CITY PLAN 2019 - 2040

Regulation 19 Full Representations

Appendix

November 2024

FAIRER WESTMINSTER

City of Westminster

ID/ Our reference	050/ EXT050 (Appendix A-L)
Channel	Email Letter
Respondent Name	**WPA**
Type of respondent	Developers, landowners and real estate company

By email

Westminster Property Association

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Figure 6.1 Retrofit First Policy Diagram

Are physical works proposed?

Yes

No

Exempt from consideration under this policy unless classified as major development

Is some form of demolition proposed?

Yes

No

Proposals supported on carbon grounds in principle subject to site specific considerations

Is the demolition 50% or more of the existing above ground structures, by area or volume, but not total demolition?

Yes

No

Retrofit
Do the proposals comply with the following definition of retrofit?

Development involving the re-use of at least 50% of the existing building in-situ (by mass or volume), retaining as a minimum the foundations, core, and floor slabs, and which results in energy, performance, and climate adaptation upgrades, which will reduce carbon emissions from the building and prolong its usable lifespan.

Yes

Proposals supported on carbon grounds in principle subject to site specific considerations

No

?

Substantial demolition

Options appraisal of retention, light refurb, deep refurb and full demo

Does the proposal constitute the removal, deconstruction or demolition of an existing building, which will entail the removal of all of its fit out, superstructure, cores and basement slab(s), but may involve the retention of the façade?

Yes

Full demolition

Options appraisal of retention, light refurb, deep refurb and full demo

Is the building a one storey building?

Exempt from consideration under this policy, although a pre-demolition audit is required to be submitted

Do the proposals deliver better public benefits than a comparable retrofit option?

No

Proposals resisted

Yes

Do the proposals have comparable embodied carbon to a comparable retrofit scheme?

Yes

No

Is demolition required as the Site has bespoke energy requirements?

Yes

No

Is demolition required due to Site structural constraints (which can be independently verified?)

No

Proposals resisted

Yes

Prepare a Whole Life Carbon Assessment

Can the proposed LETI targets be achieved as demonstrated by the Whole Life Carbon Assessment?

Yes

Submit the following documents:
- Pre-Demolition Audit
- Pre-Redevelopment Audit
- Circular Economy Statement

Design for longevity

Publicly display the total embodied carbon visibly to occupants and visitors at post-completion stage for major developments

No

Proposals resisted

Shortfall paid into carbon offset fund (only in exceptional circumstances)

Appendix A – Carbon, GVA, Jobs by borough

Region / Country	Second Tier Authority	Local Authority	Carbon Emissions 2021 (kt CO2e) [1]	Population ('000s, mid-year estimate)	Per Capita Emissions (tCO_2e)	Emissions per km^2 (kt CO_2e)	GVA [2] (£m, 2021, at 2019 prices)	Total Employment (All)	GVA (£m) / kt CO_2e	Jobs / kt CO_2e
Yorkshire and th	North Lincolnshi	North Lincolnshi	7,684	169.94	45.21	8.77	4,556	74.60	0.59	0.01
Wales	Wales	Neath Port Talbo	7,115	141.93	50.13	15.75	2,493	51.20	0.35	0.01
West Midlands	Birmingham	Birmingham	4,481	1142.49	3.92	16.73	26,789	554.60	5.98	0.12
North West	Cheshire	Cheshire West a	4,231	357.70	11.83	4.50	10,566	173.40	2.50	0.04
Yorkshire and th	Leeds	Leeds	3,915	809.04	4.84	7.10	26,297	497.50	6.72	0.13
South West	Cornwall	Cornwall	3,560	572.01	6.22	0.99	10,925	233.80	3.07	0.07
East Midlands	Derbyshire	High Peak	3,292	91.10	36.13	6.09	1,550	34.10	0.47	0.01
Scotland	Scotland	Fife	3,260	374.73	8.70	2.37	7,288	137.00	2.24	0.04
South West	Wiltshire	Wiltshire	3,226	513.41	6.28	0.99	12,192	210.30	3.78	0.07
North West	Cheshire	Cheshire East	3,170	400.53	7.92	2.72	14,261	194.00	4.50	0.06
Yorkshire and th	East Riding of Y	East Riding of Y	3,128	343.14	9.12	1.25	7,109	131.50	2.27	0.04
Scotland	Scotland	Aberdeenshire	2,993	262.69	11.39	0.47	6,397	102.80	2.14	0.03
South East	Buckinghamshir	Buckinghamshir	2,968	555.26	5.35	1.90	15,407	254.60	5.19	0.09
North East	Durham	County Durham	2,851	521.35	5.47	1.26	9,093	183.20	3.19	0.06
East Midlands	Northamptonshi	West Northampt	2,809	426.46	6.59	2.03	12,392	224.50	4.41	0.08
West Midlands	Shropshire	Shropshire	2,773	324.72	8.54	0.87	6,288	131.30	2.27	0.05
Scotland	Scotland	Glasgow City	2,710	635.13	4.27	15.37	21,528	436.40	7.94	0.16
Northern Ireland	Northern Ireland	Mid Ulster	2,642	150.60	17.54	1.35	3,780	63.10	1.43	0.02
Northern Ireland	Northern Ireland	Fermanagh and	2,466	116.93	21.09	0.82	2,355	47.20	0.96	0.02
Scotland	Scotland	Dumfries and Gi	2,439	148.79	16.39	0.37	3,355	59.10	1.38	0.02
Northern Ireland	Northern Ireland	Armagh City, Ba	2,418	219.13	11.04	1.68	3,986	86.00	1.65	0.04
Scotland	Scotland	Highland	2,410	238.06	10.12	0.09	5,975	115.70	2.48	0.05
South West	Dorset	Dorset	2,351	381.29	6.16	0.93	7,789	152.70	3.31	0.06
Scotland	Scotland	Falkirk	2,296	160.70	14.30	7.30	3,782	66.60	1.65	0.03
Yorkshire and th	Sheffield	Sheffield	2,270	554.40	4.09	6.17	12,835	272.00	5.65	0.12
Scotland	Scotland	City of Edinburgh	2,236	526.47	4.25	8.19	23,879	360.00	10.68	0.16
North East	Stockton-on-Tee	Stockton-on-Tee	2,211	197.03	11.22	10.54	5,165	83.20	2.34	0.04
Yorkshire and th	Bradford	Bradford	2,153	546.98	3.94	5.88	9,550	212.80	4.44	0.10
East Midlands	Northamptonshi	North Northampt	2,128	360.38	5.91	2.16	7,087	151.80	3.33	0.07
North West	Manchester	Manchester	2,096	549.85	3.81	18.12	24,908	431.60	11.89	0.21
Yorkshire and th	Doncaster	Doncaster	2,080	308.71	6.74	3.66	5,554	135.00	2.67	0.06
North East	Northumberland	Northumberland	2,070	321.56	6.44	0.41	5,241	107.30	2.53	0.05
Northern Ireland	Northern Ireland	Causeway Coas	2,051	141.66	14.48	1.03	2,147	46.00	1.05	0.02
Yorkshire and th	Wakefield	Wakefield	2,034	353.80	5.75	6.01	7,922	165.00	3.90	0.08
West Midlands	Warwickshire	Rugby	2,026	114.83	17.65	5.73	2,885	54.50	1.42	0.03
Yorkshire and th	Kirklees	Kirklees	1,945	433.36	4.49	4.76	7,817	161.80	4.02	0.08
Scotland	Scotland	North Lanarkshi	1,932	341.40	5.66	4.09	7,573	132.30	3.92	0.07
East of England	Cambridgeshire	Huntingdonshire	1,909	181.80	10.50	2.09	4,569	79.50	2.39	0.04
Northern Ireland	Northern Ireland	Newry, Mourne a	1,905	182.35	10.45	1.13	3,062	65.50	1.61	0.03
Wales	Wales	Flintshire	1,899	155.08	12.24	3.88	5,069	73.10	2.67	0.04
Scotland	Scotland	South Lanarkshi	1,874	322.63	5.81	1.06	6,690	117.20	3.57	0.06
North West	Liverpool	Liverpool	1,841	484.49	3.80	13.78	13,179	278.70	7.16	0.15
East of England	Norfolk	King's Lynn and	1,800	154.91	11.62	1.18	3,043	59.60	1.69	0.03
Wales	Wales	Cardiff	1,788	359.51	4.97	11.96	12,181	225.00	6.81	0.13
Wales	Wales	Carmarthenshire	1,769	188.19	9.40	0.73	3,363	69.40	1.90	0.04
Northern Ireland	Northern Ireland	Belfast	1,766	345.01	5.12	12.83	13,463	240.70	7.62	0.14
Wales	Wales	Powys	1,746	133.56	13.08	0.34	2,197	50.30	1.26	0.03
South West	South Gloucesti	South Gloucesti	1,746	290.74	6.00	3.25	12,307	165.20	7.05	0.09
Northern Ireland	Northern Ireland	Derry City and S	1,718	150.83	11.39	1.37	2,956	62.60	1.72	0.04
London	Westminster	Westminster	1,672	205.09	8.15	75.89	71,260	806.60	42.62	0.48
South West	Bristol, City of	Bristol, City of	1,626	471.12	3.45	6.91	15,479	302.70	9.52	0.19
East of England	Suffolk	West Suffolk	1,611	180.82	8.91	1.56	5,174	99.40	3.21	0.06
East of England	Bedfordshire	Central Bedfords	1,561	295.54	5.28	2.18	5,732	107.90	3.67	0.07
East of England	Cambridgeshire	Fenland	1,543	102.74	15.02	2.82	1,848	37.30	1.20	0.02
North West	Trafford	Trafford	1,537	235.55	6.52	14.49	9,184	174.90	5.98	0.11
Yorkshire and th	Rotherham	Rotherham	1,515	266.18	5.69	5.29	4,803	103.50	3.17	0.07
Northern Ireland	Northern Ireland	Mid and East An	1,509	139.13	10.84	1.42	2,479	45.00	1.64	0.03
Wales	Wales	Pembrokeshire	1,489	123.67	12.04	0.90	2,442	45.90	1.64	0.03
London	Hillingdon	Hillingdon	1,481	304.79	4.86	12.80	11,554	197.00	7.80	0.13
West Midlands	Herefordshire, C	Herefordshire, C	1,473	187.56	7.85	0.68	3,974	79.90	2.70	0.05
North West	Cumbria	Eden	1,472	54.96	26.78	0.68	1,417	25.80	0.96	0.02
North West	Warrington	Warrington	1,440	211.23	6.82	7.89	8,120	140.30	5.64	0.10
Yorkshire and th	North Yorkshire	Harrogate	1,414	164.11	8.62	1.08	4,467	79.00	3.16	0.06
East of England	Cambridgeshire	East Cambridge	1,407	88.15	15.96	2.16	1,998	32.10	1.42	0.02
West Midlands	Sandwell	Sandwell	1,401	341.73	4.10	16.38	6,098	128.50	4.35	0.09
East of England	Cambridgeshire	South Cambridg	1,370	163.00	8.41	1.52	5,720	86.10	4.17	0.06
North West	Salford	Salford	1,363	270.76	5.03	14.02	8,343	159.00	6.12	0.12
East Midlands	Nottingham	Nottingham	1,358	319.57	4.25	18.20	9,891	210.10	7.28	0.15
South East	Milton Keynes	Milton Keynes	1,346	288.20	4.67	4.36	13,669	182.00	10.15	0.14
West Midlands	Coventry	Coventry	1,344	343.32	3.91	13.63	9,418	165.30	7.01	0.12
North West	Wigan	Wigan	1,341	329.76	4.07	7.13	5,154	111.10	3.84	0.08
London	Barnet	Barnet	1,335	388.64	3.44	15.39	9,113	145.20	6.82	0.11
West Midlands	Staffordshire	Staffordshire Mo	1,333	95.99	13.89	2.31	1,489	30.20	1.12	0.02
South West	Dorset	Bournemouth, C	1,331	400.11	3.33	7.65	10,311	188.40	7.75	0.14
East of England	Suffolk	East Suffolk	1,328	246.80	5.38	1.03	5,171	95.70	3.89	0.07
East Midlands	Leicester	Leicester	1,327	366.02	3.63	18.10	8,467	178.10	6.38	0.13
Yorkshire and th	Barnsley	Barnsley	1,317	244.89	5.38	4.00	4,047	88.00	3.07	0.07
Scotland	Scotland	East Lothian	1,313	109.58	11.98	1.87	1,851	33.90	1.41	0.03
Scotland	Scotland	Perth and Kinro	1,307	153.81	8.49	0.24	4,080	64.00	3.12	0.05
North West	St. Helens	St. Helens	1,306	183.39	7.12	9.58	2,661	67.30	2.04	0.05
South West	Somerset	South Somerset	1,297	173.17	7.49	1.35	4,033	69.50	3.11	0.05
Northern Ireland	Northern Ireland	Lisburn and Cas	1,295	149.27	8.68	2.54	3,220	64.80	2.49	0.05
South East	Oxfordshire	Cherwell	1,294	161.84	8.00	2.20	4,774	85.40	3.69	0.07
Scotland	Scotland	Scottish Borders	1,292	116.02	11.13	0.27	2,424	42.50	1.88	0.03
Yorkshire and th	North East Lincs	North East Lincs	1,290	157.20	8.21	6.36	3,153	67.90	2.44	0.05

