref:** 416.07967.00002

Subject: ***KIDBROOKE STATION SQUARE: APPLICANT'S POSITION STATEMENT ON RBG'S REFUSAL RESOLUTION – SUPPLEMENTARY STATEMENT ON AIR QUALITY***
RBG APPLICATION REFERENCE: 18/4187/F & GLA/3757A/02

1.1 Site Specific Air Quality Monitoring

Refusal Resolution (4) states:

> *"The information provided fails to adequately demonstrate that the future occupants of the proposed development would be sufficiently protected from poor air quality impacts resulting from its location and the siting of residential buildings adjoining busy main roads. The application is therefore contrary with policy 7.14 of the London Plan (2016) and policy E(c) of the Royal Greenwich Local Plan: Core Strategy with Detailed Policies (2014)."*

A Position Statement, submitted to the Greater London Authority ('GLA') on 24th September 2019 on behalf of the Kidbrooke Partnership LLP as the Applicant, provides information in response to Refusal Resolution (4). The Air Quality content of the Position Statement reaffirms the consultation response issued by the Royal Borough of Greenwich (RBG) Environmental Health (Pollution and Residential) Services department, which states:

> *"The air quality and noise impact assessments have been independently reviewed and the methodology and findings are confirmed to be appropriate. Therefore the conclusions within the assessments are not disputed. Furthermore, the Royal Borough's Environmental Health team have reviewed the proposal and not raised any objections; however conditions are recommended for compliance of the details to ensure the building specifications are adequate. As such, subject to these conditions it is considered that the proposed development would not be subject to unacceptable levels of noise or air pollution". (Officers Report, para 15.8.4) (Our emphasis).*

Notwithstanding the above findings, the Applicant has commissioned a period of air quality monitoring at the Kidbrooke Station Square (KSS) application site, to establish site-specific baseline annual mean nitrogen dioxide (NO_2) concentrations.

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Air quality monitoring is being undertaken using passive diffusion tubes over a 3-month period following the National Diffusion Tube Monitoring Network calendar, as stipulated by DEFRA[1]. Monitoring commenced on w/c 03/08/2019 (in line with the 'August' exposure period) and will complete w/c 04/11/2019 (in line with the 'November' exposure period). Diffusion tubes were supplied and analysed by Gradko International, which participates in the National Diffusion Tube Inter-laboratory scheme. Gradko International is a UKAS accredited laboratory, which ensures conformance with the requirements of ISO/IEC 17025. All diffusion tubes used in the monitoring study were prepared using 20% triethanolamine (TEA) absorbent in water with NO_2 concentrations determined through spectrophotometrical analysis. It is noted that RBG also use Gradko International for the supply / analysis of diffusion tubes as part of their own air quality monitoring programme.

The monitoring and assessment has been undertaken with reference to the following documents:

- London Local Air Quality Management Technical Guidance (LLAQM.TG(16)), supplemented by Local Air Quality Management Technical Guidance (LAQM.TG(16));
- Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users Report to DEFRA and the Devolved Administrations. ED48673043. Issue 1a, Feb 2008; and
- DEFRA LAQM webpages - diffusion tubes.

Diffusion tube monitoring is currently being undertaken at 12 locations (in duplicate) to monitor baseline NO_2 concentrations at the application site. The Design Manual for Roads and Bridges (DMRB)[2] states that any receptor within 200m of a road source is potentially affected by road traffic emissions from that source, with contributions reducing at increasing distance from the kerbside of the road. Monitoring locations are therefore positioned in close proximity to the A2, A2213 and Henley Cross to assess baseline concentrations across the application site, and to provide an assessment of contributions from road traffic emissions on the surrounding highway network. A series of transect monitoring locations have been considered to assess annual mean NO_2 concentration reduction across the application site at increasing distance from the surrounding highway network (principally the A2 and A2213).

