# Baseline Monitoring Data Report

Stephenson House, 75 Hampstead Road

January 2019

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# Dust Monitoring Plan

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| 8344 | Baseline Monitoring Data Report - Stephenson House, 75 Hampstead Road |

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| JLL | Lazari Properties 2 Ltd |

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# Contents

# 1. Introduction

1.1 Phlorum Ltd has been commissioned by Lazari Properties 2 Ltd to undertake a baseline monitoring data report for pre-construction baseline monitoring undertaken at Stephenson House in the London Borough of Camden (LBC), the location of which is shown in Figure 1. The National Grid Reference for the centre of the site is 529170, 182510.

1.2 The baseline monitoring report builds on the submitted dust monitoring plan (8344 AQ final 1 (2018)), and is required to fully discharge planning condition 30 (Air Quality) which states:

*"Air quality monitoring should be implemented on site. No development shall take place until full details of the air quality monitors have been submitted to and approved by the local planning authority in writing. Such details shall include the location, number and specification of the monitors, including evidence of the fact that they have been installed in line with guidance outlined in the GLA's Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance and have been in place for 3 months prior to the proposed implementation date. The monitors shall be retained and maintained on site for the duration of the development in accordance with the details thus approved."*

1.3 78 days of baseline monitoring were undertaken by EEMC Limited, from the 27/09/2018 to 14/12/2018. Monitoring was undertaken at two positions, in a secure location on Stephenson House, as per the agreed dust monitoring plan.

1.4 This data has been analysed within this report to provide a summary of 'baseline' conditions at the application site. From this analysis, the Client, Contractor and Council will be able to better understand the development's contribution to local $PM_{10}$ concentrations and dust levels.

# 2. Data & Analysis

2.1    Fine particulate matter ($PM_{10}$) concentrations were monitored at 15 minute averages between the 27/09/2018 and the 14/12/2018, at two secure locations on Stephenson House, as shown in Figure 1 below.

**Figure 1 – Site Monitoring Plan**
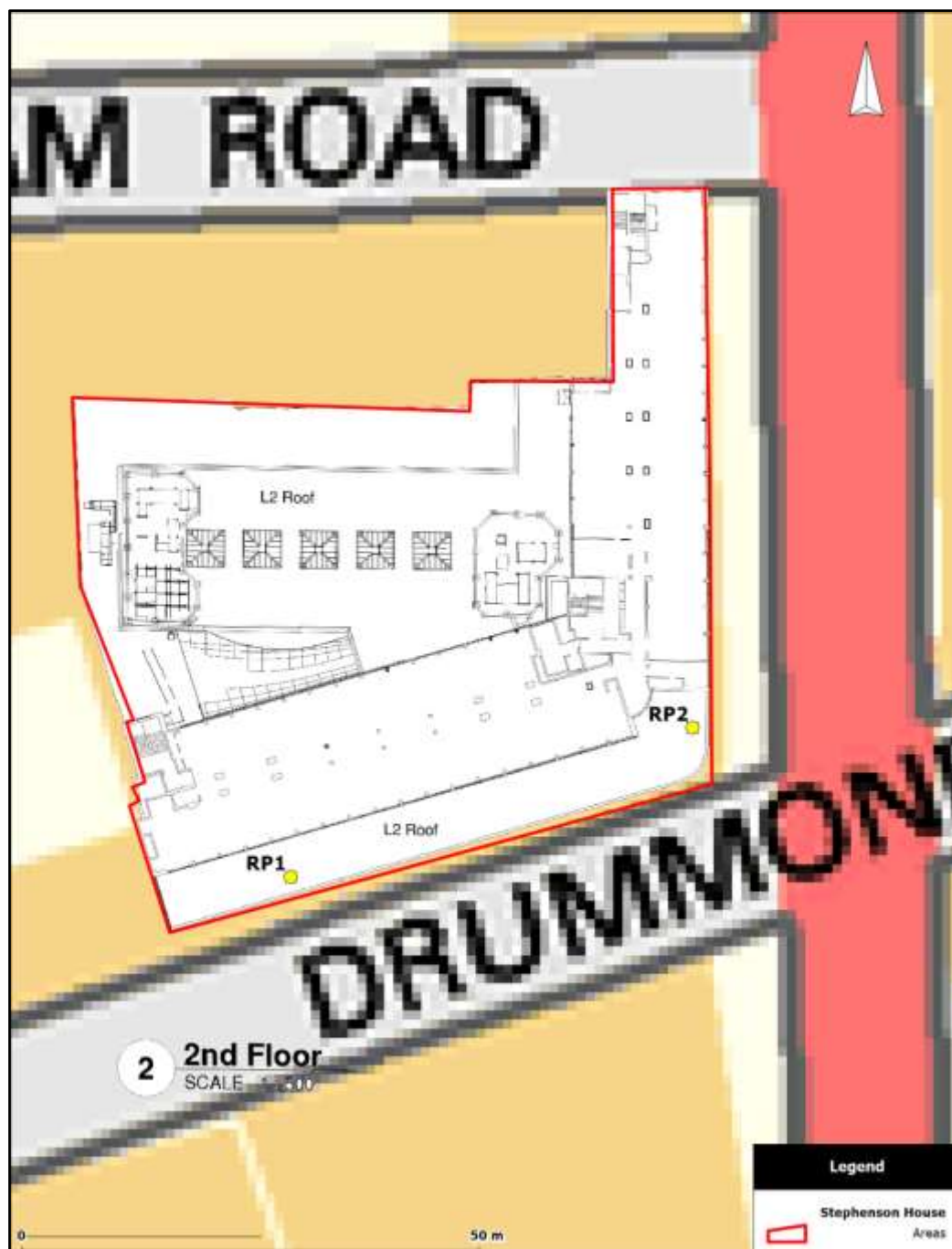
2.2 For the purposes of this assessment and to align with EEMC Limited nomenclature, the monitors were named RP1 and RP2.

