

## Appendix

### 1. Top 30 site energy performance and bottom 5 performance overview

Performance comparison by top 30 sites: Q1 2022/23 with Q1 2021/22 and 2019/2020

Row Labels	Sum of Jun-19	Sum of Jun-21	Sum of Jun-22
Animal Reception Centre	741,977	704,382	743,230
Barbican Arts Centre	17,316,982	12,195,779	15,808,659
Baynard House Car Park	165,009	174,869	155,902
Billingsgate Market	3,612,570	3,362,090	3,427,365
Bishopsgate Police Station	3,388,832	3,256,636	3,243,497
Central Criminal Court	7,532,297	6,192,558	6,669,191
City of London Crematorium	2,914,364	2,924,193	2,105,143
City of London Freeman's School	4,737,071	3,781,977	4,796,484
City of London School	3,229,358	3,151,914	3,264,897
City of London School For Girls	2,237,297	1,795,396	1,651,152
GSMD	2,221,345	1,805,453	2,001,467
GSMD - Milton Court	3,587,099	2,693,611	4,345,074
GSMD - Sundial Court	1,826,106	1,516,607	1,581,121
Guildhall Complex	17,596,559	17,982,159	13,584,693
London Central Market (Smithfield)	16,091,832	9,819,425	10,850,112
London Metropolitan Archives	1,325,213	1,572,347	1,238,306
London Wall Car Park	218,843	219,142	211,806
Mansion House	2,200,311	2,104,434	2,382,125
Mayor's Court	312,999	288,264	252,688
New Spitalfields Market (Landlords)	6,795,740	5,753,961	5,899,856
New Street (21)	1,683,691	1,221,552	2,622,333
Open Spaces East Heath & Kenwood	206,709	186,303	178,405
Open Spaces Epping Forest	653,132	1,638,558	744,929
Open Spaces Golders Hill & Extension	364,971	324,787	435,668
Open Spaces Hampstead Heath Leisure	661,370	570,481	658,313
Open Spaces Parliament Hill	268,918	229,294	285,190
Streetlighting	3,576,514	2,139,478	1,961,862
Tower Bridge	2,299,519	1,785,824	2,161,561
Tower Hill Coach & Car Park	549,416	346,372	565,034
Walbrook Wharf Cleansing Depot	1,639,210	1,834,012	2,159,765
<b>Grand Total</b>	<b>109,955,253</b>	<b>91,571,857</b>	<b>95,985,826</b>

### 2. Bottom 5 performing sites

Weather Corrected data

Bottom 5 Performing Sites	Jun-19	Jun-21	Jun-22	Difference kWh 21 vs 22	Difference kWh 19 vs 22	Difference % 19 vs 22	Potential Rationale
New Street (21)	1,683,691	1,221,552	2,622,333	1,400,781	938,642	56%	Refurbishment from 2017 to 2019 would account for the lower consumption. Late 2021 has seen an increase in occupancy from approximately 30% to 70% due to recruitment drive.
GSMD - Milton Court	3,587,099	2,693,611	4,345,074	1,651,464	757,975	21%	The increase is due to an increase in heat. Otherwise, electricity and coolth has decreased
Walbrook Wharf Cleansing Depot	1,639,210	1,834,012	2,159,765	325,753	520,555	32%	Gas heaters in the vehicle workshop were replaced in 2019.
Mansion House	2,200,311	2,104,434	2,382,125	277,691	181,814	8%	The number of boilers on site has doubled from 2 to 4. Replaced 2 of the 4 chillers. Energy team investigating programming controls

\* Walbrook Wharf includes tenant consumption. Tenant consumption is further broken down in section 9