Monitoring sites were selected in accordance with the methodology outlined within DEFRA guidance[3,4]. This monitoring is being undertaken to address the RfR4 reference to 'poor air quality' i.e. to assess site-suitability in terms of potential exceedances of the annual mean AQO across the application site. Reference should be made to Appendix A for an illustration of the monitoring locations across the application site relative to the surrounding road network, including an illustration of the distance between each monitoring location within discrete transects.

Monitoring commenced on-site on 05/08/2019. At the time writing, only 2-months' data is available corresponding to the 'August' and 'September' 2019 exposure periods: it is noted that LAQM.TG(09) guidance requires for a minimum 3-month' period mean dataset in order to calculate a corresponding annual mean concentration. Notwithstanding, to provide an indication of site-specific NO_2

[1] https://laqm.defra.gov.uk/diffusion-tubes/diffusion-tubes.html.

[2] DMRB, Volume 11, Section 3, Part 1, HA 207/07 - Air Quality, Highways Agency, 2007.

[3] Diffusion tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users, DEFRA (2008), Section 3.2 p. 8.

[4] LAQM.TG(16), DEFRA (2016), Annex 2: Air Quality Monitoring.

concentrations a review of the 'August' and 'September' period mean concentrations has been undertaken to identify likely annual mean NO_2 concentrations at the application site and to inform this Position Statement.

The August and September 'period mean' concentrations are not directly comparable with annual mean AQO. Therefore, all monitoring results have been annualised based upon the methodology contained within LAQM.TG(16)[5]. The approach is based on the principle that patterns in pollutant concentrations are usually consistent across broad regions and therefore considers the relationship between period means and annual means at monitoring stations in the same region as the site of interest. Annualisation has been completed using continuous monitoring data from the following locations

- London N Kensington Automatic Urban and Rural Network (AURN);
- London Bloomsbury AURN;
- London Westminster AURN;
- London Eltham AURN; and
- Lewisham Catford automatic monitor.

An average annualisation factor from the above monitoring locations of 1.23 has been calculated corresponding to the August and September 2019 diffusion tube exposure period.

The diffusion tube monitoring datasets have further been 'bias corrected' in order to calculate a true ambient concentration, following LAQM.TG(16) guidance[6]. A bias correction factor of 0.92 has been calculated and applied to the annualised dataset obtained from the National diffusion tube collocation study for all Local Authorities using the 20% TEA absorbent in water preparation, as prepared and analysed by Gradko[7].

Annualised and bias corrected NO_2 concentrations based upon the August and September period mean monitoring dataset are presented in Table 1.

Table 1
Site-Specific Baseline NO_2 Concentrations (monitoring to date – subject to change): KSS

Monitoring Location	Annualised and Bias Corrected NO_2 Concentration (µg/m^3)	Percentage of the Annual Mean AQO (%) [(A)]
Transect 1.1	26.8	67.1
Transect 1.2	25.2	63.0
Transect 2.1	25.1	62.8
Transect 2.2	25.9	64.8
Transect 2.3	24.3	60.8
Transect 3.1	32.9	82.3
Transect 3.2	25.5	63.8

[5] LAQM.TG(16), DEFRA (2016), Box 7.10, p.7-56.

[6] LAQM.TG(16) Box 7.11 – Choice of NO_2 bias adjustment factor, p7-59.

[7] National Diffusion Tube Bias Adjustment Factor Spreadsheet version 09/19. http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html.

Transect 3.3	26.1	65.3
A2213 Junction 1	29.1	72.7
A2213 Junction 2	22.1	55.4
Henley Cross 1	27.9	69.7
Henley Cross 2	31.6	79.1
Note: (A) Comparing against the NO_2 annual mean AQO of 40µg/m^3.		

Table 1 illustrates that annualised and bias corrected NO_2 concentrations are not in excess of the annual mean AQO at any location across the application site, based upon an analysis of the August and September period monitoring data. The maximum annualised and bias corrected NO_2 concentrations is 32.9µg/m^3 representing 82.3% of the AQO, as monitored at Transect 3.1.

