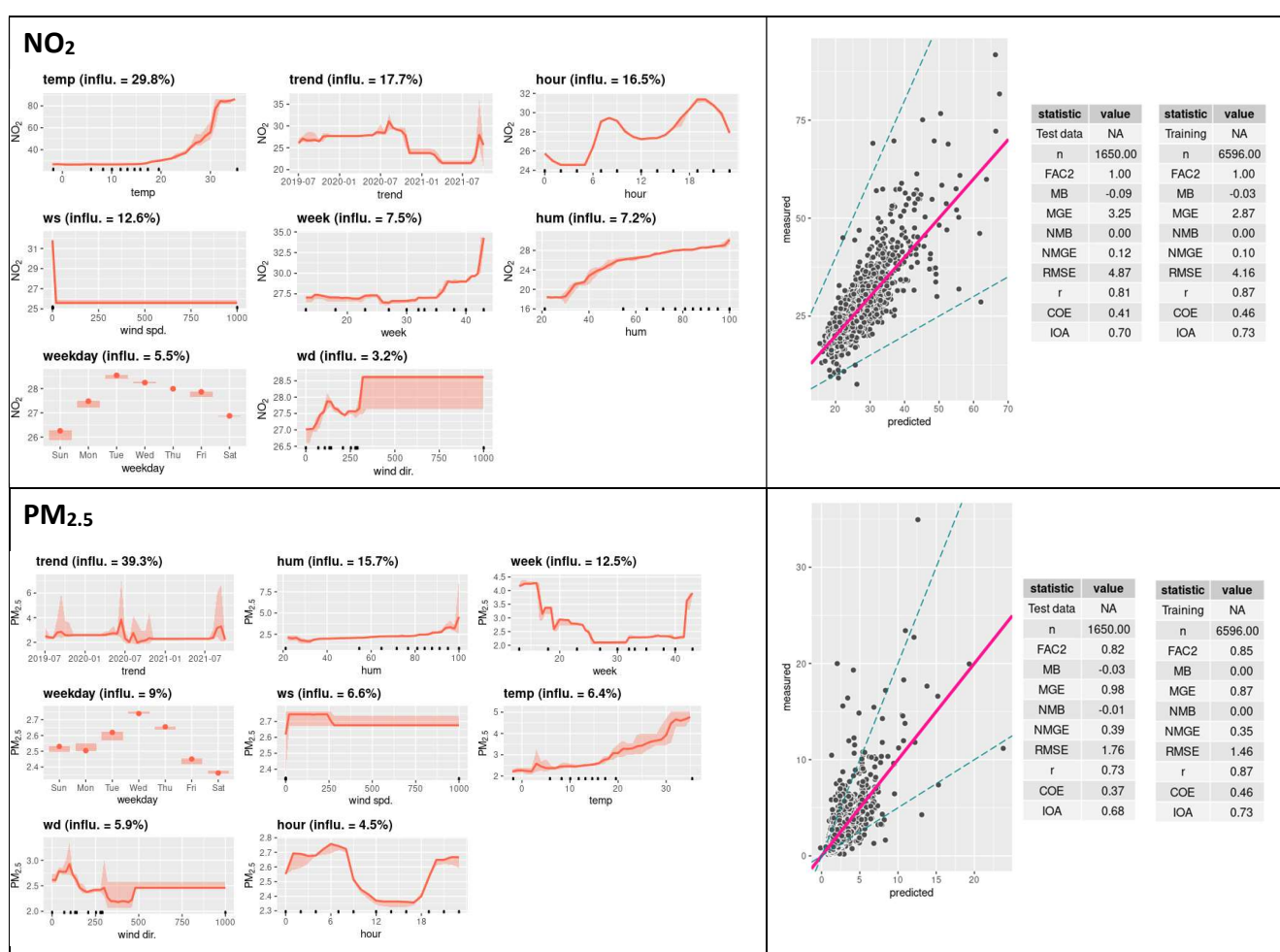


Article

# A practical green infrastructure intervention to mitigate air pollution in a UK school playground

## Supplementary Material

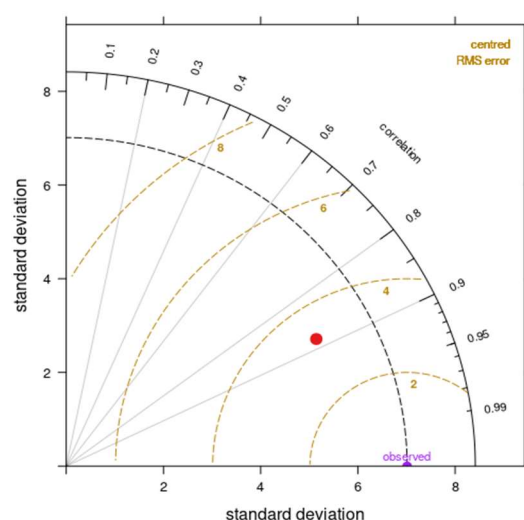
Figure S1 shows the partial dependencies – with Sch-GB site as an example – between  $PM_{2.5}$ ,  $NO_2$ , and the weather covariates employed in the de-seasonalisation model. The model's performance was evaluated using tenfold cross-validation, and the resulting model fitting results are also displayed.