2.3 A summary of the key data from RP1 and RP2 for the monitoring period are outlined in Table 2.1 below. For comparison, the summary data from three local automatic monitoring stations are also included. Graphical representations of the data are included in Appendix A for reference.

**Table 2.1: Summary of monitoring data from RP1 and RP2 & LBC automatic monitors (27/09/2018 to 14/12/2018)**

| Statistic | RP1 | RP2 | Bloomsbury (UB) | Euston Road (R) | Swiss Cottage (R) |
|---|---|---|---|---|---|
| Max Concentration ($\mu g.m^{-3}$) | 108.3 | 106.2 | 93.5 | 116.5 | 120.0 |
| 99th Percentile of max ($\mu g.m^{-3}$) | 58.6 | 60.4 | 58.1 | 62.2 | 64.1 |
| 95th Percentile of max ($\mu g.m^{-3}$) | 37.7 | 39.9 | 37.7 | 43.3 | 43.4 |
| Mean Concentration ($\mu g.m^{-3}$) | 13.3 | 14.0 | 16.8 | 21.7 | 19.8 |
| Exceedances of 15 minute average trigger level | 0 | 0 | 0 | 0 | 0 |
| Exceedances of 1 hour average trigger level | 0 | 0 | 0 | 0 | 0 |

Note: UB = Urban Background, R = Roadside.

2.4 The data in Table 2.1 show that baseline concentrations of $PM_{10}$ at the application site are good. The period means of $13.3\mu g.m^{-3}$ and $14.0\mu g.m^{-3}$ are well below the $40\mu g.m^{-3}$ annual mean Air Quality Standard for $PM_{10}$. The data for the application site is also comparable to the period mean concentration for Bloomsbury, which is an urban background location (i.e. distanced away from any significant source of pollution). The period means for Euston Road and Swiss Cottage are higher than the concentrations recorded at the application site; this is likely reflective of their location adjacent to major roads which are sources of $PM_{10}$.

2.5 The maximum 15-minute means recorded at RP1, RP2 and Bloomsbury were $108.3\mu g.m^{-3}$, $106.2\mu g.m^{-3}$ and $93.5\mu g.m^{-3}$, respectively. Interestingly, these were all recorded between 22:00 and 22:45 on the 5th of November. It is considered likely that bonfire night played a significant role in elevated $PM_{10}$ concentrations. It should, however, be noted that these maximum recorded $PM_{10}$ concentrations are at least 57% lower than the 15 minute mean site action level of $250\mu g.m^{-3}$.

2.6 The maximum recorded concentrations at the two roadside sites (Euston Road and Swiss Cottage) occurred at times when no peaks were recorded at any other site; suggesting localised reasons for elevated $PM_{10}$ concentrations.

2.7 At all monitoring sites, if you disregard the highest 1% and 5% of 15 minute mean concentrations, it shows that peaks such as those recorded during bonfire night are infrequent.

2.8 Table 2.2 below summarises the degree of correlation between each of the data sets. The correlation between the data sets is also evidenced in the graphs in Appendix A.