It is noted that the 'Transect 3.1' monitoring location of the maximum annualised and bias corrected NO_2 concentration corresponds to the northern boundary of the application site, as illustrated within 'Drawing AQ-2Air Quality Monitoring Locations with Reference to KSS' presented within Appendix A. This Transect 3.1 monitoring location is not a location of 'relevant exposure' to the annual mean AQO nor is it indicative of future exposure to any residential block within the application site. Monitored concentrations at locations corresponding to the façade of residential blocks proposed within the application site (i.e. locations of 'relevant exposure' to the annual mean AQO) are lower than the maximum monitored concentration. These include:

- Monitoring ID: 'Henley Cross Idling Emissions 2', which is representative of the southern façade of Block A (in proximity to the rail line);
- Monitoring ID: A2213 Junction 1', which is representative of the western façade of Block B (in proximity to the A2213 / Henley Cross junction);
- Monitoring ID: Transect 3.2, which is representative of the northern façade of Block C (in proximity to the A2213); and
- Monitoring ID: Transect 1.2, which is representative of the northern façade of Block H (in proximity of the A2).

At each of these 'relevant exposure' monitoring locations there is greater headroom between monitored baseline NO_2 concentrations and the annual mean AQO, in comparison to the maximum monitored concentration.

1.1.1 Site Specific Air Quality Monitoring – Conclusion

Site-specific air quality monitoring currently underway at the application site demonstrates no exceedences of the annual mean NO_2 AQO at any location across the application site.

The results of this site-specific air quality monitoring corroborate the findings of the Air Quality Impact Assessment and Air Quality Chapter to the Environmental Statement (ES) which concluded no predicted exceedances of the annual mean NO_2 AQO at any location at any location across the application site. Therefore, baseline NO_2 concentrations illustrate there is no constraint to the proposed use / location of residential blocks at any location across the application site.

1.2 Silvertown Tunnel: Consideration of Potential Cumulative Effects

A review of the GLA Stage II Referral planning report for the KSS includes detail on the '*Response to consultation*' for the application including comments from The Right Honourable Clive Efford, Member of Parliament for Eltham whom objected to the scheme including on grounds of "*air pollution arising from neighbouring roads, which will worsen due to the Silvertown Tunnel*". A review of the consented Silvertown Tunnel scheme has been undertaken to determine potential cumulative impacts on air quality at the application site.

The extent of the 'affected road network' for the Silvertown Tunnel scheme (i.e. where change in road traffic movements during the operational phase of the Silvertown Tunnel scheme are above the applied Design Manual for Roads and Bridges (DMRB) threshold and thus require further assessment) includes that section of the A2 at Kidbrooke immediately to north of the junction with the A2213 Kidbrooke Park Road (as shown on Drawing 6.1C of the Silvertown Tunnel ES).

The Silvertown Tunnel Air Quality Impact Assessment did not predict any potential impacts at receptor locations corresponding to the application site as part of the dispersion modelling study– however, as the Silvertown Tunnel ES predates the proposals for the KSS scheme there would be no requirement to do so. Notwithstanding, potential impacts have been considered at receptor locations adjacent to the A2 corresponding to existing residential dwellings located including those located off Kidbrooke Way (receptor ID R46 as shown on Drawing 6.2N of the Silvertown Tunnel ES). This R46 receptor is situated in a similar setting / stand-off buffer distance to the west of the A2 to residential blocks proposed as part of the KSS scheme. Therefore, a review of the predicted operational phase impacts on air quality at the R46 receptor location has been undertaken in order to consider potential cumulative impacts at the application site arising from the operation of the Silvertown Tunnel scheme.

