

# Loughborough University

## London Campus

### Annual Energy Performance Report

August 2022 – July 2023



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*Date* : October 2023

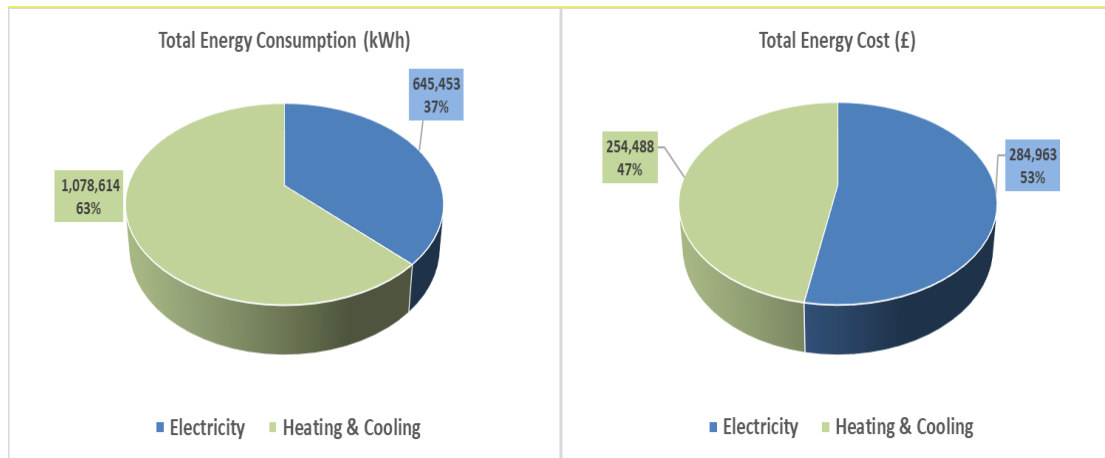
## Management Summary

This report covers the energy performance for the London Campus for the 2022/23 academic year.

## Energy Consumption and Cost Data

The annual energy consumption and cost data is presented in the following table:

Year	Electricity		Heating		Cooling		Total	
	kWh	£	kWh	£	kWh	£	kWh	£
2022/23	645,453	£284,963	545,853	£121,061	532,761	£133,426	1,724,067	£539,450



## Carbon Emissions

The absolute scope 1 and 2 carbon emissions for the 2022/23 academic year have reduced by 22% compared to the 2016/17 baseline year.

The emissions relative to student numbers for the 2022/23 academic year have reduced by 51% compared to the 2016/17 baseline year.

## Energy Costs

The utility contracts for the London Campus and procured and managed by the landlord for the building – Here East.

As a result of the volatility in the global energy markets current energy costs are at a record high and this is reflected in the current increases in energy costs at the London Campus.