**Table 2.2: Pearson Correlation between Data Sets**

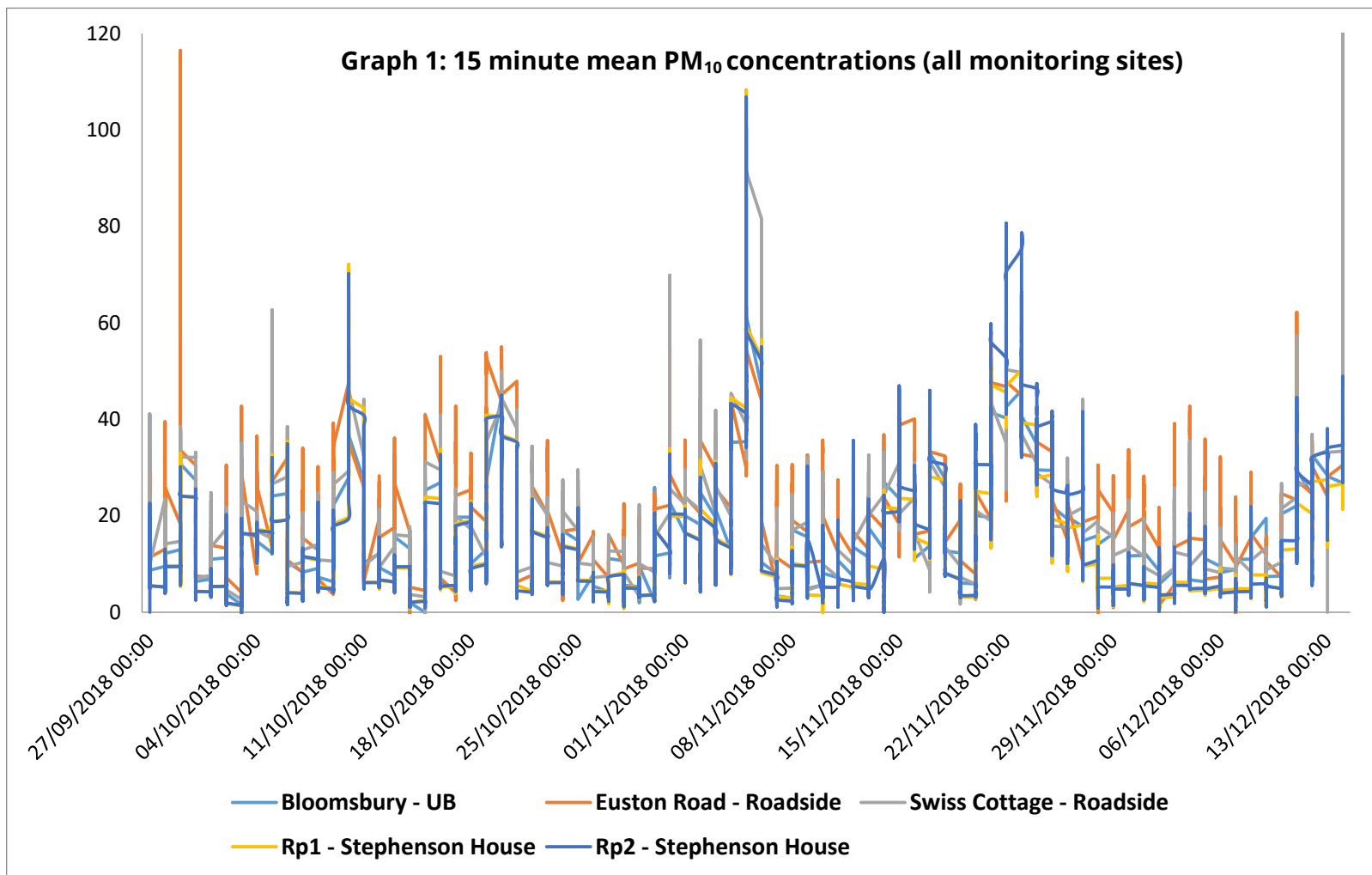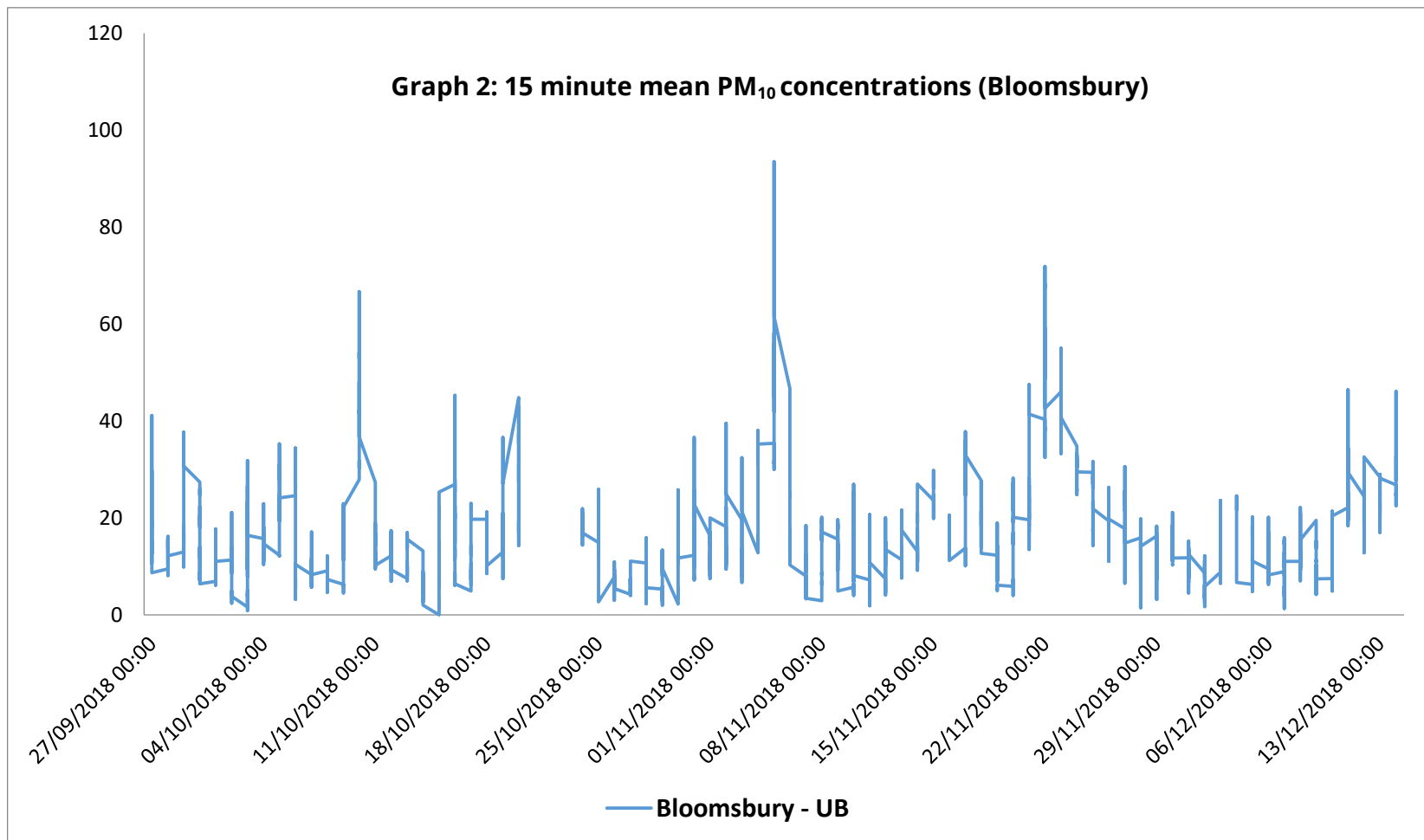| | Pearson Correlation Coefficient ($R^2$) | | | | |
|---|---|---|---|---|---|
| | RP1 | RP2 | Bloomsbury (UB) | Euston Road (R) | Swiss Cottage (R) |
| **RP1** | 1 | 0.98 | 0.94 | 0.78 | 0.88 |
| **RP2** | 0.98 | 1 | 0.92 | 0.76 | 0.85 |
| **Bloomsbury -UB** | 0.94 | 0.92 | 1 | 0.83 | 0.90 |
| **Euston - R** | 0.78 | 0.76 | 0.83 | 1 | 0.83 |
| **Swiss Cottage -R** | 0.88 | 0.85 | 0.90 | 0.83 | 1 |