North West	Sefton	Sefton	1,284	279.69	4.59	6.33	4,171	92.60	**3.25**	**0.07**
Scotland	Scotland	Angus	1,263	116.12	10.87	0.57	2,014	35.40	**1.59**	**0.03**
Northern Ireland	Northern Ireland	Antrim and Newt	1,255	145.85	8.61	1.72	3,295	61.10	**2.62**	**0.05**
London	Enfield	Enfield	1,235	329.60	3.75	15.03	7,500	111.60	**6.07**	**0.09**
North West	Bolton	Bolton	1,229	296.04	4.15	8.80	5,910	120.20	**4.81**	**0.10**
South East	Kent	Swale	1,227	152.22	8.06	2.91	3,285	51.70	**2.68**	**0.04**
West Midlands	Solihull	Solihull	1,226	216.67	5.66	6.88	9,335	149.80	**7.61**	**0.12**
Yorkshire and th	North Yorkshire	Hambleton	1,222	91.04	13.42	0.93	2,416	41.30	**1.98**	**0.03**
Scotland	Scotland	Aberdeen City	1,218	227.43	5.36	5.93	9,220	159.90	**7.57**	**0.13**
North East	Newcastle upon	Newcastle upon	1,217	298.26	4.08	10.57	8,910	194.00	**7.32**	**0.16**
North East	Redcar and Clev	Redcar and Clev	1,215	136.62	8.89	4.79	1,744	39.60	**1.44**	**0.03**
South West	North Somerset	North Somerset	1,212	217.40	5.58	3.10	4,307	91.50	**3.55**	**0.08**
Northern Ireland	Northern Ireland	Ards and North I	1,208	163.83	7.37	2.13	2,067	43.60	**1.71**	**0.04**
Wales	Wales	Wrexham	1,208	135.13	8.94	2.40	3,422	58.90	**2.83**	**0.05**
Wales	Wales	Vale of Glamorg	1,206	132.53	9.10	3.55	1,845	43.20	**1.53**	**0.04**
North West	Wirral	Wirral	1,198	320.60	3.74	4.73	5,119	103.90	**4.27**	**0.09**
East Midlands	Derby	Derby	1,195	261.14	4.58	15.32	7,119	138.70	**5.95**	**0.12**
London	Southwark	Southwark	1,187	306.37	3.87	39.67	19,896	295.80	**16.77**	**0.25**
Scotland	Scotland	Na h-Eileanan S	1,184	26.64	44.46	0.36	553	11.80	**0.47**	**0.01**
Wales	Wales	Swansea	1,180	237.83	4.96	2.80	5,242	109.90	**4.44**	**0.09**
East of England	Peterborough	Peterborough	1,178	216.35	5.44	3.43	6,488	116.50	**5.51**	**0.10**
North East	Sunderland	Sunderland	1,175	274.21	4.29	8.42	6,323	113.80	**5.38**	**0.10**
West Midlands	Staffordshire	Stafford	1,167	137.23	8.50	1.95	3,055	61.30	**2.62**	**0.05**
North West	Stockport	Stockport	1,164	295.24	3.94	9.24	6,731	137.10	**5.78**	**0.12**
West Midlands	Dudley	Dudley	1,163	323.58	3.59	11.87	5,165	111.90	**4.44**	**0.10**
London	Ealing	Ealing	1,162	366.13	3.17	20.92	9,346	130.90	**8.04**	**0.11**
North West	Cumbria	Allerdale	1,161	96.38	12.04	0.88	1,752	35.70	**1.51**	**0.03**
North West	Lancashire	Ribble Valley	1,160	61.91	18.74	1.98	2,086	29.70	**1.80**	**0.03**
South West	Somerset	Sedgemoor	1,159	125.75	9.22	1.91	2,384	53.90	**2.06**	**0.05**
South East	West Berkshire	West Berkshire	1,151	161.87	7.11	1.63	8,373	105.00	**7.28**	**0.09**
Scotland	Scotland	West Lothian	1,150	185.58	6.20	2.66	4,953	77.40	**4.31**	**0.07**
West Midlands	Worcestershire	Wychavon	1,148	133.10	8.63	1.73	3,051	55.30	**2.66**	**0.05**
East Midlands	Lincolnshire	East Lindsey	1,148	142.95	8.03	0.63	2,280	46.80	**1.99**	**0.04**
East of England	Norfolk	Breckland	1,142	142.16	8.03	0.87	2,589	49.40	**2.27**	**0.04**
Wales	Wales	Newport	1,134	159.66	7.10	5.22	3,845	77.10	**3.39**	**0.07**
London	Croydon	Croydon	1,134	390.51	2.90	13.10	10,124	126.40	**8.93**	**0.11**
West Midlands	Stoke on Trent	Stoke-on-Trent	1,127	258.04	4.37	12.06	5,688	125.90	**5.05**	**0.11**
Yorkshire and th	Kingston upon H	Kingston upon H	1,121	266.46	4.21	13.75	5,727	129.00	**5.11**	**0.12**
West Midlands	Warwickshire	Stratford-on-Avo	1,120	135.96	8.24	1.15	4,623	74.80	**4.13**	**0.07**
East Midlands	Rutland	Rutland	1,120	41.38	27.07	2.84	831	16.40	**0.74**	**0.01**
East of England	Norfolk	South Norfolk	1,118	142.53	7.84	1.23	2,702	59.60	**2.42**	**0.05**
Wales	Wales	Rhondda Cynon	1,117	237.50	4.70	2.63	4,252	81.90	**3.81**	**0.07**
North West	Cumbria	South Lakeland	1,103	104.68	10.54	0.63	2,700	52.00	**2.45**	**0.05**
London	Tower Hamlets	Tower Hamlets	1,102	312.27	3.53	51.07	35,720	303.50	**32.42**	**0.28**
West Midlands	Walsall	Walsall	1,089	284.31	3.83	10.47	4,554	103.20	**4.18**	**0.09**
East Midlands	Leicestershire	North West Leic	1,083	105.01	10.31	3.88	3,597	72.70	**3.32**	**0.07**
Yorkshire and th	Calderdale	Calderdale	1,075	206.82	5.20	2.95	4,774	91.80	**4.44**	**0.09**
London	Brent	Brent	1,075	338.92	3.17	24.85	8,754	124.00	**8.15**	**0.12**
North West	Lancashire	Lancaster	1,073	142.16	7.55	1.64	2,746	57.00	**2.56**	**0.05**
Yorkshire and th	North Yorkshire	Selby	1,072	92.40	11.60	1.78	2,298	37.40	**2.14**	**0.03**
London	Havering	Havering	1,069	262.02	4.08	9.34	5,488	87.80	**5.13**	**0.08**
East Midlands	Lincolnshire	South Kesteven	1,066	143.79	7.41	1.13	2,656	61.20	**2.49**	**0.06**
North West	Lancashire	West Lancashire	1,061	117.13	9.06	2.78	2,577	49.90	**2.43**	**0.05**
South West	Somerset	Mendip	1,045	116.29	8.99	1.41	2,229	46.40	**2.13**	**0.04**
North West	Cumbria	Carlisle	1,043	110.26	9.46	0.99	2,661	59.20	**2.55**	**0.06**
South East	Hampshire	Basingstoke and	1,031	185.66	5.55	1.63	6,478	86.70	**6.28**	**0.08**
London	Camden	Camden	1,024	210.39	4.87	47.01	31,384	415.00	**30.64**	**0.41**
South West	Somerset	Somerset West	1,021	157.91	6.46	0.84	3,226	70.60	**3.16**	**0.07**
East Midlands	Derbyshire	Bolsover	1,016	80.48	12.63	6.34	2,014	33.80	**1.98**	**0.03**
London	Bromley	Bromley	1,016	329.83	3.08	6.77	7,178	110.20	**7.07**	**0.11**
London	Hounslow	Hounslow	1,014	287.94	3.52	17.93	15,395	163.80	**15.18**	**0.16**
South West	Swindon	Swindon	1,013	233.71	4.34	4.40	9,018	114.10	**8.90**	**0.11**
East of England	Essex	Basildon	1,013	187.66	5.40	9.17	5,906	90.90	**5.83**	**0.09**
East of England	Thurrock	Thurrock	1,011	175.90	5.75	5.48	4,199	74.40	**4.15**	**0.07**
East Midlands	Nottinghamshire	Newark and She	1,008	123.38	8.17	1.55	2,588	53.90	**2.57**	**0.05**
Wales	Wales	Gwynedd	1,006	117.07	8.59	0.38	2,259	55.50	**2.25**	**0.06**
London	Greenwich	Greenwich	1,005	289.25	3.48	19.93	5,024	89.10	**5.00**	**0.09**
West Midlands	Telford and Wre	Telford and Wre	1,003	185.84	5.40	3.45	4,726	95.40	**4.71**	**0.10**
North East	Gateshead	Gateshead	998	196.15	5.09	6.93	4,206	92.70	**4.21**	**0.09**
West Midlands	Wolverhampton	Wolverhampton	986	264.04	3.73	14.20	5,208	110.80	**5.28**	**0.11**
East of England	Essex	Epping Forest	981	134.91	7.27	2.89	3,728	55.30	**3.80**	**0.06**
North West	Rochdale	Rochdale	976	224.09	4.35	6.17	3,623	80.50	**3.71**	**0.08**
East Midlands	Lincolnshire	North Kesteven	974	118.55	8.22	1.06	2,657	41.80	**2.73**	**0.04**
East of England	Essex	Chelmsford	967	181.76	5.32	2.82	5,316	90.30	**5.50**	**0.09**
London	Newham	Newham	966	350.63	2.75	25.04	6,663	133.10	**6.90**	**0.14**
West Midlands	Staffordshire	South Staffordsh	955	110.79	8.62	2.34	1,995	38.30	**2.09**	**0.04**
South West	Devon	East Devon	953	152.12	6.27	1.16	2,766	53.60	**2.90**	**0.06**
East Midlands	Leicestershire	Charnwood	950	182.82	5.20	3.40	3,717	75.20	**3.91**	**0.08**
East Midlands	Nottinghamshire	Bassetlaw	948	118.35	8.01	1.48	2,376	51.20	**2.51**	**0.05**
South East	Hampshire	New Forest	944	176.26	5.35	1.22	4,657	74.40	**4.93**	**0.08**
South West	Plymouth	Plymouth	939	264.73	3.55	11.13	5,440	117.90	**5.79**	**0.13**
London	Lambeth	Lambeth	926	317.50	2.92	34.00	11,511	154.20	**12.43**	**0.17**
West Midlands	Warwickshire	North Warwicksh	920	65.34	14.07	3.24	2,822	53.20	**3.07**	**0.06**
East of England	Essex	Colchester	918	192.42	4.77	2.65	4,407	85.30	**4.80**	**0.09**
South East	Medway	Medway	912	279.83	3.26	3.39	5,996	97.50	**6.57**	**0.11**
Scotland	Scotland	Renfrewshire	903	179.94	5.02	3.35	4,137	85.40	**4.58**	**0.09**
East of England	Hertfordshire	St Albans	897	148.64	6.03	5.56	4,236	64.90	**4.72**	**0.07**
West Midlands	Warwickshire	Warwick	892	148.73	6.00	3.15	6,353	95.20	**7.12**	**0.11**
Wales	Wales	Ceredigion	892	70.66	12.62	0.49	1,272	28.30	**1.43**	**0.03**
Scotland	Scotland	North Ayrshire	891	134.22	6.64	0.99	2,356	42.60	**2.64**	**0.05**
South East	Oxfordshire	Vale of White Ho	881	139.49	6.31	1.52	4,656	72.70	**5.29**	**0.08**

