

Streamlined Energy and Carbon Reporting

Quantification and Reporting Methodology

The 2019 UK Government Environmental Reporting Guidelines and the GHG Protocol Corporate Accounting and Reporting Standard (revised edition) were followed. The 2022 UK Government GHG Conversion Factors for Company Reporting were used in emission calculations as these relate to the majority of the reporting period. The report has been reviewed independently by Briar (Briar Consulting Engineers Limited).

The electricity and gas energy use was compiled from invoices. Where invoices were unavailable, the data was extrapolated to cover the missing period (pro-rata method) to ensure it falls within a reasonable range. Mileage records were used to calculate energy and emissions from College owned vehicles and grey fleet. Gross calorific values were used except for mileage energy calculations as per Government GHG Conversion Factors.

The emissions are divided into mandatory and voluntary emissions according to the 2018 Regulations, then further divided into the direct combustion of fuels and the operation of facilities (scope 1), indirect emissions from purchased electricity (scope 2) and further indirect emissions that occur as a consequence of company activities but occur from sources not owned or controlled by the organisation (scope 3).

Breakdown of energy consumption used to calculate emissions (kWh):

Energy type	2022/23	2021/22	2020/21
Mandatory requirements:			
Natural gas	4,022,325	6,085,997	5,625,238
Purchased electricity	3,315,372	3,496,475	3,368,224
Transport fuel	119,324	188,618	41,396
Total energy (mandatory)	7,457,021	9,771,091	8,809,726

Breakdown of emissions associated with the reported energy use (tCO₂e)

Emission source	2022/23	2021/22	2020/21
Mandatory requirements:			
<u>Scope 1</u>			
Natural gas	735.8	1,110.9	1,030.3
Transport - Company owned vehicles	41.8	34.1	7.6
<u>Scope 2</u>			
Purchased electricity (location-based)	481.8	676.1	667.4
<u>Scope 3</u>			
Transport – Business travel in grey fleet	8.1	12.2	2.7
Total gross emissions (mandatory)	1,267.5	1,833.3	1,708.0
<u>Intensity ratios (mandatory emissions only)</u>			
Tonnes of CO ₂ e per staff member	1.55	2.309	2.253
Tonnes of CO ₂ e per square meter floor area	0.025	0.037	0.033

During the year, the College expanded by adding Nido Volans Lambeth into our operations and built estate. In addition, the College has demolished part of the Plumsted site in readiness for our new campus, reducing the size of our Campus by around 2,000sqm.

Intensity measurement

Two intensity ratios are reported showing emissions (tCO₂e) per staff member and per square meter floor area. Emissions per staff member is the recommended ratio for the sector for consistency and comparability. Emissions per square meter floor area is reported to reflect the energy efficiency of the buildings, which are the source of the majority of reported emissions.

Measures taken to improve energy efficiency

The reported energy usage has decreased and the following is a summary of the activities/condition that have supported this position:

- (i) Mild weather conditions, meaning we run the heating system less
- (ii) Optimisation of our heating and hot water control systems
- (iii) Cross College reduction in our heating temperature set points and timings
- (iv) More efficient use of our building out of hours and for lettings
- (v) Continued upgrading programme of lighting to LED (60-80% more efficient)
- (vi) Investment in our heating and ventilation plant, replacing life expired and inefficient components with new highly efficient plant and controls

From April 2023, the College moved its Electricity supply to a REGO certified zero carbon source which has had a major impact on our emissions. Emissions have reduced by 27.8% within 22/23 when compared to 21/22. Emissions in 22/23 compared to 2021/22 have actually reduced in real consumption terms, with a 19.7% reduction in emissions ignoring any adjustment made for our zero carbon electricity supply.

In short, we are consuming 5.17% less electricity during 2022/23, when compared to 2021/22, and also consuming 33.9% less gas in 22/23 when compared to 2021/22.

Looking forwards capital investment and major change is expected to further enhance our dependency on fossil fuels (gas). These include:

- (i) Roof replacements with plus 35% (the Building Regulations) insulation
- (ii) Addition of air source heat pumps coupled with our existing gas boiler plant for the main Bromley A and B blocks
- (iii) Further investment in LED lighting upgrades
- (iv) Further investment in plant upgrades and controls