Paragraph 6.6.40 of the Silvertown Tunnel ES states the following impact on annual mean NO_2 concentrations:

> *"R46 is located in Kidbrooke and has an assessed case concentration of 33.2 µg/m^3 but the change (increase of 0.4 µg/m^3) is considered to be imperceptible."*

To reflect the Silvertown Tunnel scheme as part of a cumulative impact assessment, should an incremental annual mean NO_2 concentration of 0.4µg/m^3 be applied to the predicted concentrations at the application site, there would remain to be **no** predicted exceedences of the annual mean NO_2 Air Quality Objective (AQO) at any residential block on the application site as part of the site-suitability assessment. An updated cumulative annual mean NO_2 concentration of 37.1µg/m^3 would be predicted on the ground-floor of Block B of the scheme, representing 92.8% of the annual mean AQO (existing concentration of 36.7µg/m^3 as presented in Table 13-23 of the ES for the KSS scheme + and incremental Silvertown Tunnel concentration of 0.4µg/m^3 = 37.1µg/m^3). Therefore, as part of the site-suitability assessment the effect on air quality would remain to be 'not significant'.

It is noted that the Silvertown Tunnel ES assumed a 2021 development opening year, with the Air Quality Chapter to the ES applying corresponding 2021 road traffic emission factors (Paragraph 6.3.86 of the Silvertown Tunnel ES) and 2021 source-sector adjusted background air pollutant concentrations (Paragraph 6.3.94 of the Silvertown Tunnel ES).

The updated timeline for the Silvertown Tunnel scheme states 2025 as the earliest opening year for the scheme[8], however, this programme is now subject to a legal challenge. Therefore, following emission factor toolkit (EFT) and DEFRA mapped background concentration projections, a later scheme opening year would result in lower road vehicle emission factors and applied mapped background concentrations. Therefore, actual impacts on air quality during the operation of the Silvertown Tunnel scheme in a 2025 (or later) opening year, may be lower than those predicted as part of the ES.

1.2.1 Silvertown Tunnel: Consideration of Potential Cumulative Effects

A review of the Silvertown Tunnel scheme indicates and potential for cumulative impacts on air quality at the application site remains to indicate no predicted exceedences of the annual mean NO_2 AQO.