Yorkshire and th	York	York	879	201.67	4.36	3.23	5,846	113.30	**6.65**	**0.13**
North West	Bury	Bury	878	193.82	4.53	8.83	3,263	70.80	**3.72**	**0.08**
North West	Lancashire	Wyre	876	112.46	7.79	2.67	1,576	33.00	**1.80**	**0.04**
North West	Lancashire	Preston	873	147.62	5.91	6.10	4,040	97.70	**4.63**	**0.11**
South East	Oxfordshire	South Oxfordshi	872	150.02	5.81	1.29	4,304	63.60	**4.93**	**0.07**
Scotland	Scotland	South Ayrshire	867	112.45	7.71	0.70	2,234	46.60	**2.58**	**0.05**
Wales	Wales	Bridgend	865	145.76	5.93	3.39	3,163	58.80	**3.66**	**0.07**
North East	North Tyneside	North Tyneside	863	209.15	4.13	10.18	4,567	87.90	**5.29**	**0.10**
London	Wandsworth	Wandsworth	863	328.37	2.63	24.50	6,826	128.00	**7.91**	**0.15**
North West	Knowsley	Knowsley	862	154.97	5.56	9.96	3,643	76.50	**4.23**	**0.09**
East of England	Bedfordshire	Bedford	860	185.76	4.63	1.80	4,410	81.40	**5.13**	**0.09**
South East	Hampshire	Test Valley	859	131.19	6.55	1.37	3,430	61.30	**3.99**	**0.07**
East Midlands	Derbyshire	Derbyshire Dales	856	71.68	11.94	1.08	1,599	33.90	**1.87**	**0.04**
Scotland	Scotland	East Ayrshire	855	122.02	7.01	0.67	1,767	41.30	**2.07**	**0.05**
West Midlands	Staffordshire	East Staffordshi	854	124.48	6.86	2.19	3,426	63.80	**4.01**	**0.07**
Wales	Wales	Monmouthshire	852	93.19	9.14	0.96	2,078	36.30	**2.44**	**0.04**
South East	Kent	Maidstone	850	176.71	4.81	2.16	4,531	77.00	**5.33**	**0.09**
South East	Windsor and Ma	Windsor and Ma	844	153.92	5.49	4.26	7,219	95.30	**8.55**	**0.11**
North West	Tameside	Tameside	844	231.20	3.65	8.18	3,184	71.90	**3.77**	**0.09**
West Midlands	Staffordshire	Newcastle-under	844	123.03	6.86	4.00	2,081	46.40	**2.47**	**0.05**
East Midlands	Nottinghamshire	Rushcliffe	844	119.44	7.07	2.06	3,005	48.70	**3.56**	**0.06**
South West	Devon	Mid Devon	843	83.19	10.13	0.92	1,286	27.30	**1.53**	**0.03**
North West	Oldham	Oldham	841	242.07	3.48	5.91	3,746	90.30	**4.45**	**0.11**
South East	Hampshire	Winchester	840	127.92	6.56	1.27	5,157	93.60	**6.14**	**0.11**
South West	Gloucestershire	Stroud	837	121.53	6.89	1.76	2,796	50.60	**3.34**	**0.06**
Scotland	Scotland	Moray	834	96.41	8.66	0.37	2,212	37.70	**2.65**	**0.05**
East of England	Essex	Braintree	832	155.71	5.34	1.36	3,490	55.10	**4.20**	**0.07**
South East	Kent	Tonbridge and M	817	132.39	6.17	3.39	4,877	67.30	**5.97**	**0.08**
London	Bexley	Bexley	816	246.54	3.31	12.69	5,974	76.60	**7.32**	**0.09**
Wales	Wales	Caerphilly	814	176.01	4.62	2.93	2,914	55.50	**3.58**	**0.07**
South East	Brighton and Ho	Brighton and Ho	812	276.33	2.94	9.50	8,922	149.80	**10.99**	**0.18**
South East	Kent	Sevenoaks	811	120.84	6.71	2.19	4,070	50.90	**5.02**	**0.06**
East Midlands	Lincolnshire	West Lindsey	807	95.57	8.44	0.70	1,621	28.20	**2.01**	**0.03**
Scotland	Scotland	Shetland Islands	801	22.94	34.94	0.48	772	13.70	**0.96**	**0.02**
East of England	Norfolk	Broadland	801	132.25	6.06	1.45	3,960	50.40	**4.95**	**0.06**
South East	Portsmouth	Portsmouth	784	206.83	3.79	13.04	6,285	108.10	**8.02**	**0.14**
East of England	Norfolk	North Norfolk	783	103.26	7.58	0.79	1,588	34.80	**2.03**	**0.04**
Wales	Wales	Conwy	783	114.83	6.82	0.68	1,667	43.30	**2.13**	**0.06**
South East	Slough	Slough	777	158.29	4.91	23.87	9,089	85.10	**11.70**	**0.11**
East of England	Suffolk	Mid Suffolk	776	103.42	7.51	0.89	2,349	36.80	**3.03**	**0.05**
East Midlands	Leicestershire	Harborough	773	98.29	7.86	1.30	2,008	42.20	**2.60**	**0.05**
East of England	Essex	Uttlesford	771	91.95	8.39	1.20	2,115	45.90	**2.74**	**0.06**
South West	Devon	Teignbridge	765	135.22	5.66	1.12	2,266	49.10	**2.96**	**0.06**
East Midlands	Derbyshire	Amber Valley	764	126.49	6.04	2.88	2,842	50.60	**3.72**	**0.07**
South West	Gloucestershire	Tewkesbury	764	95.43	8.00	1.84	3,159	50.90	**4.14**	**0.07**
London	Redbridge	Redbridge	764	309.84	2.46	13.53	4,649	83.60	**6.09**	**0.11**
South West	Bath and North E	Bath and North E	761	192.42	3.95	2.17	4,126	94.90	**5.42**	**0.12**
South East	Southampton	Southampton	755	247.26	3.05	13.39	6,163	114.50	**8.16**	**0.15**
West Midlands	Staffordshire	Lichfield	755	106.91	7.06	2.28	2,435	51.50	**3.23**	**0.07**
East Midlands	Derbyshire	South Derbyshir	751	108.06	6.95	2.22	3,138	35.00	**4.18**	**0.05**
London	Kensington and	Kensington and	745	143.94	5.18	60.18	8,894	140.40	**11.94**	**0.19**
East Midlands	Lincolnshire	South Holland	744	95.49	7.79	0.91	2,225	38.30	**2.99**	**0.05**
East Midlands	Leicestershire	Hinckley and Bo	739	113.66	6.50	2.49	2,549	43.90	**3.45**	**0.06**
North West	Halton	Halton	738	128.58	5.74	8.17	3,858	63.90	**5.23**	**0.09**
South West	Devon	North Devon	737	99.44	7.41	0.67	2,262	44.30	**3.07**	**0.06**
South East	Surrey	Guildford	734	143.93	5.10	2.71	5,574	85.10	**7.59**	**0.12**
North West	Lancashire	Chorley	733	117.94	6.22	3.61	2,046	42.00	**2.79**	**0.06**
South East	Surrey	Reigate and Bar	722	151.42	4.77	5.59	5,703	74.10	**7.90**	**0.10**
East of England	Hertfordshire	East Hertfordshi	718	150.69	4.76	1.51	4,068	67.70	**5.67**	**0.09**
Yorkshire and th	North Yorkshire	Scarborough	718	108.96	6.59	0.87	1,987	46.40	**2.77**	**0.06**
Wales	Wales	Denbighshire	715	96.05	7.44	0.84	1,798	43.40	**2.52**	**0.06**
London	Barking and Dag	Barking and Dag	713	218.53	3.26	18.87	3,163	60.90	**4.43**	**0.09**
West Midlands	Worcestershire	Bromsgrove	712	99.48	7.16	3.28	2,754	49.30	**3.87**	**0.07**
South East	Wokingham	Wokingham	710	178.17	3.98	3.97	8,411	92.70	**11.85**	**0.13**
Scotland	Scotland	Stirling	709	93.47	7.59	0.31	2,479	47.90	**3.50**	**0.07**
London	Lewisham	Lewisham	708	299.81	2.36	20.05	3,515	71.60	**4.96**	**0.10**
South West	Devon	South Hams	707	89.21	7.93	0.78	2,055	38.90	**2.91**	**0.06**
South East	West Sussex	Chichester	706	124.53	5.67	0.87	3,296	61.30	**4.67**	**0.09**
East of England	Hertfordshire	Dacorum	699	155.22	4.51	3.29	4,809	118.20	**6.88**	**0.17**
South East	East Sussex	Wealden	699	160.75	4.35	0.84	2,650	51.20	**3.79**	**0.07**
East of England	Luton	Luton	697	224.83	3.10	16.07	4,844	109.60	**6.95**	**0.16**
North East	Hartlepool	Hartlepool	691	92.57	7.47	7.03	1,343	30.60	**1.94**	**0.04**
South East	West Sussex	Horsham	688	147.49	4.67	1.30	3,439	58.70	**5.00**	**0.09**
South West	Gloucestershire	Cotswold	686	91.13	7.53	0.59	3,782	46.40	**5.51**	**0.07**
East of England	Hertfordshire	North Hertfordsh	684	133.57	5.12	1.82	4,046	53.90	**5.91**	**0.08**
South East	Kent	Ashford	681	133.18	5.11	1.17	3,124	61.40	**4.59**	**0.09**
East of England	Essex	Tendring	679	148.93	4.56	1.86	1,950	50.20	**2.87**	**0.07**
Yorkshire and th	North Yorkshire	Richmondshire	678	50.36	13.46	0.51	1,177	17.80	**1.74**	**0.03**
East Midlands	Nottinghamshire	Broxtowe	675	110.81	6.09	8.42	2,124	38.30	**3.15**	**0.06**
London	Merton	Merton	672	215.32	3.12	17.85	5,553	77.30	**8.27**	**0.12**
East of England	Hertfordshire	Hertsmere	667	108.11	6.17	6.59	4,404	59.10	**6.61**	**0.09**
South East	Kent	Dartford	665	116.78	5.70	8.72	3,808	69.70	**5.72**	**0.10**
East Midlands	Leicestershire	Blaby	657	103.27	6.36	5.03	3,554	65.00	**5.41**	**0.10**
London	Haringey	Haringey	654	264.13	2.48	22.10	3,879	75.70	**5.93**	**0.12**
North East	Middlesbrough	Middlesbrough	654	143.73	4.55	11.98	2,793	63.80	**4.27**	**0.10**
North West	Blackburn with D	Blackburn with D	653	154.92	4.22	4.77	3,094	73.50	**4.74**	**0.11**
South East	West Sussex	Mid Sussex	652	152.95	4.26	1.95	3,421	60.30	**5.25**	**0.09**
Yorkshire and th	North Yorkshire	Craven	651	57.09	11.40	0.55	1,539	32.60	**2.37**	**0.05**
London	Waltham Forest	Waltham Forest	650	278.05	2.34	16.75	3,998	79.70	**6.15**	**0.12**
North West	Lancashire	South Ribble	648	111.20	5.83	5.65	3,830	49.40	**5.91**	**0.08**
London	Islington	Islington	648	216.77	2.99	43.59	20,076	264.20	**31.00**	**0.41**

