

Appendix

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

Performance comparison by top 30 sites: Q4 2021/22 with Q4 2020/21 and 2019/2020

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

Q4:

Row Labels	Sum of Mar-				kWh		% Change 22 vs 21	% Change 22 vs 19
	19	20	21	22	Difference 22 Versus 21	kWh Difference 22 vs 19		
Animal Reception Centre	746,890	791,442	733,518	747,981	14,464	1,092	2%	0%
Barbican Arts Centre	17,473,586	20,584,573	11,679,670	14,465,174	2,785,504	3,008,412	24%	-17%
Baynard House Car Park	165,216	163,052	176,680	151,024	25,656	14,192	-15%	-9%
Billingsgate Market	3,579,617	3,800,079	3,324,503	3,461,594	137,091	118,023	4%	-3%
Bishopsgate Police Station	3,409,658	3,496,132	3,373,176	3,231,309	141,867	178,350	-4%	-5%
Central Criminal Court	7,825,308	6,853,478	5,771,230	6,631,306	860,076	1,194,002	15%	-15%
City of London Crematorium	2,788,975	3,625,693	3,343,369	2,292,229	1,051,140	496,745	-31%	-18%
City of London Freeman's School	4,861,084	4,588,096	3,401,836	4,586,124	1,184,288	274,961	35%	-6%
City of London School	3,229,652	3,155,744	2,936,372	3,155,942	219,570	73,710	7%	-2%
City of London School For Girls	2,860,320	2,334,938	1,733,175	1,742,499	9,323	1,117,821	1%	-39%
GSMD	2,265,131	1,528,999	1,453,884	1,992,445	538,561	272,686	37%	-12%
GSMD - Milton Court	3,876,940	3,063,553	2,418,558	3,849,028	1,430,469	27,912	59%	-1%
GSMD - Sundial Court	1,776,176	1,774,805	1,374,017	1,648,327	274,311	127,849	20%	-7%
Guildhall Complex	17,810,289	17,306,302	13,787,993	14,319,976	531,984	3,490,313	4%	-20%
London Central Market (Smithfield)	17,049,847	14,332,450	9,837,849	10,491,520	653,671	6,558,327	7%	-38%
London Metropolitan Archives	1,344,258	1,315,079	1,645,442	1,265,552	379,890	78,706	-23%	-6%
London Wall Car Park	219,171	211,916	226,319	215,333	10,986	3,838	-5%	-2%
Mansion House	2,289,797	2,058,914	1,973,846	2,250,048	276,202	39,749	14%	-2%
Mayor's Court	313,093	187,947	288,463	253,760	34,704	59,333	-12%	-19%
New Spitalfields Market (Landlords)	6,800,091	6,612,893	5,822,563	5,826,230	3,667	973,861	0%	-14%
New Street (21)	1,807,820	1,902,878	1,793,435	2,545,050	751,615	737,229	42%	41%
Open Spaces East Heath & Kenwood	215,554	195,228	173,463	193,818	20,355	21,736	12%	-10%
Open Spaces Epping Forest	662,274	641,894	648,932	746,886	97,954	84,612	15%	13%
Open Spaces Golders Hill & Extension	382,402	429,041	320,959	339,817	18,858	42,585	6%	-11%
Open Spaces Hampstead Heath Leisure	656,692	702,492	513,847	671,636	157,789	14,944	31%	2%
Open Spaces Parliament Hill	262,267	300,138	232,157	279,111	46,955	16,844	20%	6%
Streetlighting	3,622,410	3,124,297	2,212,522	1,983,340	229,182	1,639,070	-10%	-45%
Tower Bridge	2,304,911	2,392,513	1,827,242	2,015,708	188,466	289,203	10%	-13%
Tower Hill Coach & Car Park	542,795	548,716	355,994	537,209	181,215	5,586	51%	-1%
Walbrook Wharf Cleansing Depot	1,727,333	1,902,766	1,769,201	2,124,381	355,180	397,048	20%	23%
Grand Total	112,869,559	109,926,050	85,150,214	94,014,358	8,864,144	18,855,201	10%	-17%

2. Bottom 5 performing sites

Weather Corrected data

Bottom 5 Performing Sites Weather Corrected	Mar-19	Mar-20	Mar-21	Mar-22	Difference kWh 21 vs 22	Difference kWh 19 vs 22	Difference % 19 vs 22	Potential Rationale
New Street (21)	1,807,820	1,902,878	1,793,435	2,545,050	751,615	737,229	41%	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.
Walbrook Wharf Cleansing Depot	1,727,333	1,902,766	1,769,201	2,124,381	355,180	397,048	23%	Reinstatement of heating; increased occupancy including tenants (tenant consumption provided in Appendix 1)
Open Spaces Epping Forest	662,274	641,894	648,932	746,886	97,954	84,612	13%	BEMS investigation is occurring at the View. Possible issue with underfloor heating or increase in
Open Spaces Parliament Hill	262,267	300,138	232,157	279,111	46,955	16,844	6%	The Energy Team is currently collaborating with the site to determine potential rationale.
Open Spaces Hampstead Heath	656,692	702,492	513,847	671,636	157,789	14,944	2%	

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

3.CO_{2e} 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 _{2e}	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 _{2e}	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	ktCO_{2e}	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 _{2e}	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 _{2e}	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 _{2e}	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, with only commissioning and snagging to complete in July apart from the Guildhall Ventilation Project. This project has been delayed to reduce the risks to maintaining the internal space conditions and protect the art works and manuscripts until after the summer period, and so has been deferred in part for completion in November 2022.

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 in progress for the remainder. Following this, projects will be selected to enter into the investment grade proposal stage. 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 and 2 estimated savings

	Budget (incl. risk)	Savings (£/yr)	Savings (tCO ₂ e/yr)
Energy Reduction Programme - Phase 1			
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
Energy Reduction Programme - Phase 2			
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
Electricity	Billingsgate Market	31,845	373,310	303,367	768,811	1,477,333
Gas	Billingsgate Market	202,690	50,789	190,709	65,883	510,071
Electricity	London Central Market (Smithfield)	1,193,433	1,777,086	1,340,800	1,288,375	5,599,694
Electricity	New Spitalfields Market (Landlords)	1,262,768	1,507,878	1,177,265	1,031,986	4,979,897
Electricity	Wallbrook Wharf	20,110	28,023	29,760	23,641	101,534

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.

Carbon Trajectory All Sites