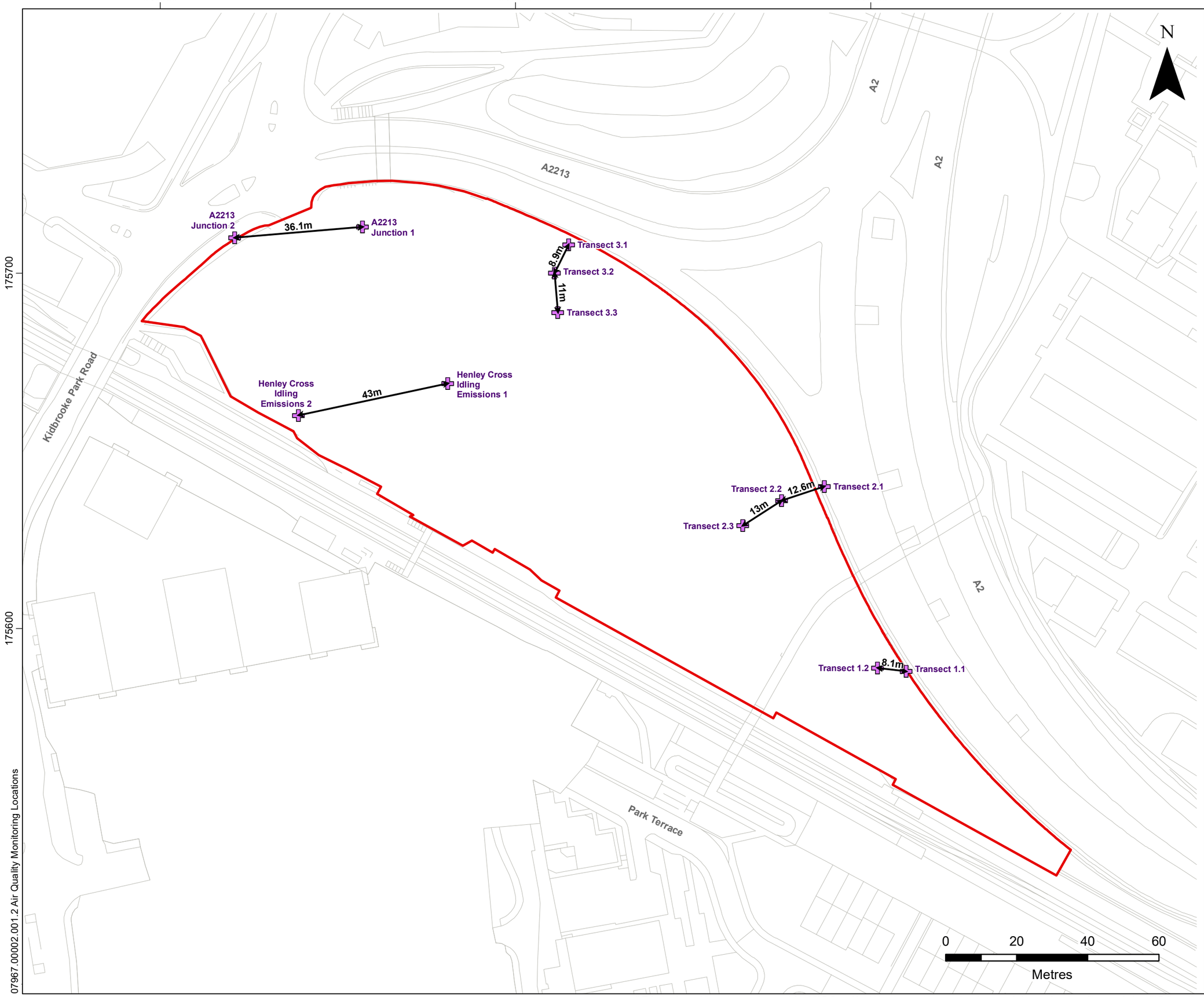
Therefore, as part of the site-suitability assessment the cumulative effect on air quality would remain to be 'not significant' and illustrate there is no constraint to the proposed use / location of residential blocks at any location across the application site.

1.3 Conclusion

Accordingly, the application complies with policy 7.14 of the London Plan (2016), policy SI1 of the draft New London Plan and policy E(c) of the Royal Greenwich Local Plan: Core Strategy with Detailed Policies (2014).

[8] https://tfl.gov.uk/travel-information/improvements-and-projects/silvertown-tunnel - accessed October 2019.

APPENDIX A – DRAWINGS



LEGEND

Site Boundary

AQ Monitoring Points - 2 Tubes at Each Location

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4/5 LOCHSIDE VIEW
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KIDBROOKE STATION SQUARE

PHASE 0002

DRAWING AQ-1
AIR QUALITY MONITORING LOCATIONS

Scale 1:1,000 @ A3

Date OCTOBER 2019

07967.00002.001.2 Air Quality Monitoring Locations

540900
541000
541100
175700
175600

A2213
A2
Kidbrooke Park Road
Park Terrace

A2213 Junction 2
A2213 Junction 1
Transect 3.1
Transect 3.2
Transect 3.3
Henley Cross Idling Emissions 1
Henley Cross Idling Emissions 2
Transect 2.1
Transect 2.2
Transect 2.3
Transect 1.2
Transect 1.1

N

0 20 40 60
Metres

LEGEND

Site Boundary

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KIDBROOKE STATION SQUARE

PHASE 0002

DRAWING AQ-2
AIR QUALITY MONITORING LOCATIONS WITH REFERENCE TO KSS

Scale 1:1,000 @ A3

Date OCTOBER 2019

07967.00002.002.1 Air Quality Locations with Reference to KSS