South East	Oxfordshire	Oxford	644	160.02	4.02	14.11	6,116	123.30	**9.50**	**0.19**
South West	Devon	Torridge	643	68.48	9.39	0.65	950	20.60	**1.48**	**0.03**
Scotland	Scotland	Dundee City	642	147.72	4.35	10.32	3,269	77.80	**5.09**	**0.12**
Yorkshire and th	North Yorkshire	Ryedale	638	54.90	11.62	0.42	1,437	25.90	**2.25**	**0.04**
East Midlands	Nottinghamshire	Ashfield	637	126.37	5.04	5.82	2,779	58.00	**4.36**	**0.09**
London	City of London	City of London	636	8.62	73.81	201.97	86,718	614.50	**136.32**	**0.97**
South East	Surrey	Elmbridge	635	139.37	4.55	6.59	6,448	65.10	**10.16**	**0.10**
London	Hammersmith ar	Hammersmith ar	629	183.30	3.43	36.69	10,358	147.60	**16.46**	**0.23**
London	Richmond upon	Richmond upon	626	195.23	3.21	10.66	7,169	82.10	**11.44**	**0.13**
South East	Oxfordshire	West Oxfordshir	622	115.16	5.40	0.87	2,943	48.80	**4.73**	**0.08**
London	Harrow	Harrow	620	260.99	2.38	12.28	5,267	78.10	**8.50**	**0.13**
London	Sutton	Sutton	618	209.52	2.95	14.10	4,005	92.20	**6.48**	**0.15**
South West	Devon	West Devon	615	57.49	10.70	0.53	742	16.80	**1.21**	**0.03**
North East	Darlington	Darlington	615	108.22	5.68	3.11	2,330	53.10	**3.79**	**0.09**
South East	Kent	Canterbury	608	156.55	3.88	1.91	3,260	68.70	**5.37**	**0.11**
North West	Lancashire	Fylde	606	81.85	7.41	3.32	2,787	41.00	**4.60**	**0.07**
London	Hackney	Hackney	603	259.96	2.32	31.66	9,710	170.40	**16.10**	**0.28**
East Midlands	Derbyshire	Erewash	602	113.05	5.32	5.49	1,735	40.30	**2.88**	**0.07**
West Midlands	Worcestershire	Malvern Hills	601	79.97	7.52	1.04	1,557	31.10	**2.59**	**0.05**
East of England	Hertfordshire	Welwyn Hatfield	599	119.54	5.01	4.62	5,216	81.80	**8.71**	**0.14**
East Midlands	Derbyshire	North East Derb	599	102.32	5.85	2.17	1,568	29.90	**2.62**	**0.05**
South East	Hampshire	East Hampshire	597	126.20	4.73	1.16	2,582	45.00	**4.33**	**0.08**
Wales	Wales	Isle of Anglesey	593	68.94	8.60	0.79	992	22.50	**1.67**	**0.04**
South East	Reading	Reading	583	173.17	3.36	14.42	8,574	119.40	**14.72**	**0.20**
London	Kingston upon T	Kingston upon T	580	167.85	3.46	15.57	4,472	78.60	**7.71**	**0.14**
South East	Surrey	Runnymede	577	87.74	6.58	7.39	6,812	60.50	**11.81**	**0.10**
North West	Cumbria	Barrow-in-Furne	575	67.38	8.53	4.35	1,724	30.80	**3.00**	**0.05**
South East	West Sussex	Arun	565	165.23	3.42	2.51	2,361	50.00	**4.18**	**0.09**
South East	Isle of Wight	Isle of Wight	565	140.89	4.01	1.44	2,478	52.20	**4.39**	**0.09**
East of England	Suffolk	Babergh	562	92.72	6.07	0.92	1,789	33.20	**3.18**	**0.06**
South East	Surrey	Tandridge	558	88.14	6.33	2.25	1,827	33.40	**3.27**	**0.06**
South East	Hampshire	Eastleigh	557	136.97	4.07	6.53	4,385	69.00	**7.87**	**0.12**
East of England	Cambridgeshire	Cambridge	557	144.71	3.85	13.68	6,341	111.90	**11.39**	**0.20**
East of England	Hertfordshire	Three Rivers	553	93.95	5.89	6.22	4,370	42.80	**7.90**	**0.08**
South East	Kent	Thanet	553	140.68	3.93	4.92	2,087	43.60	**3.77**	**0.08**
South East	Surrey	Surrey Heath	546	90.65	6.02	5.74	3,740	47.50	**6.85**	**0.09**
West Midlands	Warwickshire	Nuneaton and B	541	134.29	4.03	6.85	2,030	44.60	**3.75**	**0.08**
South East	West Sussex	Crawley	541	118.58	4.56	12.02	5,254	85.70	**9.72**	**0.16**
East of England	Southend-on-Se	Southend-on-Se	528	180.60	2.92	7.77	2,749	65.90	**5.21**	**0.12**
East of England	Essex	Brentwood	527	77.10	6.84	3.44	2,971	32.70	**5.63**	**0.06**
South West	Gloucestershire	Forest of Dean	527	87.14	6.04	0.94	2,083	24.90	**3.96**	**0.05**
South East	Surrey	Mole Valley	520	87.61	5.94	2.01	3,824	47.30	**7.35**	**0.09**
East of England	Norfolk	Norwich	516	143.12	3.61	12.74	3,832	88.10	**7.42**	**0.17**
Scotland	Scotland	Midlothian	513	94.68	5.42	1.45	1,680	33.70	**3.27**	**0.07**
Scotland	Scotland	Clackmannanshi	512	51.54	9.93	3.12	1,108	14.80	**2.16**	**0.03**
South East	Surrey	Waverley	511	128.88	3.97	1.48	3,400	54.20	**6.65**	**0.11**
South East	Kent	Folkestone and I	506	110.06	4.60	1.39	2,220	40.60	**4.38**	**0.08**
South West	Gloucestershire	Gloucester	504	132.54	3.80	12.35	3,191	66.50	**6.33**	**0.13**
South East	Kent	Dover	500	116.60	4.29	1.56	2,181	37.00	**4.36**	**0.07**
North West	Blackpool	Blackpool	500	140.95	3.55	11.59	2,441	65.20	**4.88**	**0.13**
East Midlands	Derbyshire	Chesterfield	499	103.67	4.81	7.56	2,582	51.80	**5.18**	**0.10**
North East	South Tyneside	South Tyneside	494	147.92	3.34	7.36	1,823	41.70	**3.69**	**0.08**
South West	Devon	Exeter	491	129.31	3.80	10.25	5,155	97.00	**10.50**	**0.20**
South East	Kent	Tunbridge Wells	480	115.68	4.15	1.45	3,356	52.60	**7.00**	**0.11**
East of England	Suffolk	Ipswich	477	139.61	3.41	11.83	4,107	73.20	**8.61**	**0.15**
South East	Hampshire	Fareham	474	114.99	4.12	6.08	3,040	49.10	**6.42**	**0.10**
South East	East Sussex	Rother	473	93.43	5.06	0.91	1,394	28.60	**2.95**	**0.06**
East Midlands	Nottinghamshire	Gedling	469	117.30	4.00	3.91	1,575	34.50	**3.36**	**0.07**
South East	Hampshire	Hart	467	100.29	4.66	2.17	2,965	36.50	**6.34**	**0.08**
North West	Lancashire	Pendle	467	95.79	4.87	2.76	1,685	31.50	**3.61**	**0.07**
Scotland	Scotland	East Dunbartons	465	108.90	4.27	2.66	1,323	26.50	**2.85**	**0.06**
East of England	Essex	Harlow	461	93.37	4.94	15.10	2,042	42.30	**4.43**	**0.09**
North West	Lancashire	Rossendale	461	71.01	6.49	3.34	982	20.80	**2.13**	**0.05**
South East	Kent	Gravesham	446	106.84	4.18	4.25	1,808	34.40	**4.05**	**0.08**
North West	Lancashire	Hyndburn	443	82.26	5.39	6.07	1,375	29.30	**3.10**	**0.07**
East Midlands	Leicestershire	Melton	441	51.77	8.52	0.92	1,248	22.40	**2.83**	**0.05**
South West	Torbay	Torbay	438	139.45	3.14	3.67	1,844	50.50	**4.21**	**0.12**
West Midlands	Worcestershire	Wyre Forest	437	101.79	4.29	2.23	1,407	35.20	**3.22**	**0.08**
Wales	Wales	Torfaen	436	92.45	4.72	3.46	1,629	36.40	**3.73**	**0.08**
South East	Bracknell Forest	Bracknell Forest	436	125.17	3.48	3.98	4,604	58.60	**10.57**	**0.13**
North West	Lancashire	Burnley	434	94.72	4.59	3.92	1,909	39.60	**4.39**	**0.09**
South East	Surrey	Spelthorne	434	103.00	4.22	8.49	3,501	40.40	**8.06**	**0.09**
South East	East Sussex	Lewes	425	100.19	4.25	1.44	1,852	34.70	**4.35**	**0.08**
Scotland	Scotland	East Renfrewshi	421	96.58	4.36	2.42	1,019	21.90	**2.42**	**0.05**
South West	Gloucestershire	Cheltenham	415	118.87	3.49	8.91	3,353	64.80	**8.08**	**0.16**
East of England	Hertfordshire	Watford	412	102.45	4.02	19.22	4,360	68.50	**10.59**	**0.17**
East Midlands	Nottinghamshire	Mansfield	409	110.60	3.70	5.33	1,659	44.80	**4.05**	**0.11**
East of England	Norfolk	Great Yarmouth	409	100.15	4.08	2.24	1,715	38.40	**4.20**	**0.09**
South East	Hampshire	Havant	401	124.47	3.22	5.08	2,508	42.30	**6.26**	**0.11**
South East	Surrey	Woking	396	103.89	3.81	6.22	3,062	46.90	**7.74**	**0.12**
Scotland	Scotland	West Dunbarton	390	87.79	4.44	2.13	1,692	32.90	**4.34**	**0.08**
East Midlands	Lincolnshire	Boston	387	70.80	5.47	0.97	1,316	30.80	**3.40**	**0.08**
East of England	Hertfordshire	Stevenage	377	89.32	4.22	14.51	2,667	52.30	**7.08**	**0.14**
West Midlands	Worcestershire	Worcester	376	103.62	3.63	11.30	3,036	55.50	**8.07**	**0.15**
Scotland	Scotland	Orkney Islands	373	22.54	16.54	0.34	529	11.10	**1.42**	**0.03**
South East	Hampshire	Rushmoor	367	100.07	3.67	9.41	5,895	60.00	**16.05**	**0.16**
West Midlands	Staffordshire	Cannock Chase	364	100.59	3.62	4.62	1,998	41.60	**5.49**	**0.11**
North West	Cumbria	Copeland	364	67.18	5.42	0.47	1,539	32.00	**4.23**	**0.09**
Wales	Wales	Blaenau Gwent	363	66.99	5.42	3.34	927	22.90	**2.55**	**0.06**
East of England	Hertfordshire	Broxbourne	362	99.14	3.65	7.04	2,218	35.90	**6.12**	**0.10**
West Midlands	Worcestershire	Redditch	358	87.00	4.11	6.60	1,936	38.20	**5.41**	**0.11**

