

Appendix

1. Top 30 Site Energy Performance & Bottom 5 Performance Overview

Performance comparison by top 30 sites: Q3 2021/22 with Q3 2020/21 and 2019/2020

Note: performance includes the years 19/20 to display the impact of covid and provide a fair comparison.

Weather Corrected Data

Rolling 12 month comparison: 12 months to December 21 versus 12 months to December 20 and December 19

Row Labels	Sum of Dec-19	Sum of Dec-20	Sum of Dec-21	kWh Difference 20 Versus 21	kWh Difference 19 Versus 21	% Change 20 vs 21	% Change 19 vs 21
Animal Reception Centre	751,067	762,429	756,896	- 5,534	5,829	-1%	1%
Barbican Arts Centre	18,376,851	15,378,279	13,617,363	- 1,760,916	- 4,759,488	-11%	-26%
Baynard House Car Park	164,268	165,070	164,912	- 158	644	0%	0%
Billingsgate Market	3,823,144	3,438,748	3,464,910	26,162	358,234	1%	-9%
Bishopsgate Police Station	3,220,999	3,555,327	3,375,387	- 179,939	154,388	-5%	5%
Central Criminal Court	6,806,868	5,857,282	6,545,577	688,295	261,291	12%	-4%
City of London Crematorium	3,316,962	3,514,572	2,785,623	- 728,949	531,339	-21%	-16%
City of London Freeman's School	4,674,700	3,838,078	4,189,709	351,631	484,991	9%	-10%
City of London School	3,268,611	2,942,695	3,070,798	128,103	197,813	4%	-6%
City of London School For Girls	2,457,240	2,059,215	1,755,872	- 303,343	701,367	-15%	-29%
GSMD	1,960,494	1,350,961	1,847,736	496,775	112,758	37%	-6%
GSMD - Milton Court	3,311,184	2,695,107	3,368,252	673,144	57,067	25%	2%
GSMD - Sundial Court	1,798,269	1,468,709	1,614,720	146,011	183,550	10%	-10%
Guildhall Complex	17,373,432	18,922,339	14,255,097	- 4,667,241	3,118,335	-25%	-18%
London Central Market (Smithfield)	14,836,981	10,661,417	10,330,529	- 330,888	4,506,452	-3%	-30%
London Metropolitan Archives	1,277,259	1,519,882	1,422,943	- 96,939	145,684	-6%	11%
London Wall Car Park	222,445	219,947	213,757	- 6,190	8,689	-3%	-4%
Mansion House	2,138,532	2,107,232	2,076,265	- 30,967	62,267	-1%	-3%
Mayor's Court	211,852	259,335	278,159	18,823	66,306	7%	31%
New Spitalfields Market (Landlords)	6,705,459	6,046,452	5,824,980	- 221,472	880,479	-4%	-13%
New Street (21)	1,527,569	1,099,912	1,317,406	217,494	210,163	120%	-14%
Open Spaces East Heath & Kenwood	192,166	188,030	202,747	14,718	10,581	8%	6%
Open Spaces Epping Forest	994,652	1,588,657	1,363,983	- 224,675	369,331	-14%	37%
Open Spaces Golders Hill & Extension	400,438	370,240	356,227	- 14,013	44,211	-4%	-11%
Open Spaces Hampstead Heath Leisure	688,100	582,670	605,108	22,438	82,991	4%	-12%
Open Spaces Parliament Hill	284,855	263,747	263,354	- 393	21,501	0%	-8%
Streetlighting	3,365,904	2,390,058	2,029,741	- 360,317	1,336,163	85%	-40%
Tower Bridge	2,330,657	2,069,938	1,917,671	- 152,267	412,986	-7%	-18%
Tower Hill Coach & Car Park	551,307	495,338	391,580	- 103,758	159,727	-21%	-29%
Walbrook Wharf Cleansing Depot	1,684,201	1,882,680	1,962,451	79,772	278,251	4%	17%
Grand Total	108,716,467	97,694,349	91,369,753	- 6,324,596	- 17,346,713	-6%	-16%

2. Bottom 5 Performing Sites

Weather Corrected data

Bottom 5 Performing Sites Weather Corrected	Dec-19	Dec-20	Dec-21	Difference kWh 19 vs 21	Diff % 19 vs 21
Open Spaces Epping Forest	994,652	1,588,657	1,363,983	369,331	37.1%
Walbrook Wharf Cleansing Depot *	1,684,201	1,882,680	1,962,451	278,251	16.5%
Bishopsgate Police Station	1,441,099	877,227	1,614,720	154,388	-10.2%
London Metropolitan Archives	3,220,999	3,555,327	3,375,387	145,684	4.8%
Mayors Court	1,277,259	1,519,882	1,422,943	66,306	11.4%

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

3.CO₂ 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 Carbon Removals and Land Management (Scope 1)	ktCO ₂ e	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
	ktCO ₂ e	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
Total net zero emissions	ktCO₂e	Scope 1 & 2	20.2	17.7	14.2	8.19	6.54	3.18	1.83	0.76	-2.79	-10.5	-13.1	-14.6
Net (negative removed)	ktCO ₂ e	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 ₂ e	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 ₂ e	Scope 1 & 2									21.5	To be reduced by 2026/7		

4. Timetable for the completion of PSDS Projects

Project	Practical Completion
RA-W	Aug-22
Guildhall Ventilation	Aug-22
Guildhall Sub-Metering	Complete
Guildhall Chilled Water Modifications	Complete
LMA Ventilation	Complete
Building Analytics Software	June-22
Energy Software	Complete

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 13 of the above sites have been completed, with further surveying on the remainder. Following this, projects will be selected to enter into investment grade proposal. 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

		Carbon Savings - Cumulative (tCO ₂ 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
Total		37	738	1,200	991	2,879	4,740	5,467	6,421	7,045

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
Total		£ 17,984	£ 272,021	£ 471,974	£ 486,589	£ 1,802,507	£ 3,049,193	£ 3,766,507	£ 4,546,958	£ 5,337,992

8. Energy Reduction Programme Phase 1 & 2 Estimated savings

Phase 1 & 2				
Energy Reduction Programme - Phase 1		Budget (incl. risk)	Savings (£/yr)	Savings (tCO2e/yr)
Tower Hill Car Park Lighting		£121,440	£19,273	29
CCC Lighting		£181,703	£43,239	48
Smithfield Car Park Lighting		£90,600	£15,543	25
Energy Reduction Programme - Phase 2				
Smithfield HVAC Upgrades		£186,111	£31,622	37
London Metropolitan Archives Air Conditioning		£15,560	£2,770	33
Central Criminal Court		£3,241	£2,758	14
Mansion House Lighting		£66,568	£13,899	9
Tower Hill Coach & Car Park Ventilation Control		£113,652	£19,155	32

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
Electricity	Billingsgate Market	31,845	373,310	303,367
Gas	Billingsgate Market	202,690	50,789	190,709
Electricity	London Central Market (Smithfield)	1,193,433	1,777,086	1,340,800
Electricity	New Spitalfields Market (Landlords)	1,262,768	1,507,878	1,177,265
Electricity	Walbrook Wharf	20,110	28,023	29,760

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.

