



**Air Quality Note:  
Tavistock Place Traffic  
Order DPI/X5210/17/8**

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October 2017



Experts in air quality  
management & assessment

## Document Control

<b>Client</b>	Imperial London Hotels Limited	<b>Principal Contact</b>	John Russel (Motion)
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### Document Status and Review Schedule

<b>Report No.</b>	<b>Date</b>	<b>Status</b>	<b>Reviewed by</b>
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# 1 Introduction

1.1 The Proof of Evidence of Adam Webber, paragraph 3.9 (page 18), states that

*“The reduction in Camden’s overall average NO<sub>2</sub> levels (per diffusion tube data) for all sites monitored across the borough between 2010 and 2016 is 4.5% (Appendix 1, Table D). Compared with the figures set out in 3.8, the reductions in levels in the Trial area are therefore much higher than the reductions that have been seen overall across the borough; the Trial may have helped contribute towards this.”*

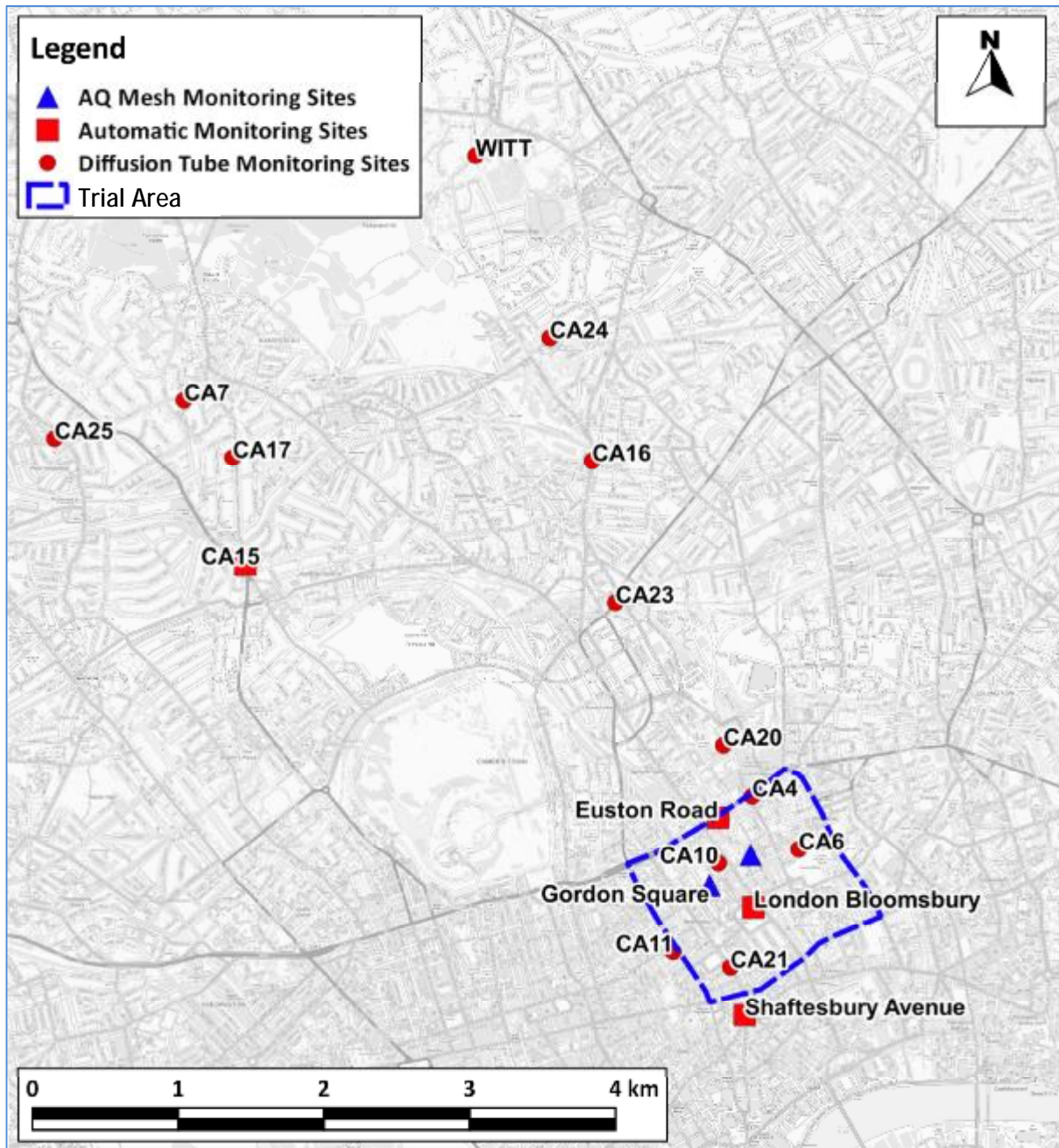
1.2 The 4.5% is contrasted with values in paragraph 3.8, which are quoted as being up to 27.8% in the Trial Area.