**Figure S1.** Model results and partial dependency of the covariates on  $PM_{2.5}$  and  $NO_2$  concentrations at Sch-GB from 2019 to 2021. Covariates: temp = temperature, hum = humidity, ws = wind speed, wd = wind direction, week = week of the year, hour = hour of the day, weekday, and trend.

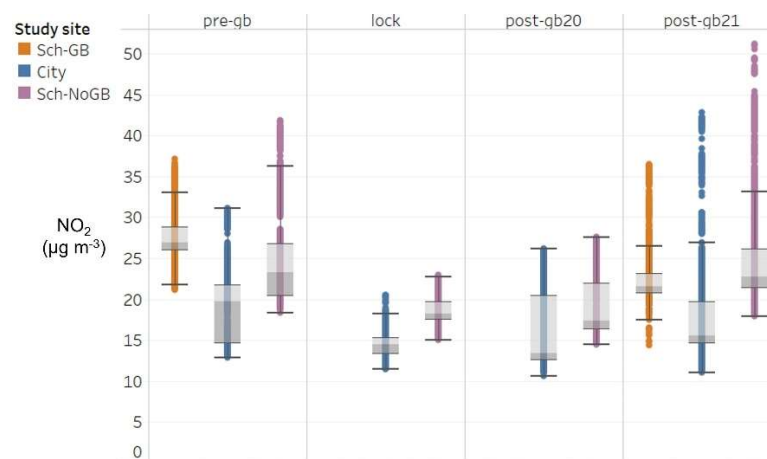
A field co-location between low-cost mobile device (Aeroqual series 500) and the reference sensor MOBIUS (MOBILE Urban Sensing vehicle) from the Urban Flows Observatory, The University of Sheffield, was conducted to improve PM<sub>2.5</sub> data quality. The co-location lasted 11-hour in total in three separate events, and data were collected with 1-min resolution.

The measurements from the low-cost mobile device were calibrated against a reference-grade PALAS Fidas sensor built in the MOBIUS. A concentration range correction was applied based on the relationship between PM<sub>2.5</sub> concentration range and sensor performance. Accuracy of the low-cost monitor modelled data is shown in Figure S2.

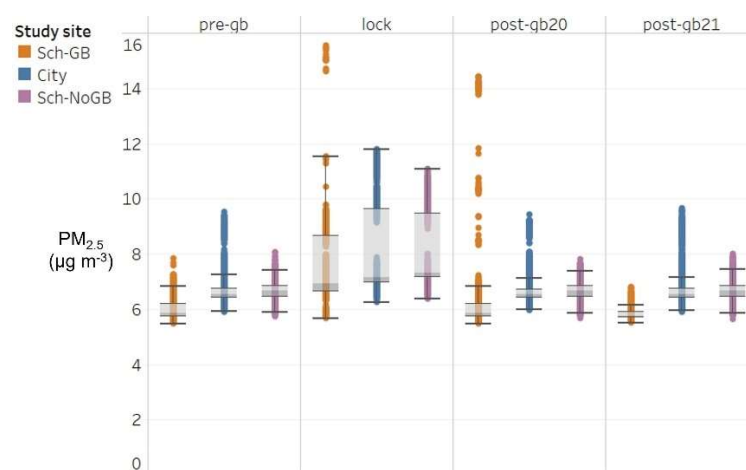


**Figure S2.** Taylor diagram comparing the modelled data (red dot) which are the corrected low-cost mobile device measurements for the reference data (observed). Correlation (R) - between 0.8-0.9; observed variability between 2-3  $\mu\text{g m}^{-3}$  (through Standard Deviation); centred RMS error <4.

De-seasonalised data visualisations (boxplots) for each study period at all sites are presented below in figures S3 and S4.



**Figure S3.** De-seasonalised NO<sub>2</sub> concentrations ( $\mu\text{g m}^{-3}$ ) for each data collection period and study site. Colour change from light to dark grey within boxes represent the median NO<sub>2</sub> concentration, and whiskers extend to 1.5 the InterQuartile Range (IQR).



**Figure S4.** De-seasonalised PM<sub>2.5</sub> concentrations ( $\mu\text{g m}^{-3}$ ) for each data collection period and study site. Colour change from light to dark grey within boxes represent the median PM<sub>2.5</sub> concentration, and whiskers extend to 1.5 the InterQuartile Range (IQR).