East Midlands	Lincolnshire	Lincoln	353	102.33	3.45	9.89	2,622	58.20	**7.43**	**0.16**
East of England	Essex	Maldon	341	66.63	5.12	0.80	1,111	21.40	**3.26**	**0.06**
Scotland	Scotland	Inverclyde	340	76.70	4.43	1.96	993	25.50	**2.92**	**0.08**
East of England	Essex	Rochford	333	86.19	3.86	1.27	1,364	23.50	**4.10**	**0.07**
East of England	Essex	Castle Point	328	89.71	3.66	5.16	1,036	22.20	**3.15**	**0.07**
South East	West Sussex	Worthing	309	111.66	2.77	9.16	4,097	48.10	**13.24**	**0.16**
South East	East Sussex	Eastbourne	295	101.59	2.90	6.50	1,868	39.50	**6.34**	**0.13**
Wales	Wales	Merthyr Tydfil	275	58.87	4.67	2.45	989	21.80	**3.60**	**0.08**
West Midlands	Staffordshire	Tamworth	269	78.84	3.41	8.71	1,640	29.20	**6.10**	**0.11**
Scotland	Scotland	Argyll and Bute	257	86.22	2.98	0.04	2,017	37.90	**7.86**	**0.15**
South East	East Sussex	Hastings	251	90.96	2.76	8.14	1,521	32.30	**6.07**	**0.13**
South East	Surrey	Epsom and Ewe	240	81.00	2.97	7.05	1,659	31.30	**6.90**	**0.13**
South East	West Sussex	Adur	220	64.63	3.40	5.03	1,126	21.50	**5.13**	**0.10**
South East	Hampshire	Gosport	213	82.18	2.59	7.71	1,067	19.50	**5.01**	**0.09**
East Midlands	Leicestershire	Oadby and Wigs	207	57.75	3.59	8.81	813	19.10	**3.92**	**0.09**
South West	Isles of Scilly	Isles of Scilly	6	2.27	2.50	0.25	55	1.40	**9.67**	**0.25**

[1] 2005 to 2021 UK local and regional greenhouse gas emissions: statistical release (updated 6 July 2023), at https://assets.publishing.service.gov.uk/media/64a67cc37a4c230013bba230/2005-21-local-authority-ghg-emissions-statistical-release-update-060723.pdf,

[2] Regional gross value added (balanced) by industry: local authorities by ITL1 region:, chained volume measures in 2019 money value, pounds million at Regional gross value added (balanced) by industry: local authorities by ITL1 region - Office for National Statistics (ons.gov.uk)

[3] Business Register and Employment Survey, Table 6, Local authority district – Business Register and Employment Survey (BRES): Table 6 - Office for National Statistics (ons.gov.uk)

Appendix B – Viability Representation on the emerging Westminster Retrofit Policy

Viability Representations on the emerging Westminster Retrofit Policy

Westminster Property Association

Date: 25 April 2024

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1 Introduction

1.1 Within this Appendix, we review the Viability Review document produced by BNPPRE with particular focus on their adopted viability assumptions. Within this section we present our critique of the respective assumptions adopted by BNPPRE.

1.2 Whilst we have reviewed BNPPRE's document in full, we comment only on various aspects of it owing to the lack of transparency in methodology, together with the level of information provided. Where we do not comment upon specific parts, this is not to be interpreted as either an agreement or disagreement with the contents or conclusions arrived at.

2 Methodology Transparency and Data Transparency

2.1 The NPPF (paragraph 58) states that 'all viability assessments, including any undertaken at the plan-making stage, should reflect the recommended approach in national planning guidance, including standardised inputs, and should be made publicly available.'

2.2 A significant drawback of BNPPRE's viability approach is that the modelling used to assess residual land value is not provided. It is therefore not possible to properly assess the outputs and determine if the soundness of the methodology. This lack of transparency is a significant failing of the viability evidence base.

2.3 Generally, there is a lack of data transparency regarding various appraisal assumptions, including, but not limited to, rents, yields, construction costs, and finance rate. This directly conflicts with RICS professional standards outlined in 'Financial viability in planning: conduct and reporting' (1st edition, May 2019).

2.4 Naturally, given the geographical size of the City of Westminster, together with the quantum of various asset classes which comprise its various submarkets, a significant amount of rental and yield evidence would naturally need to be assembled in order to draw reasonable conclusions from for the purposes of the appraisal assumptions.

3 Gross Development Value

Yields for Commercial Development

3.1 Yield assumptions are provided for commercial uses in Prime, Core and Fringe areas. Overall, we consider this to be a crude generalisation and grouping of the diverse range of sub-markets which comprise the City of Westminster. Overall, these assumptions are too keen and there is minimal supporting evidence to underpin these assumptions. We are also concerned that the geographical definitions of the three specified areas i.e. Prime, Core and Fringe in the BNPREE report are wider in the case of Prime and Core value benchmarks used to inform the market evidence base.

3.2 For example, the adopted Prime and Core Yield of 3.75% for offices is not supported by evidence. BNPPRE state that these assumptions are informed by Knight Frank's 'Prime Yield Guide' (December 2023). However, upon review of this document, we note that West End Prime Core (which refers specifically to Mayfair & St James's) offices yields are stated as 4.00%, with yields of 3.75% last reported in December 2022. Further, we note within BNPPRE's Q4 2023 Central London Offices Update that they consider Central London Prime Yields for the West End to be between 4.00% – 4.25%.

3.3 We have had regard to the same Knight Frank's Yield Guide (December 2023 and March 2024), which presents West End Prime Core office yields as stable at 4.00% which we outline in Table 1 below.

Table 1: Knight Frank Yield Guide – December 2023 and March 2024

Use	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
West End: Prime Core (Mayfair & St James's)	4.00%	4.00%	4.00%	4.00%	4.00%
West End: Non-Core	4.75%	4.75%	4.75%	4.75%	4.75%

3.4 We provide in the table below examples of key market research regarding current West End office yields.

Table 2: Reported Office Yields Data

Submarket	Savills (Feb 2024)	Cushman & Wakefield (March 2024)	JLL (Jan 2024)	Colliers (Jan 2024)	BNPPRE Paribas (Feb 2024)
West End	4.00%	4.00%	4.00%	4.25%	4.00 – 4.25%

3.5 The yields adopted by BNPPRE are therefore inappropriate and not in line with RICS guidance as the conclusions drawn are not soundly supported by the evidence base. It is clear in the case of yields that the market evidence has not been appropriately analysed or adjusted and therefore falls to apply relevant RICS guidance. Therefore, this serves to overstate any reported viability outcomes.

3.6 We also consider the retail yields adopted by BNPPRE to be too keen for the purposes of an area wide study. The adoption of a 3.00% yield across the whole area defined as Prime, which incorporates areas such as Belgravia and St John's Wood, is wholly inappropriate. Only the most central area, including Bond Street, a small portion of this area, would have the prospect of achieving this yield.

3.7 Oxford Street, as reported by Knight Frank, reflects a yield of 4.50%. Applying this yield to the Core area, which includes Westbourne Grove, Paddington, Bayswater, and Victoria, is again wholly inappropriate. A 5.00% yield has been applied to the Fringe area which we would not expect to be achievable and consider entirely unsuitable.

3.8 The whole approach on retail yields will have generated significantly higher values than what we would realistically anticipate for this element of the respective tested appraisals. This calls into question the evidence base.

3.9 The Topic Paper prepared as part of the Local Plan evidence base identifies that current barriers to retrofit include viability and the ability to secure investment, industry perceptions on retrofitted commercial environments and future rental yields or sale of assets. Overall, the yields adopted by BNPPRE are considerably keener than can be justified by the evidence, especially if these are to be intended as representative of retrofitted stock.

Rental Incentives

3.10 BNPPRE adopt a 12-month rent free period and apply this to all commercial floorspace. We consider this assumption to be insufficient and this does not adequately represent the diverse range of asset classes and their respective incentives found within the City of Westminster. BNPPRE do not state their lease assumptions to which this 12-month rent free period is applied. On the basis of a 10-year standard lease assumption, our view is that rent free periods between 18 to 24 months would be more appropriate.

3.11 We outline in the table below our expectation of typical rent-free incentives for Grade A office space on the basis of a 10-year lease assumption, for each submarket within the City of Westminster.

Table 3: Prime, Core, and Fringe Location Incentives

Submarket	Typical Rent-Free Period (months)
Paddington	24
Marylebone	21-24
Mayfair	21
St James's	21
Knightsbridge	21-24
Victoria	21-24
Soho	21-24
Fitzrovia	21-24
Covent Garden	24

Commercial Letting Voids

3.12 Typically, commercial lettings would be subject to letting voids after completion, void periods can vary as office developments are frequently let to multiple tenants. This is not considered by BNPPRE within their appraisal assumptions which is a significant omission. This overstates the viability of all commercial case studies and presents unreliable results.

3.13 Depending on the asset class and submarket in question, we would anticipate letting voids of an average between 12 to 18 months, reflecting that some space will be pre-let while other space will have longer letting voids.

4 Construction Costs

4.1 BNPPRE adopt build costs sourced from the Building Cost Information Service (BCIS), stating that base costs have been adjusted for local circumstances by reference to BCIS multiplier for Westminster and to Q4 2023. Further, they state base costs have been adjusted by 10% to account for external works which includes car spaces.

4.2 There is lack of transparency with how this construction cost has been determined. For example, offices are stated to be £3,124 per square metre, with this figure then subject to a 10% externals allowance. However, regarding the base cost of £3,124 per square metre, it is not stated if this is an average of all costs from the respective data set, or if, for example, the Upper Quartile or the Lower Quartile has been adopted. As such, we are unable to determine what cost has been selected and are therefore unable to properly determine if this is appropriate.