1.3 Appendix 1 does not actually set out the basis of 4.5%; it just sets out the measured annual mean concentrations at the sites. I have therefore carried out a more detailed assessment of the results, which does not support the statement in Mr Webber’s paragraph 3.9.

# 2 Assessment of Trends

2.1 My analysis is based on the annual mean nitrogen dioxide concentration data presented in Table 2, of Appendix 1, of Mr Webber’s proof of evidence. I have examined the trends over the period 2010 to 2016 for the Trial Area, and the sites away from the Trial Area. The locations of all the sites are shown in Figure 1. The sites away from the Trial Area are those to the north of Euston Road, while I have presented two groups of sites to represent the Trial Area. I have also presented the results for all sites, as this is what Mr Webber seems to be referring to in his paragraph 3.9. I have averaged the concentrations for each of the areas, for each of the years. To avoid biasing the results, I have excluded sites without a full set of data for each of the years, CA25, WITT and Euston Road, and two sites, CA21 and CA24, were excluded because of anomalous data in the first year. The four groups of sites are:

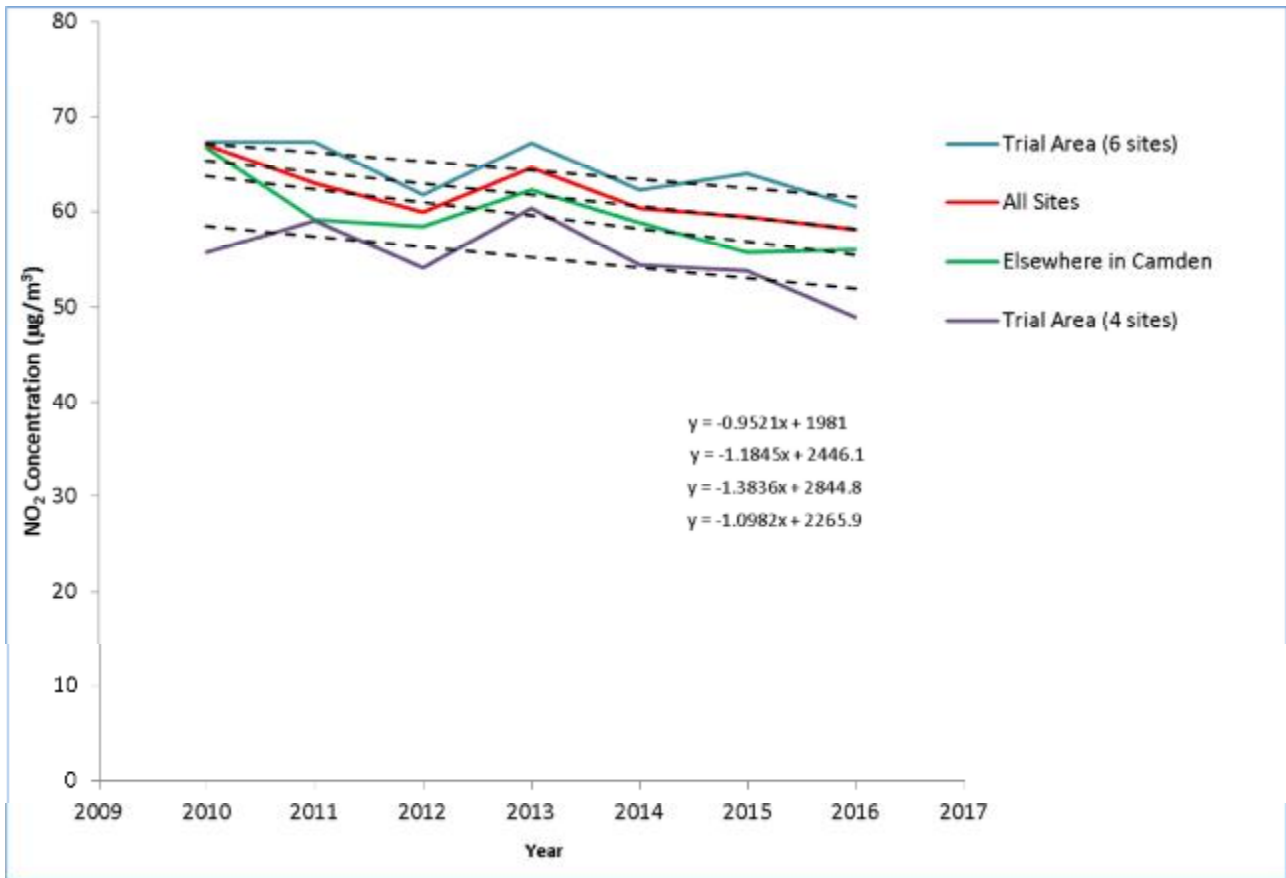
- **the Trial Area (4 sites):** London Bloomsbury, CA4, CA6 and CA10 (these are the sites in the area where there is evidence of changes in traffic flow with the Trial);
- **the Trial Area (6 sites):** London Bloomsbury, CA4, CA6, CA10, CA11 and Shaftesbury Avenue (this includes two additional sites on the fringe of the Trial Area);
- **elsewhere in Camden:** CA7, CA15, CA16, CA17, CA20, CA23, CA24 and CD1; and
- **all sites.**