Note: UB = Urban Background, R = Roadside.

2.9 The statistics in Table 2.2 show that there is a very strong correlation between all data sets, with the weakest correlation occurring between RP2 and Euston Road, with an $R^2$ value of 0.76. The strong correlation between all the data sets indicates that regional factors, such as weather or transboundary dusts, play a key role in in short-term $PM_{10}$ concentrations across London.

2.10 The strongest correlations were recorded between RP1, RP2 and Bloomsbury, which is an urban background site.

2.11 Furthermore, the statistics in Table 2.1 and Table 2.2 indicate that baseline conditions at the application site are typical for London.
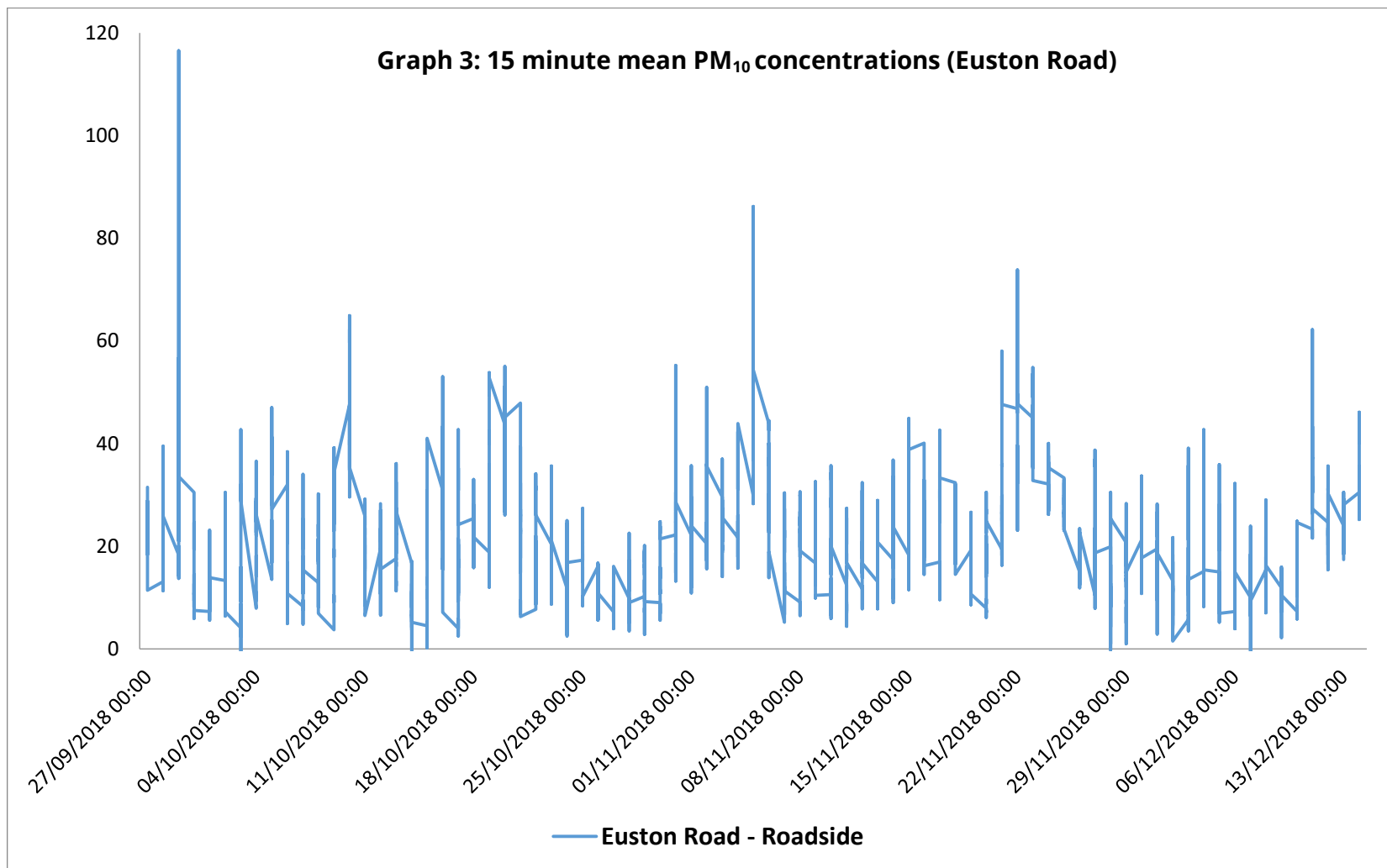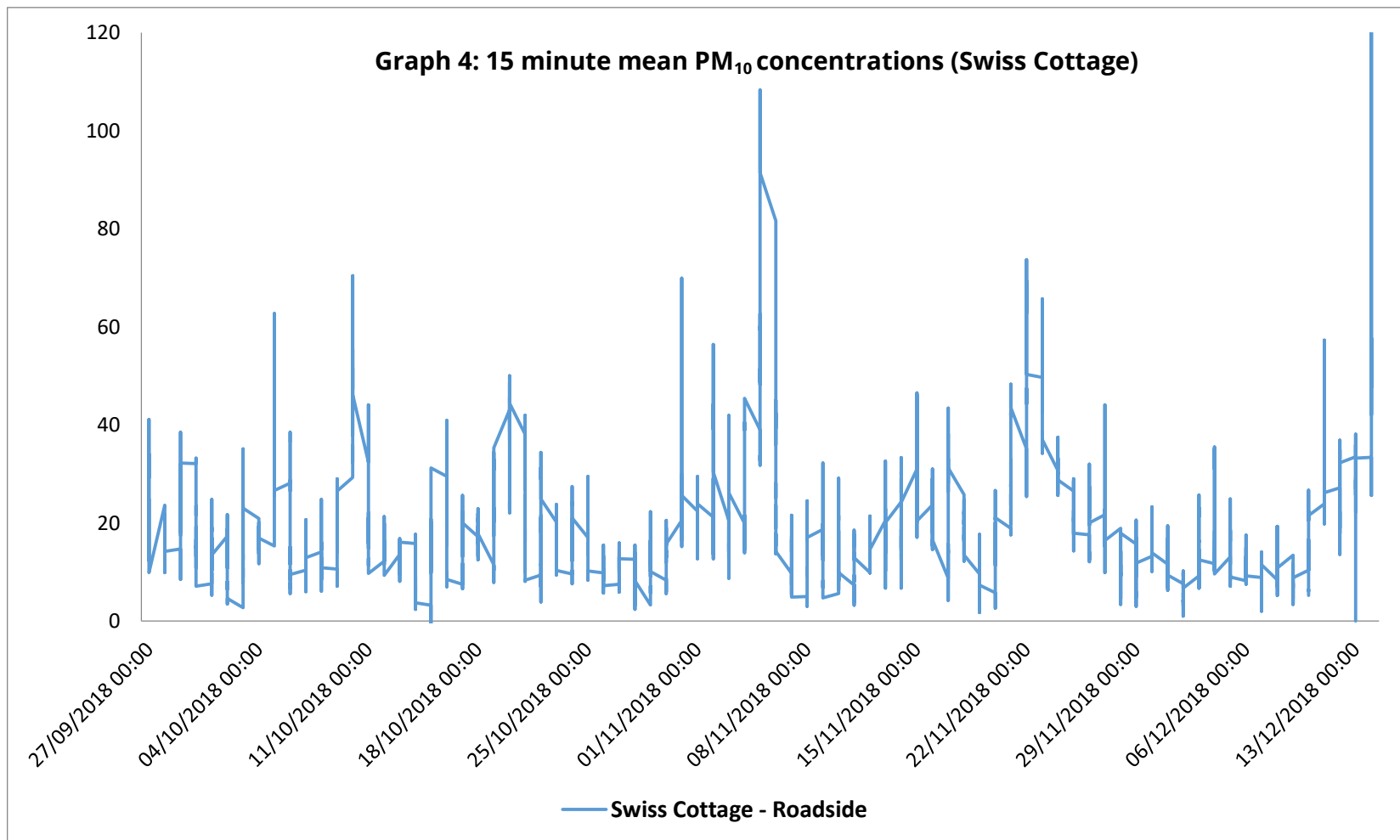
# 3. Conclusions