4.3 In arriving at its costs, BCIS, as a default, will collate data from the last 15 years. When analysing this data sample, rebasing for City of Westminster, Q1 2024, and having reference to the 'Generally' category, only two schemes are captured within the last five years. This highlights the extremely limited nature of costs presented by BCIS for this location and demonstrates how these are not reflective of current construction costs. We note these two sets of data present an average of £3,319 per square metre, £195 per square metre above those costs adopted by BNPPRE. In any event, the costs adopted by BNPPRE significantly overstate the viability position within their tested appraisals. As such, the conclusions arrived at are misinformed and not appropriate for the basis of an area wide study.

4.4 BNPPRE state that BCIS accounts for an 'average' level of costs for abnormal ground conditions and that some other abnormal costs are already reflected in BCIS data. This is not the case. There are several significant costs that BCIS does not account for with these including, but not limited to, decontamination & eradication of invasive plants, minor or major demolition works, temporary diversion works, or specialist ground works. We provide in the table below a breakdown of developmental cost elements not captured by BCIS data:

Table 4: Excluded Cost Elements from BCIS Data

Element		Excluded
Facilitating works	Decontamination & eradication of invasive plants	X
	Major demolition works	X
	Temporary support to structures	X
	Specialist ground works	X
	Temporary diversion works	X
	Extraordinary site investigation works	X
Prefabricated buildings and building units	Prefabricated buildings and building units	X
Works to existing building	Minor demolition & alteration works	X
	Repairs to existing services	X
	Damp proof courses etc.	X
	Façade retention	X
	Cleaning existing surfaces	X
	Renovation works	X
External works	Site preparation works	X
	Roads, paths, paving and surfacing	X
	Soft landscaping, planting, and irrigation systems	X
	Fencing, railings, and walls	X
	External features	X
	External drainage	X
	External services	X
	Minor building works and ancillary buildings	X
Project/design team fees	Consultant's fees	X
	Main contractor's pre-construction costs	X
	Main contractor's design fees	X
Other development/project costs	Other development/project costs	X
Risk (client's contingencies)	Risk (client's contingencies)	X

Source: BCIS

4.5 These excluded costs are of high significance and highlight the weakness of drawing conclusions from BCIS data for the purposes of an area-wide study, particularly within the City of Westminster, where premium office values will require a standard of space which is market leading, the actual realistic cost position will be significantly higher than what is reported by BCIS.

4.6 Moreover, the constrained nature of development sites typically found within the City of Westminster will naturally be exposed to these 'excluded costs', including but not limited to temporary support to structures, diversion works, potential façade retention, and minor or major demolition. As such, the adoption of BCIS costs is inappropriate as it falls to include key development costs which serves to significantly overstate the resulting viability position.

4.7 As such, BCIS costs provide a diluted view of construction costs, often failing to account for several significant development costs. As such, this will serve to significantly overstate the viability position within the tested appraisals. In any event, the BCIS costs adopted by BNPPRE are low and are reflective of costs associated with lower quality schemes. As such, this cost does not appropriately account for the quality of product delivered within Westminster and is therefore not representative.

4.8 Arcadis state in their International Construction Costs (2024) report that London has now become the most expensive city in the world for construction costs. This is owing to specification enhancements related to building safety, sustainability and client expectations which has pushed prices up further than most cities. Naturally, given that BCIS is backward looking, its data does not reflect these rising cost trends. This serves to overstate the resulting viability position by presenting a diluted picture of costs.

4.9 When looking at Westminster, many investors that have the means to do so will also be considering investment in other global real estate markets. Therefore, it is paramount to present a correct viability picture and appropriately account for costs.

Net zero carbon (operational) and embodied carbon

4.10 BNPPRE state that the cost of achieving zero embodied carbon above base build costs is an area of debate. They comment that WSP have advised this can be achieved within a cost "uplift of -1% (minimum policy requirement) to 7% (maximum policy requirement) for offices".

4.11 The WSP report states a Baseline Total Building Cost for offices of £3,500 per square metre. From this, BNPPRE state, for the purposes of their appraisals, they have assumed that the cost of achieving net zero regulated energy combined and low embodied carbon is 7% for all uses and this highest possible figure 'stress tests' the policy. BNPPRE comment that it is likely that the actual impact on viability will be lower than indicated in their appraisal outputs.

4.12 On top of the BCIS rate applied, BNPPRE have also included a 10% externals rate. WSP reference the inclusion of externals, however, do not state the allowance made for this. In the below chart we have included the externals rate proposed by BNPPRE, on top of the £3,124 per square metre.

4.13 This indicates an inconsistency between the build costs used and that this 7% stress test has not been adequately tested.

4.14 For example, a 7% uplift on a base cost of £3,500 is an extra £245 per square metre, totalling £3,745. However, applying this to a base of £3,436 per square metre is an extra £241 per square metre, totalling £3,676 per square metre. In any event, the figure of £3,436 per square metre presents an artificial starting point which overstates the viability from a base position. By stress testing this artificial base, the result suggests a figure which is not reflective of reality. As such, this assumption is inaccurate.

4.15 Moreover, the topic paper states "the viability report used the estimated build costs from the Embodied Carbon Evidence Base report". However, this is not the case as it appears BNPPRE have adopted BCIS costs which have then been adjusted by a 10% externals allowance. It is therefore incorrect for the topic paper to state that BNPPRE's viability report is a 'stress test' of the draft policy on the basis of using the costs from the Embodied Carbon Evidence Base report. This stress test has been done using BCIS costs, not those stated within the Embodied Carbon Evidence Base report. Therefore, BNPPRE have not stress tested the draft policy and the resulting opinions of viability are misinformed.

5 Development Finance Costs

5.1 BNPPRE have adopted a flat rate of 6.75% across all their appraisals, stating that this is inclusive of arrangement and exit fees and reflective of funding conditions over the plan period. However, no evidence is provided to support this assumption.

5.2 This figure does not reflect market assumptions regarding development finance and serves to overstate the viability position within each tested scheme. In any case, this rate is low, both from a current day and looking forward perspective.

5.3 We note that BNPPRE state within their recent Economic & Real Estate Outlook (January 2024) that 'development finance costs remain in excess of 7% even for fully pre-let developments'. This directly conflicts with their adopted development finance rate of 6.75% and further states that this rate is inappropriate.

5.4 There is plenty of evidence in the market with various schemes ongoing or recently completed. In addition, there is the Bayes Business School Commercial Real Estate Lending Report mid-Year 2023 study, which is an industry benchmark. Financing of development should reflect practice in that it is often multi-layered being a combination of junior, senior, mezzanine debt, as well as equity finance.

5.5 The finance rate applied in appraisals represents a total cost of capital in financing the Scheme. The rate adopted represents the combined cost of both debt and equity financing. When broken down, the debt element of the cost of finance includes a margin and risk premium above a 5-year swap rate. The Bayes Business School Commercial Real Estate Lending Report mid-Year 2023 study reports margins development lending margins ranging from 436bps (for pre-let commercial development) to 530bps (for residential development).

5.6 Given that senior debt is generally offered at 50% to 90% of cost of development projects, the remainder of project financing will, in most cases, be comprised of equity and in some cases varying levels of junior debt, mezzanine debt. Arrangement fees range from 100bps to 150bps upfront, with another 100bps to 200 bps exit fee.

5.7 Five year SONIA swap rates remain above 4% as at 23rd April 2024, having peaked in excess of 5.25% in July 2023. Considering the market uncertainty and combined with reported development finance margins of 436bps to 530bps according to the latest Bayes report, a more appropriate level for area-wide testing is therefore in excess of 8.00% on all costs.

5.8 We understand only a minority of lenders are active in, or targeting, development lending. With this, we would anticipate development finance rates for deep retrofit projects to reflect higher pricing, given these projects are often underpinned by a higher degree of complexity and risk. We would therefore anticipate this complexity and risk to be reflected in the respective finance rate.

5.9 The finance rate we have adopted of 8.00% here is therefore conservative and is subject to a higher degree of uncertainty than usual and therefore we recommend that this is kept under review. We also reserve the right to revise this figure should more evidence come to light.

6 Appraisal Analysis

6.1 We have assessed the various inputs proposed by BNPPRE in their report, many of these are industry standard inputs and are non-controversial. We do, however, query the appropriateness of some of the inputs applied or the clarity of the information provided to support them. We have for ease analysed the office led typology appraisals to demonstrate these queries although our comments are not limited to just this use class. These are set out in Table 5 below.

Table 5: Appraisal input differences

Inputs	BNPPRE	WPA
Gross Development Value		
Office Prime Core Yield	3.75%	*4.00%*
Office Non-Core Yield	3.75%	*4.75% (Knight Frank March 2024)*
Rent Free	12 months	18 - 24 months
Build Costs		
Estimated build cost psf	£3,124 per sqm Unknown BCIS type, age, and decile	£3,519 per sqm (BCIS Offices Generally Upper Quartile Q2 2024 - rebased to Westminster)
Demolition	Not included	Allowance should be included
Additional costs (e.g. RoL)	Not included	Allowance should be included
Standard Cost Assumptions		
Purchasers Costs	Not included	6.80%
Letting Agents & Legal Fee	Not included	15%
Finance	6.75%	8.00%
Letting Void	4 months	12 months

6.2 The BCIS costs are a key area of concern, BNPPRE have not stated the necessary source information such as build type or quartile. As such we have provided the most up to date BCIS costs for offices rebased to Westminster and collated from the Upper Quartile of the BCIS data, this equates to £3,519 per sqm whereas BNPPRE have provided an average office BCIS rate of £3,124 per sqm. This reduced BCIS rate applied by BNPPRE could result in a typology demonstrating a viable outcome where in reality the site faces a higher viability hurdle.

6.3 BNPPRE have not included demolition costs, nor is there clear definition of whether the typology scheme is considered a refurbishment, retrofit or rebuild. This would also impact upon the BCIS rate applied to the typology.

6.4 BNPPRE have not included a wide range of additional costs anticipated in an area like Westminster such as facilitating works, party wall issues, rights of light, site investigation works, archaeology studies, and cleaning of existing surfaces, stating that some of these will be included within the BCIS rate applied. Given the significantly decreased BCIS rate applied and the exclusion of this multitude of costs from the BCIS data sample, we would consider it prudent to include some level of cost for these costs.

6.5 BNPPRE have not included purchaser's costs or letting agents' fees in their analysis of typology 78. These are significant costs and we would typically expect to see these reflected in Local Plan Viability Assessments.

7 Benchmark Land Value - Existing Use Value (EUV)

7.1 We have been unable to determine how the Existing Use Value (EUV) and subsequent BLV have been calculated by BNPPRE. Our calculation of the typology EUV has been undertaken using a standard term and reversion calculation. Given the information provided within the BNPPRE report, we have been unable to establish the BNPPRE assessment of EUV for any of the typology assessments. It is clear from our assessment of Typology 78 set out in Table 6 that as our EUV is higher than the BNPPRE BLV (which is inclusive of premium) there is a discord between the base information required to undertake the EUV assessment or the methodology applied.

7.2 We have undertaken a sample analysis of Typology Proxy Number 78, a BLV of £32.2m is reported within the BNPPRE report. To test how this BLV has been concluded, we have replicated the inputs outlined within BNPPRE's report.

7.3 We outline below the inputs we have adopted as provided within the BPPRE report and the resulting EUV and BLV figures.