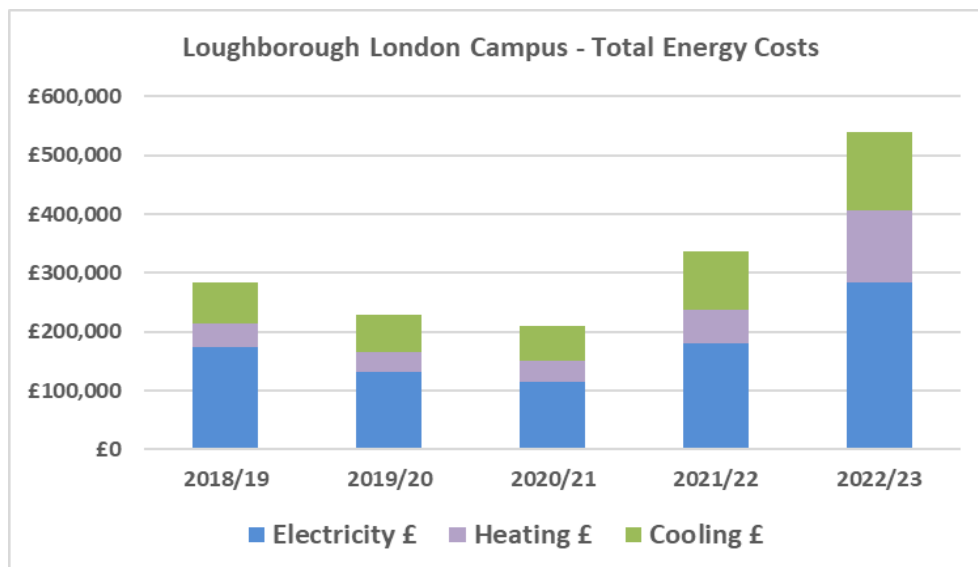
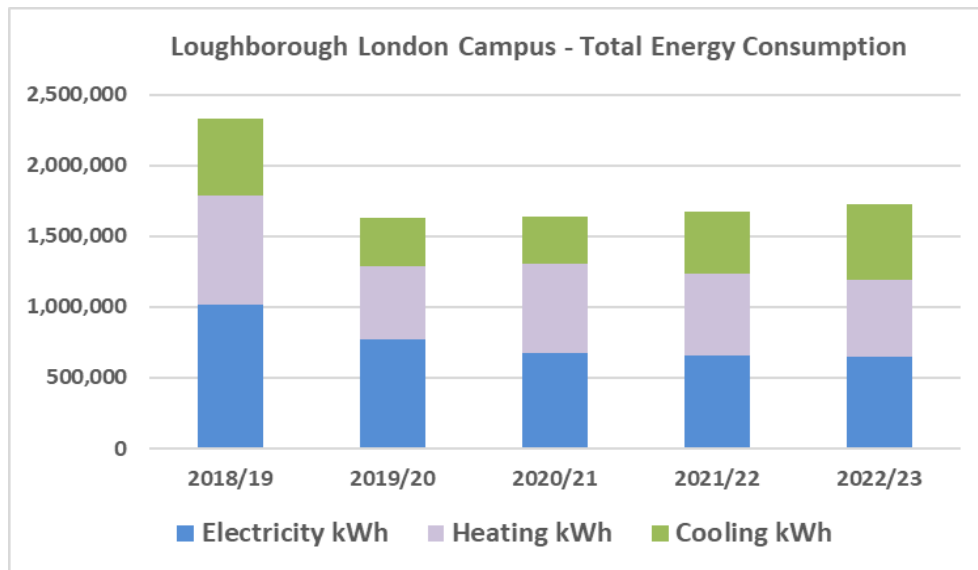
Year	Unit Cost (p/kWh)		
	Electricity	Heat	Cooling
2021/22	27.60	9.62	23.22
2022/23	44.15	22.18	25.04
Difference	37.5%	56.6%	7.3%

## 1.1 Total Energy Consumption and Cost

The annual energy consumption and cost data is summarised in the following table:

Year	Electricity		Heating		Cooling		Total	
	kWh	£	kWh	£	kWh	£	kWh	£
2018/19	1,019,800	£173,366	767,092	£41,923	538,420	£69,465	2,325,312	£ 284,754
2019/20	771,441	£131,145	518,370	£34,784	337,050	£63,073	1,626,861	£ 229,002
2020/21	675,292	£114,800	629,754	£35,725	330,940	£60,198	1,635,986	£ 210,723
2021/22	657,631	£181,483	579,613	£55,784	431,380	£100,182	1,668,624	£ 337,448
2022/23	645,453	£284,963	545,853	£121,061	532,761	£133,426	1,724,067	£ 539,450