### 3.CO<sub>2e</sub> targets for City of London Corporation

City of London (own operations)	Units	Scope	2018	2019	2020	2021	2022	2023	2024	2025	2026	2030	2035	2040
Corporate Properties and Landlord Area	ktCO <sub>2e</sub>	Scope 1 & 2	36.4	33.9	30.4	24.4	22.8	19.4	18.1	17.0	14.85	7.2	4.5	3.1
Carbon Removals and Land Management (Scope 1)	ktCO <sub>2e</sub>	Scope 1	-16.2	-16.2	-16.2	-16.2	-16.2	-16.2	-16.2	-16.2	-17.64	-17.6	-17.6	-17.6
<b>Total net zero emissions</b>	<b>ktCO<sub>2e</sub></b>	<b>Scope 1 &amp; 2</b>	<b>20.2</b>	<b>17.7</b>	<b>14.2</b>	<b>8.19</b>	<b>6.54</b>	<b>3.18</b>	<b>1.83</b>	<b>0.76</b>	<b>-2.79</b>	<b>-10.5</b>	<b>-13.1</b>	<b>-14.6</b>
Net (negative removed)	ktCO <sub>2e</sub>	Scope 1 & 2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	17.6			
% reduction against baseline year	%	Scope 1 & 2	0%	-7%	-16%	-33%	-37%	-47%	-50%	-53%	-59%			
Target amount to reduce in period	ktCO <sub>2e</sub>	Scope 1 & 2					13.6		4.7		3.2			
% of target to deliver in that period	%	Scope 1 & 2					63%		22%		15%			
Total target amount to reduce	ktCO <sub>2e</sub>	Scope 1 & 2									21.5	To be reduced by 2026/7		

### 4. PSDS Project update

The large majority of the PSDS funded work is now complete. The ventilation project has been delayed until November 2022 to reduce the risks to maintaining the internal space conditions and protect the art works and manuscripts.

## 5. List of key sites in an energy performance partnership with Vital Energi

Guildhall Complex	City of London School	London Metropolitan Archives
Barbican Arts Centre	City of London School for Girls	Tower Hill Car Park
London Central Market (Smithfield)	Walbrook Wharf Cleansing Depot	GSMD – Sundial Ct
Central Criminal Court	Tower Bridge	
New Spitalfields Market	GSMD - Milton Court	
City of London Freeman's School	Mansion House	
Billingsgate Market	GSMD	

High Level Assessments of all the above sites have been completed, with further surveying in progress for the remainder. Projects are now being selected for investment grade proposals with initial work on this well underway. These projects will be presented for gateway approval following the review of the capital programme. Projects under consideration will typically include (but not limited to):

- Energy efficient lighting and controls
- Improvements to HVAC systems
- Optimisation and improvement of BMS controls
- Hydraulic and pumping optimisation
- Low carbon heating
- Renewables
- Fabric measures and draught proofing

## 6. Cumulative Forecast Carbon Savings – Note: this may require updating if the projected kWh savings change

		Carbon Savings - Cumulative (tCO <sub>2</sub> e/yr)								
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
PSDS	Gas	0	0	0	0	358	357	355	354	353
	Elec	0	0	0	0	595	622	579	585	548
	Citigen Heat	0	0	0	0	93	88	83	78	73
	Citigen Coolth	0	0	0	0	88	92	85	86	81
Phase 1& 2	Gas	0	0	0	0	7	7	7	7	7
	Elec	0	0	0	0	93	97	91	91	86
	Citigen Heat	0	0	0	0	18	17	17	16	15
	Citigen Coolth	0	0	0	0	4	5	4	4	4
Energy Saving Loan scheme	Elec	23	21	19	15	14	14	13	13	12
GHC Chillers	Elec	0	0	0	0	0	179	166	168	157
Operational management	Gas	0	348	347	349	365	387	409	431	453
	Elec	14	355	351	277	290	348	367	413	427
	Citigen Heat	0	0	120	71	86	104	119	132	143
	Citigen Coolth	0	14	362	278	271	301	297	316	312
CAS	Gas				0	153	598	885	1,170	1,451
	Elec				0	356	1,192	1,527	1,963	2,233
	Citigen Heat				0	50	188	266	334	392
	Citigen Coolth				0	38	145	196	259	300
<b>Total</b>		<b>37</b>	<b>738</b>	<b>1,200</b>	<b>991</b>	<b>2,879</b>	<b>4,740</b>	<b>5,467</b>	<b>6,421</b>	<b>7,045</b>