3.1 Phlorum were commissioned by Lazari Properties 2 Ltd to undertake a pre-construction dust monitoring data report to fully discharge condition 30 of planning application 2018/3895/P.

3.2 Continuous $PM_{10}$ monitoring was undertaken at two locations on Stephenson House pre-construction as set out in the dust monitoring plan (8344 AQ final 1 (2018).

3.3 The data was collated and compared with LBC local automatic monitors. No exceedances of the 15 minute site action levels ($250\mu g.m^{-3}$) were recorded at any of the sites; the highest 15 minute mean concentration recorded at any site was $120.0\mu g.m^{-3}$. This indicates that any site action levels at the application site post-construction would be due to works associated with the construction phase of the proposed development.

3.4 Furthermore, comparison of the baseline monitoring data with LBCs other monitors showed that $PM_{10}$ concentrations at the application site correlate strongly with $PM_{10}$ concentrations experienced at other sites in Camden, including those at roadside locations. This suggests that baseline conditions at the application site are typical of Camden and the wider region and are not strongly influenced by local emission sources such as road traffic. Site action levels should not, therefore, deviate from trigger levels suggested in the Greater London's Authority *'The Control of Dust and Emissions during Construction and Demolition SPG'.*

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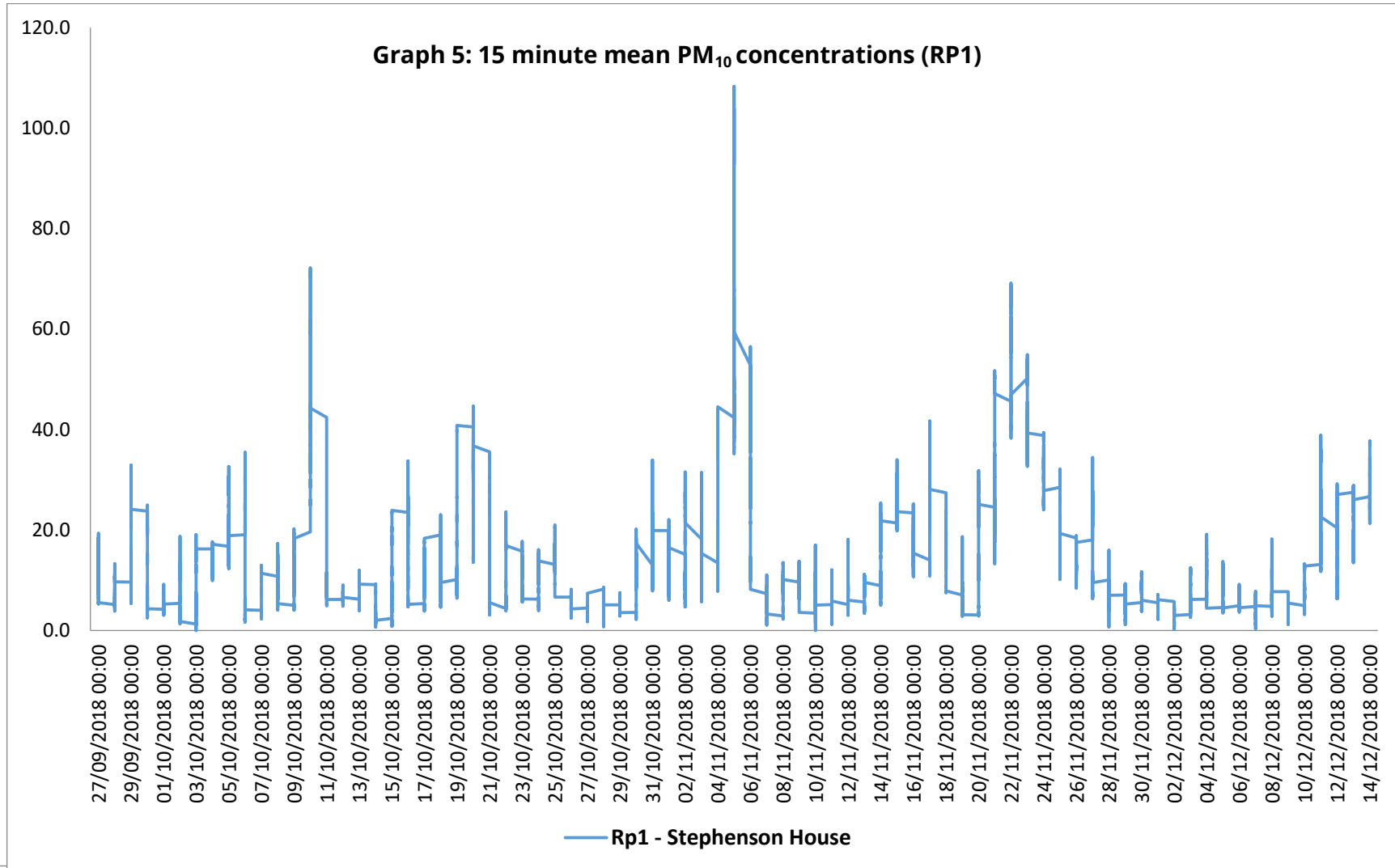# Appendix A: Graphical representation of data (27/09/2018 – 14/12/2018)

Graph 1: 15 minute mean $PM_{10}$ concentrations (all monitoring sites)

Legend:
- Bloomsbury - UB
- Euston Road - Roadside
- Swiss Cottage - Roadside
- Rp1 - Stephenson House
- Rp2 - Stephenson House