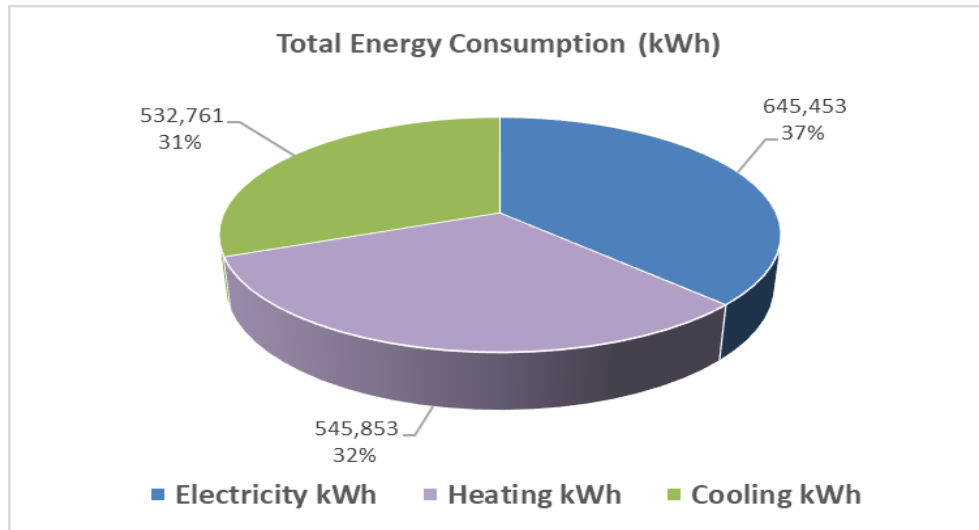
The energy consumption and costs are presented in the following graphs:



The combined energy consumption has increased by 3% and the energy costs have increased by 37% compared to the corresponding period in 2021/22.

## 1.2 Total Energy Consumption

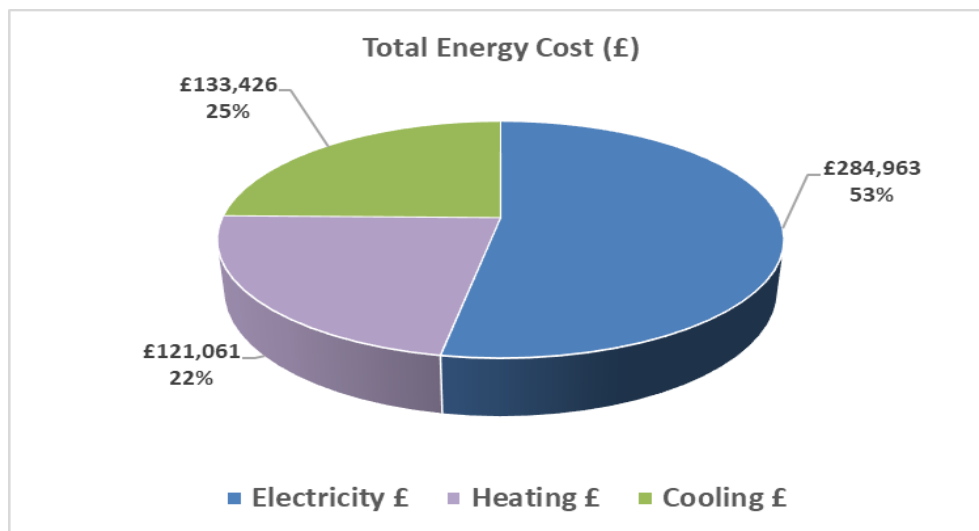
The total energy consumption breakdown for 2022/23 is presented in the following graph:



The electricity consumption represents 37% of the total annual consumption, the heating consumption represents 32% of the total annual consumption and the cooling consumption represents 31% of the total annual consumption.