**Figure 1: Monitoring Site Locations in Camden and the Trial Area**

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- 2.2 In Figure 2, I show the concentrations year by year, averaged across these different groups of sites. There are downward trends for all site groups, with variations from year to year about the fitted trend line. This variation will be due to a mix of a) uncertainty in the monitoring data, b) different meteorological conditions and c) local changes in traffic near to individual sites.



**Figure 2: Concentrations Averaged Across the Four Groups of Sites between 2010 and 2016. The equations represent the best fit lines in the same order as presented.**

- 2.3 The changes in concentrations over the six year period, 2010 to 2016, are summarised in Table 1. The reduction across all sites in Camden is 10.9%, compared with the 4.5% cited by Mr Webber, while the reduction elsewhere in Camden (away from the Trial Area) is greater, at 13.0%. Within the Trial Area, the reduction is 8.5% or 11.3%, depending on the sites included; this contrasts with the much higher numbers presented by Mr Webber. This means that there is no apparent validity to Mr Webber's statement that *"the reductions in levels are ... much higher than the reductions that have been seen overall across the borough."* and therefore there can be no validity to the statement that *"the Trial may have helped contribute to this (greater reduction in the Trial Area)"*, as a detailed analysis of the data has shown that there has not been a greater reduction in the Trial Area.
- 2.4 The analysis of the monitoring data that I have presented provides no evidence to suggest that Trial has been beneficial to overall air quality in the Trial Area.

**Table 1: Trends Across Each of the Areas in Camden, 2010 to 2016.**

Area	Mean (mg/m <sup>3</sup> )	Trend (mg/m <sup>3</sup> per yr)	Change 2010 - 2016	
			(mg/m <sup>3</sup> )	% <sup>a</sup>
<b>Trial Area (6 sites)</b>	64.35	-0.9521	-5.7126	-8.5%
<b>All Sites</b>	61.78	-1.1845	-7.1070	-10.9%
<b>Elsewhere in Camden</b>	59.58	-1.3836	-8.3016	-13.0%
<b>Trial Area (4 sites)</b>	55.20	-1.0982	-6.5892	-11.3%

<sup>a</sup> The change over the six years is expressed as a % of the 2010 value derived from the regression line.