Graph 2: 15 minute mean $PM_{10}$ concentrations (Bloomsbury)

Bloomsbury - UB

Graph 3: 15 minute mean PM$_{10}$ concentrations (Euston Road)

Euston Road - Roadside

**Graph 4: 15 minute mean PM$_{10}$ concentrations (Swiss Cottage)**

Swiss Cottage - Roadside

Graph 5: 15 minute mean PM$_{10}$ concentrations (RP1)

Rp1 - Stephenson House

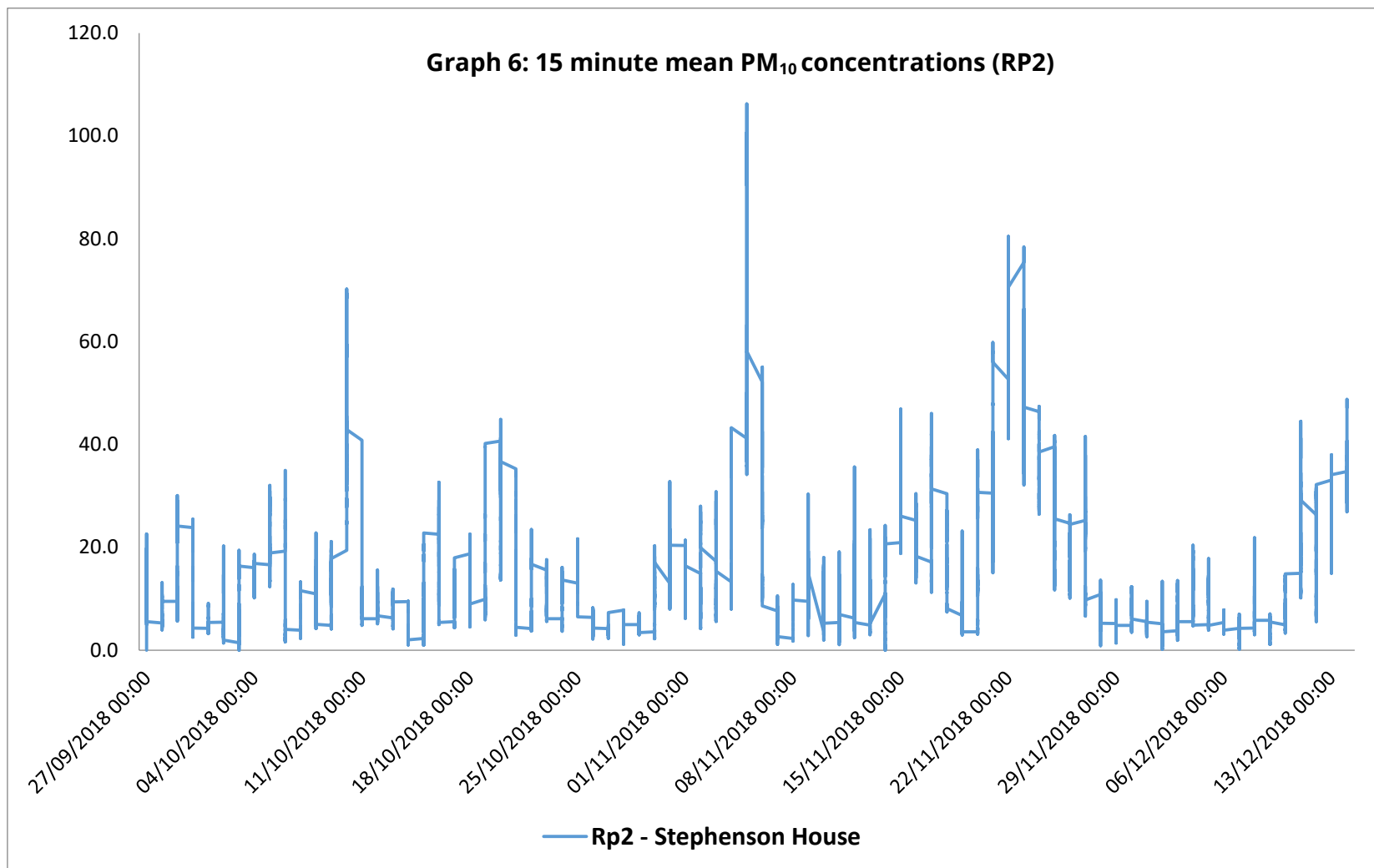Graph 6: 15 minute mean PM$_{10}$ concentrations (RP2)

Rp2 - Stephenson House

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