Table 6: BNPPRE and WPA EUV Calculation Inputs

Inputs	BNPPRE	WPA
Typology	Typology 78	Typology 78
GIA sqm (sqft)	5,500 (53,820)	5,500 (53,820)
NIA sqm (sqft)	3,750 (40,365)	3,750 (40,365)
Rent (£psf)	£52	£52
Rent per Annum	Unknown	£2,062,500
Yield	5.5%	5.50%
Rent Free	Unknown	12 months
Purchasers Costs	Unknown	6.80%
EUV	**Unknown**	**£33.1m**
Premium (20%)	20%	20%
BLV	**£32.2m**	**£39.8m**

7.4 The result of the above process produces an EUV of £33.1m based on our updated assumptions. Applying a 20% premium to this figure results in a BLV of £39.8m. It is unclear how our analysis has resulted in a differing BLV to the BNPPRE BLV analysis for Typology 78 of £32.2m as we have adopted the same inputs as provided within the BNPPRE report.

7.5 As such, we are unable to properly determine how BNPPRE have reached their opinion regarding the EUV and subsequently their BLV. Without thoroughly understanding how these figures have been arrived at, we are unable to appropriately comment on their suitability. In any event, based on our

replication of BNPPRE's approach, our resulting indicative BLV is significantly higher which suggests BNPPRE's BLV overstates the viability position by adopting a lower benchmark.

7.6 We also note that Table 5.39.1 in the BNPPRE report contains different typology BLV's to those contained in the Appendix 2 appraisal results table. There is no clear reasoning for why this is the case.

Benchmark Land Value - Existing Use Value plus Premium

7.7 The NPG indicates that a premium should provide reasonable incentive for a landowner to bring forward land for development. This will be an iterative process informed by professional judgement and must be based upon best available evidence. Market evidence can include Benchmark Land Values from other viability assessments whilst land transactions can be used as a cross check to other evidence.

7.8 BNPPRE adopt a blanket 20% premium across all of their viability tests. There is no supporting evidence for this figure which conflicts with overarching policy guidance and RICS guidance.

7.9 There is no reference within the appraisal assumptions to the consideration of Alternative Use Value (AUV) as a method of determining the BLV. This is a significant omission in the context of the varied urban land use characteristics within the City of Westminster, where the AUV of land may be informative in establishing BLV.

Sensitivity Analysis

7.10 BNPPRE's sensitivity analysis is limited solely to a single scenario, testing the impact of growth in sales values/capital values of 10% and cost inflation of 5%. No downside viability testing has been undertaken. This is a major failing of the analysis given the current high level of uncertainty on market inputs including finance rates.

7.11 This only tests the results of one relationship and fails to proportionally demonstrate other potential scenarios. For example, we are unable to determine the outcome of costs increasing 5% and sales / capital values remaining static and the resultant impact this has on the Residual Land Value and subsequent viability position.

8 Monitoring of Proposed Retrofit Policy and Key Performance Indicators

8.1 The Retrofit-first Topic Paper correctly identifies that the proposed draft policy has relatively far-reaching implications and its intention to change the pattern of development will require careful monitoring of the impacts of any policy adopted.

8.2 However, given the significant viability concerns, the recommendation to trigger a review of the policy based on "two consecutive years of reduced job delivery or reduction in overall jobs" is woefully inadequate. This could effectively result in reduced job delivery or a reduction in overall jobs throughout the Plan period without this occurring in consecutive years. We consider as a minimum a review should be triggered should in any single year there be reduced job delivery or a reduction in overall jobs.

8.3 We consider a more effective Key Performance Indicator would be for a review trigger to be adopted that tests a minimum uplift for job delivery over two consecutive years not been achieved. This would ensure that over the Plan period job creation is not compromised. It is essential that the objectives of the Plan review on embodied carbon does not stymie or reverse economic growth and job delivery across the city. Based on the current proposed policy drafting, viability evidence and Key Performance Indicator proposed we consider this is a significant risk.

9 Conclusion

9.1 The RICS professional standard 'Financial viability in planning: conduct and reporting' (1st edition, May 2019) clearly states "the assessment of viability must be carried out having proper regard to all material facts and circumstances, whether for area-wide or scheme-specific assessments." However, there are multiple incorrect inputs that have been used in the viability assessment, which do not reflect the current position and are painting an inaccurate picture. The Planning Practice Guidance (PPG) on Viability states that assumptions concerning costs and values must be both realistic and broadly accurate.

9.2 From our analysis of the inputs provided by BNPPRE, it becomes clear that the following categories do not meet these criteria: Yields, Commercial Letting Voids, Rent-free periods, Construction costs, and Development Finance costs. We are also concerned that there is a mis-match between the geographical definitions in the BNPREE report and the market data that informs them. Areas that the

market would consider ‘Core’ are being valued as ‘Prime’ and ‘Fringe’ areas are being included as ‘Core’, which skews the viability position.

9.3 For many other assumptions, including Benchmark Land Value, the data is not transparent and utilises a black-box methodology. The Council state in the topic paper ‘Retrofit first and reducing embodied carbon’ it is satisfied that the draft policy will not unduly impact development viability in the City. The explanation used to indicate viability is not of concern, which relates to cost sensitivity (para 2 on page 66 of the Topic Paper) is fundamentally flawed. The additional explanation that many of the sites that are unviable “were already unviable” is not a rationale for moving forward with a policy that will compromise Plan deliverability.

9.4 The viability approach adopted falls short on transparency and evidential integrity. Our review of the viability evidence presented demonstrates that an office retrofit within the core area could be unviable and this is likely to depend on site-specific factors.

9.5 In non-core and fringe areas our initial analysis indicates a higher proportion of sites are likely to be unviable than indicated in the BNPPRE assessment. We do not consider a sufficient proportion of schemes are viable to result in a deliverable Plan. We consider it is likely to result in stranded assets across the City of Westminster. Rather than the intended aim of accelerating the upgrading of commercial buildings to meet modern standards, the proposed policy wording jeopardises both the prospective delivery of commercial floorspace and the necessary growth in jobs.

9.6 In light of the significant viability concerns stated above, it is crucial to undertake effective monitoring to ensure job creation is not compromised. This requires a rethink of the appropriate Key Performance Indicator given the potential far reaching implications of the proposed policy change and the need to balance other Plan requirements.

Appendix C – ARUP Embodied and Whole Life Carbon Database

General info

This spreadsheet compiles WLCA data from several London based developments to compare the carbon emissions of different classes of retrofits and extensions with new builds.

The workbook includes a number of data points for different projects based. The data is typically sourced from Greater London Authority (GLA) required WLCA spreadsheets included in planning applications. Some data are sourced from Arup internal data when we have been responsible for life cycle data reporting. Raw data for each development is shown as a breakdown in a separate spreadsheet on the SharePoint. Relevant files which are data sources are included in SharePoint folders for each development.

The data is then summarised in different worksheets, all linked to the "Background Information" sheet via

Adding new projects

To add a new project, populate a new row at the bottom of the table in "Background Information". Then add the site name to the breakdown sheets: A-C; A1-A5; and building element data. The background information will automatically populate as a reference to the "Background Information" worksheet. Refresh the data in Power BI to update graphs and charts.

Also, populate a new row in the "Data Availability Status" worksheet. This informs what level of data is available from the planning application or other data source and enables future users to interpret any results.

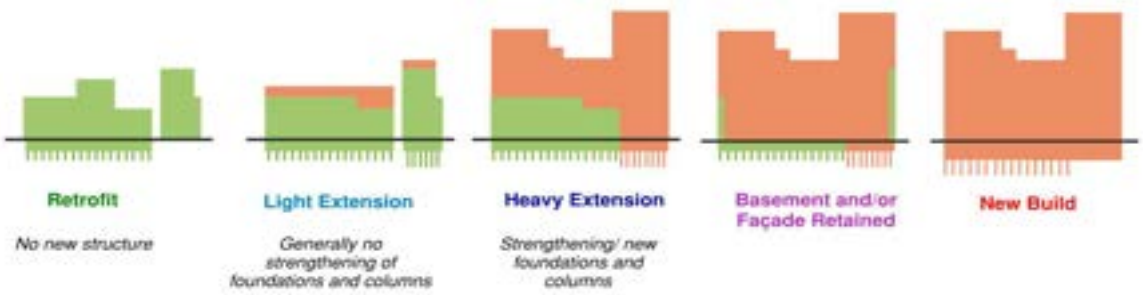
It is recommended that the "Raw WLCA Data Breakdown" workbook is used for calculating values for input in

Building Classification		

By approach to existing structure

Classification

Retrofit
Light Refurbishment
Heavy Refurbishment
Substructure and/or Façade Retained
New Build



Basement Retention

No new basement

No new basement
New and retained basement
New

Yes
No

Structural Frame

Reinforced Concrete
Steel
Masonry and steel
Brickwork and timber
None
Timber and steel
Timber

Retrofit elements

Improve state of structural condition
Improve operational efficiency
Enable change of use
Improve functionality
Enable additional area

Stability System

RC Cores / shear walls
Steel Cores
Bracing
Cores and bracing
Moment frame
None

Loading treatment

Minimal intervention - New loads less than or equal to existing loads

Horizontal extension		Infills are supported on new foundations
Load balancing at all levels	-	New loads less than or equal to existing capacity of all structural elements, no strengthening required.
Load balancing at foundations	-	New loads less than or equal to existing capacity of the foundations, some strengthening may be required to the structure.
Capacity enhancement	-	Capacity is increased through reassessment and/or strengthening of both foundations and the main structure.

Fire protection interventions

Intumescent
Increased cover
Fire board
Repair fire protective spray
None required

Repair types

Localised / minimal concrete patching for cover reinstatement or damage
Widespread / major treatment for cover reinstatement or damage
Water ingress
FRP application

Column strengthening

FRP	Fibre reinforced polymer column wrapping
Concrete encasement	Steel or concrete columns encased in reinforced concrete
Steel encasement	Steel plate post-fixed to concrete columns
Steel section increase	Steel columns strengthened with additional steelwork
None	

Creating openings

RC slab overbreak and slab edge treatment
Steel trimming beams
None

Foundation strengthening

New piles
New piles and pile caps
New pad foundations
New piles, pile caps and steel transfer elements
New piles, pile caps and oncrete transfer elements
None required

Structural floorplate

Flat slab
Precast
PT Concrete
Steel and composite deck
Timber
Hollow pot floor

Building Typologies

Commercial & Residential
Office & Retail
Office
Retail
Residential (inc. student accomodation)
School
Data Centre
Hospital/Medical
Hotel
Industrial
Office, Retail & Residential