## 7. Cumulative forecast energy cost savings

		Energy Cost Savings - Cumulative (£/yr)								
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
PSDS	Gas	£ -	£ -	£ -	£ -	£ 59,733	£ 62,127	£ 65,295	£ 68,482	£ 69,359
	Elec	£ -	£ -	£ -	£ -	£ 530,581	£ 535,785	£ 539,696	£ 549,928	£ 565,152
	Citigen Heat	£ -	£ -	£ -	£ -	£ 81,950	£ 85,235	£ 89,581	£ 93,953	£ 95,156
	Citigen Coolth	£ -	£ -	£ -	£ -	£ 51,278	£ 53,333	£ 56,053	£ 58,788	£ 59,541
Phase 1 & 2	Gas	£ -	£ -	£ -	£ -	£ 1,197	£ 1,245	£ 1,308	£ 1,372	£ 1,390
	Elec	£ -	£ -	£ -	£ -	£ 82,928	£ 83,741	£ 84,352	£ 85,951	£ 88,331
	Citigen Heat	£ -	£ -	£ -	£ -	£ 16,327	£ 16,982	£ 17,848	£ 18,719	£ 18,959
	Citigen Coolth	£ -	£ -	£ -	£ -	£ 2,557	£ 2,659	£ 2,795	£ 2,931	£ 2,969
Energy Saving Loan scheme	Elec	£ 11,274	£ 11,761	£ 11,941	£ 11,670	£ 12,046	£ 12,164	£ 12,253	£ 12,485	£ 12,831
GHC Chillers	Elec	£ -	£ -	£ -	£ -	£ -	£ 153,895	£ 155,018	£ 157,957	£ 162,330
Operational management	Gas	£ -	£ 54,948	£ 51,159	£ 52,052	£ 60,857	£ 67,430	£ 75,211	£ 83,437	£ 89,120
	Elec	£ 6,710	£ 197,716	£ 218,471	£ 222,830	£ 258,881	£ 300,294	£ 341,644	£ 388,021	£ 439,767
	Citigen Heat	£ -	£ -	£ 51,193	£ 56,795	£ 75,794	£ 100,687	£ 128,789	£ 159,164	£ 185,600
	Citigen Coolth	£ -	£ 7,596	£ 139,209	£ 143,242	£ 158,752	£ 175,289	£ 194,918	£ 215,644	£ 229,763
CAS	Gas				£ -	£ 25,566	£ 104,107	£ 162,729	£ 226,368	£ 285,455
	Elec				£ -	£ 317,748	£ 1,027,204	£ 1,422,736	£ 1,844,884	£ 2,301,889
	Citigen Heat				£ -	£ 43,869	£ 182,512	£ 287,727	£ 402,360	£ 509,390
	Citigen Coolth				£ -	£ 22,443	£ 84,502	£ 128,555	£ 176,513	£ 220,992
<b>Total</b>		<b>£ 17,984</b>	<b>£ 272,021</b>	<b>£ 471,974</b>	<b>£ 486,589</b>	<b>£ 1,802,507</b>	<b>£ 3,049,193</b>	<b>£ 3,766,507</b>	<b>£ 4,546,958</b>	<b>£ 5,337,992</b>

## 8. Energy Reduction Programme Phase 1 and 2 estimated savings

	Budget (incl. risk)	Savings (£/yr)	Savings (tCO2e/yr)
<b>Energy Reduction Programme - Phase 1</b>			
Tower Hill Car Park Lighting	£176,080	£35,782	38
CCC Lighting	£181,703	£43,239	48
Smithfield Car Park Lighting	£90,600	£15,543	25
<b>Energy Reduction Programme - Phase 2</b>			
Smithfield HVAC Upgrades	£186,111	£31,622	37
London Metropolitan Archives Air Conditioning controls	£15,560	£2,770	33
Central Criminal Court Steam System Insulation	£3,241	£2,758	14
Mansion House Lighting	£66,568	£13,899	9
Tower Hill Coach & Car Park Ventilation Control	£123,611	£16,793	18

## 9. Tenant consumption

Note: This table has been newly created due to feedback from stakeholders requesting information about tenant and landlord consumption.

Tenant Consumption figures (kWh)		April - June 2021 Q1	July - Sept 2021 Q2	Oct - Dec 2021 Q3	Jan - March 2022	Total 21/22	April - June 2022 Q1
Electricity	Billingsgate Market	31,845	373,310	303,367	768,811	1,477,333	362,744
Gas	Billingsgate Market	202,690	50,789	190,709	65,883	510,071	129,255
Electricity	Smithfield Market	1,193,433	1,777,086	1,340,800	1,288,375	5,599,694	1,732,696
Electricity	New Spitalfields Market	1,262,768	1,507,878	1,177,265	1,031,986	4,979,897	1,234,481
Electricity	Walbrook Wharf	20,110	28,023	29,760	23,641	101,534	23,912

### 10. Operational properties only

The black bars represent operational portfolio carbon. The grey bars represent projected carbon. The black line shows actual carbon and projected carbon for the City's entire portfolio, including operational, investment and housing.