## 1.3 Total Energy Expenditure

The total energy cost breakdown for 2022/23 is presented in the following graph:



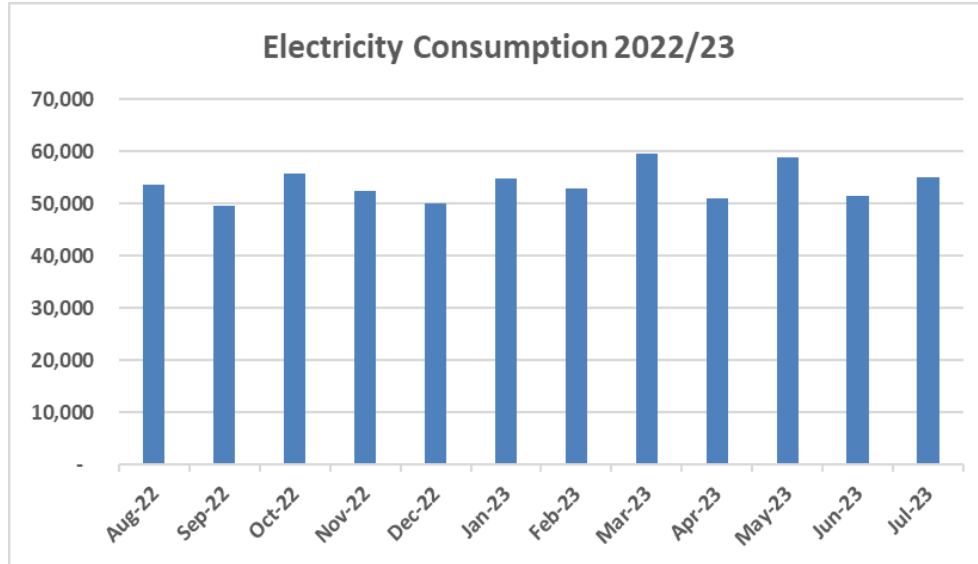
The electricity cost represents 53% of the total annual energy costs, the heating cost represents 22% of the total annual energy costs and the cooling cost represents 25% of the total annual costs.

## 1.4 Electricity Consumption

The grid electricity consumption data for the period 2022/23 is presented in the following table:

Month	kWh	£
Aug-22	53,594	£23,968
Sep-22	49,566	£22,274
Oct-22	55,812	£23,691
Nov-22	52,407	£22,849
Dec-22	50,137	£21,643
Jan-23	54,889	£23,480
Feb-23	52,965	£23,305
Mar-23	59,568	£27,649
Apr-23	51,081	£22,866
May-23	58,849	£26,218
Jun-23	51,585	£23,020
Jul-23	55,000	£24,000
<b>Total</b>	<b>645,453</b>	<b>£284,963</b>

The monthly breakdown of the electricity consumption is presented in the following graph:

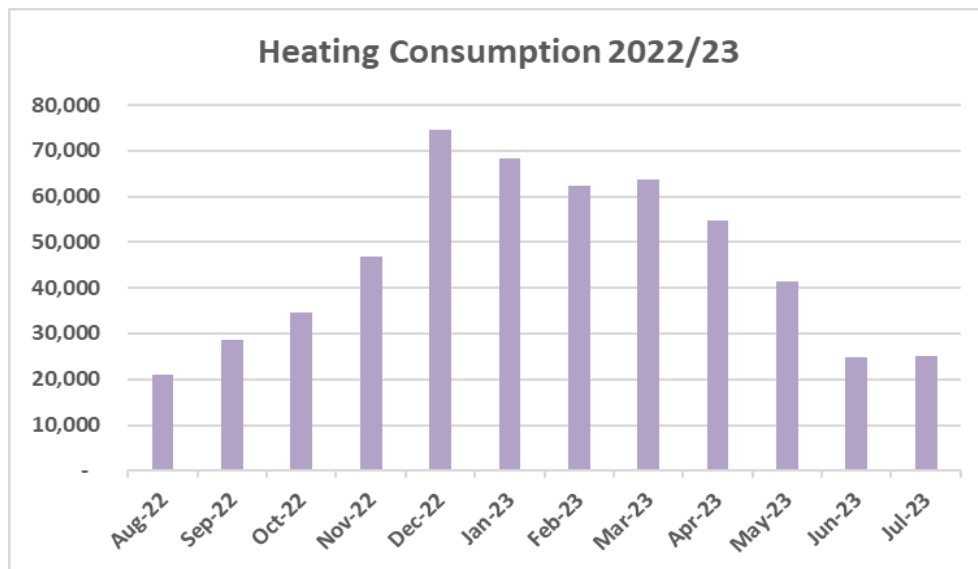


## 1.5 Heating Consumption

The Heating consumption data for the period 2022/23 is presented in the following table:

Month	kWh	£
Aug-22	20,909	£2,673
Sep-22	28,594	£8,258
Oct-22	34,700	£4,437
Nov-22	46,855	£5,662
Dec-22	74,546	£13,515
Jan-23	68,366	£8,008
Feb-23	62,278	£7,963
Mar-23	63,646	£13,063
Apr-23	54,764	£6,407
May-23	41,420	£7,253
Jun-23	24,776	£7,824
Jul-23	25,000	£36,000
<b>Total</b>	<b>545,853</b>	<b>£121,061</b>

The monthly breakdown of the Heating consumption is presented in the following graph:

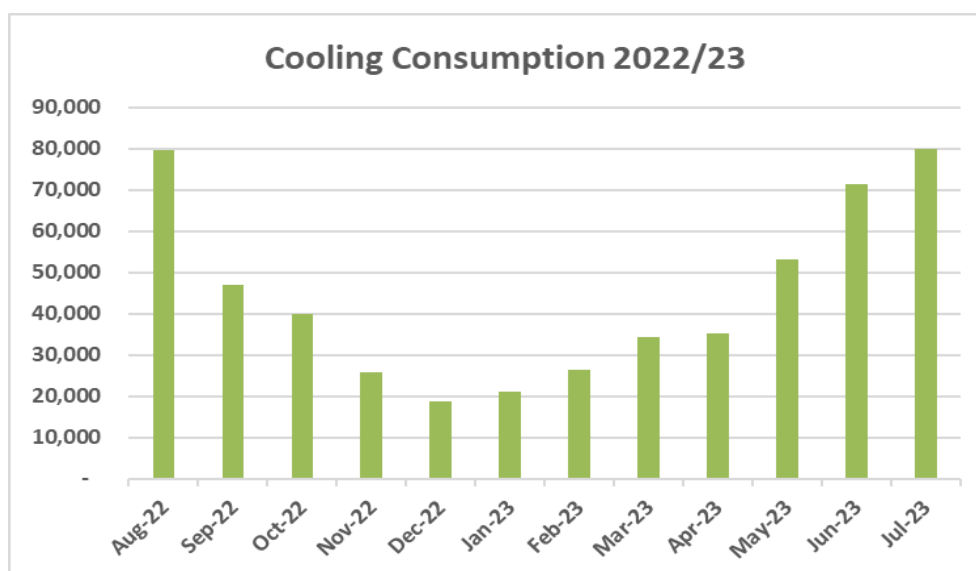


## 1.6 Cooling Consumption

The Cooling consumption data for the period 2022/23 is presented in the following table:

Month	kWh	£
Aug-22	79,540	£ 12,074
Sep-22	46,992	£ 20,410
Oct-22	39,830	£ 6,046
Nov-22	25,840	£ 3,760
Dec-22	18,780	£ 16,019
Jan-23	21,230	£ 3,179
Feb-23	26,320	£ 3,995
Mar-23	34,440	£ 19,437
Apr-23	35,360	£ 4,934
May-23	53,080	£ 7,407
Jun-23	71,350	£ 24,165
Jul-23	80,000	£ 12,000
<b>Total</b>	<b>532,761</b>	<b>£133,426</b>

The monthly breakdown of the Cooling consumption is presented in the following graph:



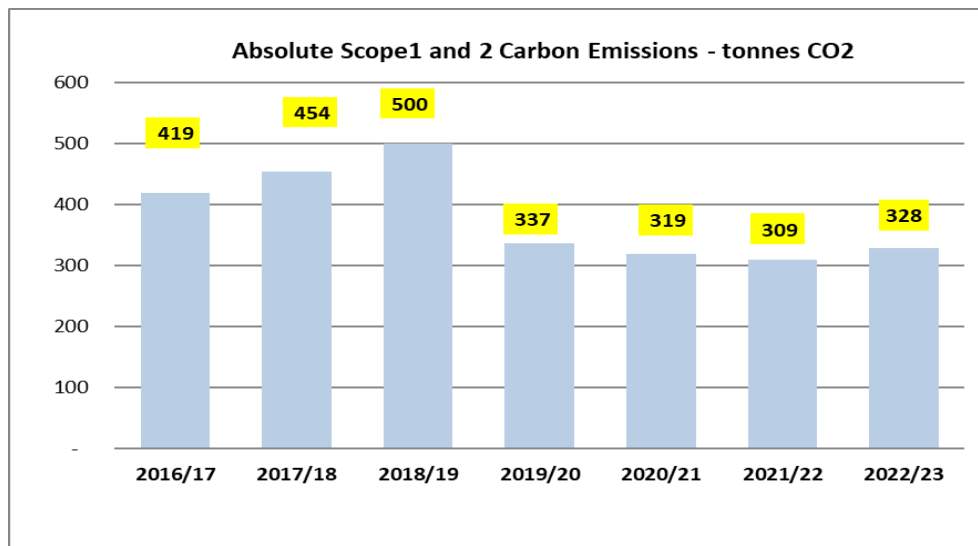
## 2. Carbon Reporting

The scope 1 and 2 carbon emission for the London Campus are tracked against a 2016/17 baseline as this was the first year of full occupancy.

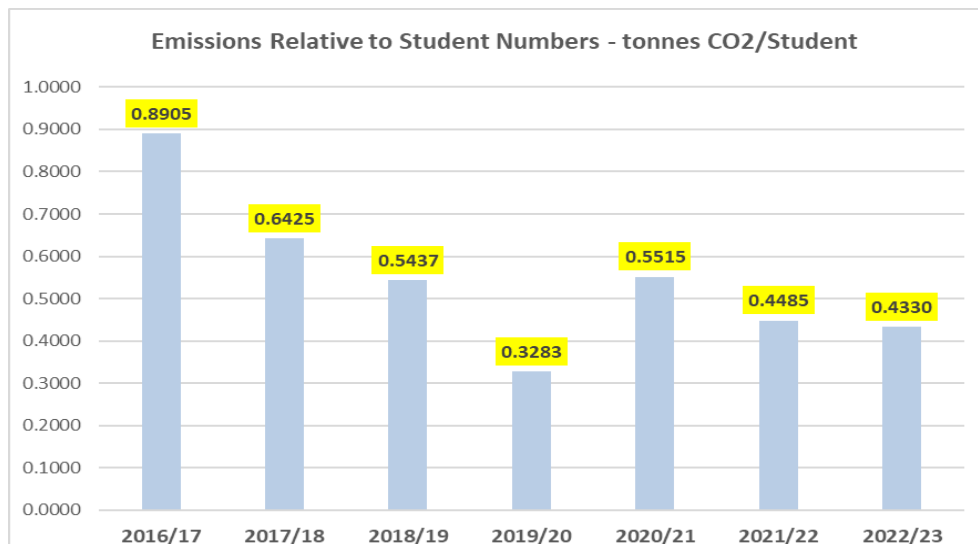
The absolute carbon emission and emission relative to student numbers are presented in the following table:

YEAR	Electricity		Heating & Cooling		Total CO2 (t CO2)	Students	CO2/Student (t CO2)/Student
	kWh	(t CO2)	kWh	(t CO2)			
2016/17	868,414	246	938,800	173	419	470	0.890
2017/18	1,052,169	269	1,006,467	185	454	706	0.643
2018/19	1,019,800	261	1,305,512	240	500	920	0.544
2019/20	771,441	180	855,420	157	337	1,027	0.328
2020/21	675,292	143	960,694	176	319	579	0.552
2021/22	657,631	128	1,010,993	182	309	690	0.449
2022/23	645,453	134	1,078,614	194	328	757	0.433

The following graph represents the absolute scope 1 and 2 carbon emissions:



The following graph illustrates the carbon emissions relative to student numbers:

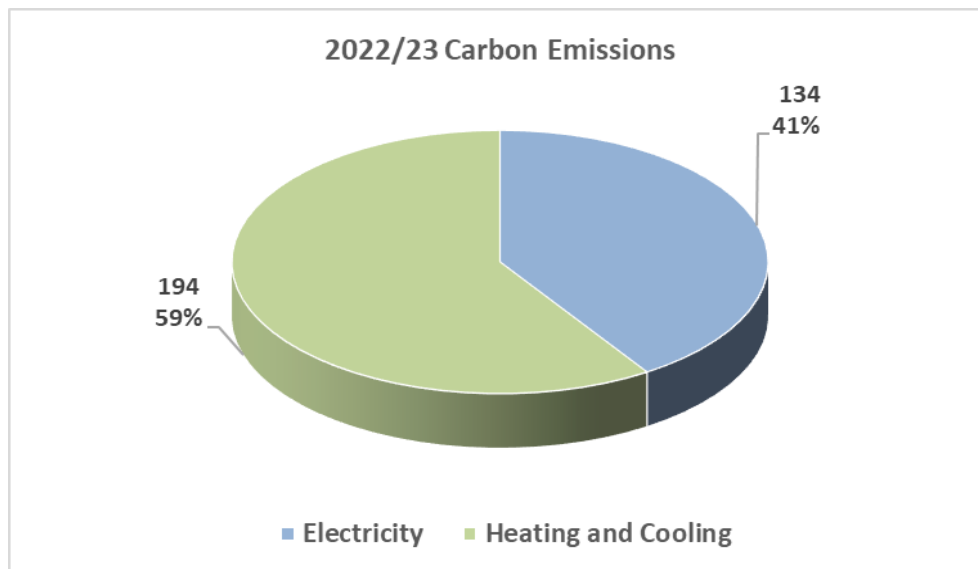




The absolute emissions for the 2022/23 academic year have reduced by 22% compared to the baseline year.

The emissions relative to student numbers for the 2022/23 academic year have decreased by 51% compared to the baseline year.

The following graph illustrates the split in absolute scope 1 and 2 carbon emission between the electricity and the heating and cooling consumption:



The electricity consumption represents 41% of the total emissions and the heating and cooling consumption represents 59% of the total emissions.

### 3. Utility Contracts

All the utility contracts for the London Campus and procured and managed by the landlord for the building – Here East.

The heating and cooling requirements are provided by the Olympic Park District Heating and Cooling System.

There is heat meter and chilled water meter within the LU plant rooms and the metered data is used for consumption billing.

The electricity is supplied by a dedicated supply to the building and is metered at the main incomer for billing purposes.

Here East provide utility invoices on a monthly basis .

Here East entered new supply contracts that came into effect on the 1<sup>st</sup> of April 2023. As a result of the volatility in the global energy markets, current energy costs are at a record high, and this is reflected in the current energy cost increases associated with the London Campus.

The table below shows the current unit rates for electricity, heating and cooling over the last two years and illustrates the significant increase in unit rates, especially in relation to the electricity and district heating:

Year	Unit Cost (p/kWh)		
	Electricity	Heat	Cooling
2021/22	27.60	9.62	23.22
2022/23	44.15	22.18	25.04
Difference	37.5%	56.6%	7.3%