Project Name	Borough	Planning Ref	Date (of LCA if available)	WLCA report?	Building element breakdown?	Template spreadsheet?	Sharepoint folder?
1 Appold Street	City of London	22/01200/FULMAJ	05/12/2022	Yes	Partial	No	Yes
1 Exchange Square London	City of London	21/00930/FULMAJ	24/09/2020	Yes	Yes	Yes	Yes
1 Finsbury Avenue	City of London	17/00230/FULL	23/03/2017	No	Partial	No	No
1 Museum Street	Camden	2023/2510/P	27/06/2023	Yes	Yes	Yes	Yes
1 Southwark Bridge Road	Southwark	21/AP/0599	19/08/2021	Yes	Yes	Yes	Yes
1 Triton Square	Camden	2016/6069/P	03/11/2016	No	Partial	No	No
10 Spring Gardens	Westminster	21/02401/FULL	16/09/2020	Yes	Yes	Equivalent	Yes
100 And 108 Fetter Lane	City of London	21/00534/FULMAJ	19/08/2021	Yes	Yes	Yes	Yes
100 Grays Inn Road	Camden	2022/4259/P	29/09/2022	Yes	Yes	Yes	Yes
100 New Bridge Street	City of London	22/00748/FULMAJ	08/08/2022	Yes	Partial	No	Yes
101 Whitechapel High Street	Tower Hamlets	PA/20/02726/R	29/04/2021	Yes	Yes	Yes	Yes
115 - 123 Houndsditch	City of London	21/00622/FULEIA	08/07/2021	Yes	Partial	Equivalent	Yes
120 Fleet Street	City of London	21/00538/FULEIA	10/09/2021	Yes	Yes	Yes	Yes
14-21 Holborn Viaduct	City of London	21/00755/FULMAJ	02/09/2021	Yes	Yes	Yes	Yes
1-5 Lower Marsh	Lambeth	23/00357/FUL	26/04/2023	Yes	Yes	Yes	Yes
15 Minories, 57-60 & 62 Aldgate High Street And 1 Little Somerset Street	City of London	16/00406/FULMAJ	12/11/2021	Yes	Yes	Equivalent	Yes
15-17 Eldon Street	City of London	21/00282/FULMAJ	29/11/2021	Yes	Yes	Yes	Yes
166 High Holborn	Camden	2023/2510/P	14/06/2023	Yes	Yes	Yes	Yes
16A-18 West Central Street	Camden	2023/2510/P	15/06/2023	Yes	Yes	Yes	Yes
175 Bishopsgate/Exchange Square	City of London	21/00930/FULMAJ	24/09/2021	Yes	Yes	Yes	Yes
18 Blackfriars Road - Office Building	Southwark	23/AP/1854	23/06/2023	Yes	Yes	Yes	Yes
18 Blackfriars Road - Paris Building	Southwark	23/AP/1854	06/06/2023	Yes	Yes	Equivalent	Yes
18 Blackfriars Road - Stamford Building	Southwark	23/AP/1854	23/06/2023	Yes	Yes	Yes	Yes
181 Talgarth Road	Hammersmith & Fulham	2021/03561/FUL	13/12/2021	Yes	Yes	Yes	Yes
18-20 Savile Row	Westminster	22/03276/FULL	14/03/2024	Yes	Yes	Yes	Yes
19-35 Baker Street	Westminster	16/11376/FULL 19/06767/FULL	23/08/2019	Yes	Partial	No	Yes
19-35 Sylvan Grove	Southwark	23/AP/0582	02/03/2023	Yes	Partial	No	Yes
2 Aldermanbury Square	City of London	21/00116/FULMAJ	07/04/2022	Yes	Yes	Yes	Yes
2 Ruskin Square	Croydon	11/00631/P		No	Partial	No	Yes
2 Trafalgar Way	Tower Hamlets	20/01402/A2		No	No	No	No

20 Giltspur Street	City of London	22/00867/FULMAJ	11/08/2022	Yes	Yes	Yes	Yes
216-220 Blackfriars Road	Southwark	20/AP/3250	09/11/2020	No	No	No	Yes
2-3 Finsbury Avenue	City of London	20/00869/FULEIA		No	No	No	Yes
25 Mandela Way	Southwark	23/AP/0950	30/03/2023	Yes	Yes	Equivalent	Yes
257-283 Ilderton Road	Southwark	23/AP/1317	28/04/2023	Yes	Yes	Yes	Yes
26 To 46 Lisson Grove	Westminster	22/05145/FULL	04/07/2022	No	Yes	Yes	Yes
302-312 Stratford High Street	London Legacy Development Corporation	22/00098/FUL	16/06/2022	Yes	Yes	Yes	Yes
330 Grays Inn Road	Camden	2023/0904/P	28/02/2023	Yes	Yes	Equivalent	Yes
334-348 Oxford Street	Westminster	21/05110/FULL	25/06/2021	No	Yes	Yes	Yes
38-42 Southwark Bridge Road	Southwark	22/AP/4006	18/10/2022	Yes	Yes	Yes	Yes
38-70 Baker Street	Westminster	22/08200/FULL	24/11/2022	Yes	Yes	Yes	Yes
45 Hornsey Road	Islington	P2022/1943/FUL	28/04/2022	Yes	Yes	Equivalent	Yes
458 Oxford Street	Westminster	21/04502/FULL	04/06/2021	Yes	Partial	Equivalent	Yes
47-50 Mark Lane	City of London	22/01245/FULMAJ	09/12/2022	Yes	Yes	Yes	Yes
50 Fenchurch Street	City of London	19/01307/FULEIA	04/04/2023	Yes	Partial	Equivalent	Yes
50 Finsbury Square	Islington	P2020/1877/FUL	06/04/2022	Yes	Partial	Equivalent	Yes
55 Bishopsgate	City of London	22/00981/FULEIA	28/04/2022	Yes	Yes	Yes	Yes
55 Gracechurch Street	City of London	20/00671/FULEIA	06/01/2021	Yes	No	No	Yes
61 - 65 Holborn Viaduct London EC1A 2FD	City of London	21/00781/FULMAJ	06/09/2021	Yes	Yes	Yes	Yes
6-12 Verney Road	Southwark	23/AP/0948	30/03/2023	Yes	Yes	No	Yes
63 - 66 Coleman Street	City of London	21/00694/FULMAJ	30/07/2021	Yes	Yes	Equivalent	Yes
63 New Bond Street	Westminster	23/08027/FULL	15/11/2023	Yes	Yes	Yes	Yes
65 Gresham St	City of London	22/00848/FULMAJ	24/08/2022	Yes	Yes	Yes	Yes
7 Brannan Street							
7 Millbank	Westminster	21/01508/FULL	22/02/2021	Yes	Yes	Yes	Yes
70 Gracechurch Street	City of London	20/00671/FULEIA	01/10/2020	Yes	No	No	Yes
747-759 & 765-775 Old Kent Road							
76-78 Upper Ground	Lambeth	21/01142/FUL	23/03/2021	Yes	Partial	Yes	Yes
79-87 Westminster Bridge Road							
8 - 12 New Bridge Street	City of London	22/00622/FULMAJ	12/12/2022	Yes	Yes	Equivalent	Yes
8 Bishopsgate							

80 Charlotte Street Gallery							
80-85 Tottenham Court Road							
81-103 King's Road							
85 Gracechurch Street							
88 Grays Inn Road	Camden	2022/4259/P	29/09/2022	Yes	Yes	Yes	Yes
90 Whitfield							
9-10 and 11 Angel Court	City of London	22/00860/FULMAJ	01/08/2022	Yes	Yes	Yes	Yes
99 City Road							
Apollo Business Centre, 158 Trundley's Road							
Borough Triangle Site							
Boundary House 7 - 17 Jewry Street London EC3N 2EX	City of London	21/00826/FULMAJ	13/07/2022	Yes	Partial	Equivalent	Yes
British Library Extension	Camden	2022/1041/P	20/01/2023	Yes	Yes	Yes	Yes
Burgess Industrial Park Parkhouse Street							
Bury House - 31 Bury Street	City of London	20/00848/FULEIA	30/09/2020	Yes	Yes	Yes	Yes
Buspace Studios							
Canada Water Dockside Plot A1							
Canada Water Dockside Plot A2							
Castle & Fitzroy House 37 - 45 Paul Street							
Church street residential development London	Westminster	21/08160/COOUT	02/02/2023	Yes	Yes	Yes	Yes
Colechurch House							
Cripplegate House 1 Golden Lane	City of London	22/00202/FULMAJ	10/03/2022	Yes	Yes	Yes	Yes
Dyne House	Haringey	HGY/2023/0328	20/12/2022	Yes	Yes	Yes	Yes
Edward Rudolph House, 69-85 Margery Street							
Elephant And Castle Shopping Centre Site							
Evelina Children's Hospital							
Finsbury Dials Refurb 1							
Former Blackfriars Crown Court	Southwark	22/AP/1347	03/05/2022	Yes	Yes	Yes	Yes
Friars Close							
Friary Court 65 Crutched Friars	City of London	22/00882/FULMAJ	14/02/2023	Yes	Yes	Yes	Yes
Gillingham House	Westminster	23/01690/FULL	17/02/2023	Yes	Yes	Yes	Yes
Hyatt Place	Hillingdon	2385/APP/2022/2952	27/09/2022	Yes	Yes	Equivalent	Yes

IKEA Hammersmith							
Island Site Woolwich	Greenwich	22/3162/F	16/03/2023	Yes	Yes	Yes	Yes
ITV Vista							
Jubilee House	London Legacy Development Corporation	21/00483FUL	05/10/2021	Yes	No	No	Yes
JVC Business Park	Brent	22/1849	10/05/2022	Yes	Yes	Equivalent	Yes
Kensington Centre, 66 Hammersmith Road							
King's Place (Land at Harper Street/Borough High Street)							
Leconfield House	Westminster	23/02111/FULL	24/08/2023	Yes	Yes	Yes	Yes
Liverpool Street Station	City of London	23/00453/FULEIA	17/04/2023	Yes	Yes	Yes	Yes
Maclise Multi-Storey Car Park, Olympia							
New City Court							
Newcombe House							
Peterborough Court							
Plot H1 Elephant Park							
Portland House	Westminster	22/05428/FULL	29/07/2022	Yes	Partial	No	Yes
Post Building							
Poultry Market And General Market And The Annexe Buildings West Smithfield	City of London	19/01343/FULEIA	29/07/2022	Yes	Partial	Equivalent	Yes
Princes Court - 7 Prince's Street	City of London	22/00158/FULMAJ	24/02/2022	Yes	No	No	Yes
Red Lion Court 46-48 Park Street							
Royal Mint Court - Embassy House	Tower Hamlets	PA/21/01327/A1	27/05/2021	Yes	Partial	No	Yes
Royal Mint Court – Johnson Smirke Building	Tower Hamlets	PA/21/01327/A1	27/05/2021	Yes	Partial	No	Yes
Royal Mint Court - Seaman's Registry	Tower Hamlets	PA/21/01327/A1	27/05/2021	Yes	Partial	No	Yes
Royal Mint Court – Cultural Exchange	Tower Hamlets	PA/21/01327/A1	27/05/2021	Yes	Partial	No	Yes
Royal Street Plot C	Lambeth	22/01206/EIAFUL	21/03/2022	Yes	Partial	Equivalent	Yes
Royal Street Plot D	Lambeth	22/01206/EIAFUL	21/03/2022	Yes	Partial	Equivalent	Yes
Royal Street Plot E	Lambeth	22/01206/EIAFUL	21/03/2022	Yes	Partial	Equivalent	Yes
Salisbury Square - Commercial Building	City of London	20/00907/FULEIA	07/12/2020	Yes	Yes	Yes	Yes
Salisbury Square - Court Building	City of London	20/00907/FULEIA	07/12/2020	Yes	Yes	Yes	Yes
Shepherd's Bush Market							
Solomons Passage							
South Kensington Underground Station							

South Molton Triangle 40-46 Brook Street	Westminster	22/04610/FULL	04/07/2022	Yes	Yes	Yes	Yes
South Molton Triangle North Block	Westminster	22/04610/FULL	04/07/2022	Yes	Yes	Yes	Yes
South Molton Triangle Running Horse Pub	Westminster	22/04610/FULL	04/07/2022	Yes	Yes	Yes	Yes
South Molton Triangle SMS and Browns	Westminster	22/04610/FULL	04/07/2022	Yes	Yes	Yes	Yes
South Molton Triangle South Block	Westminster	22/04610/FULL	04/07/2022	Yes	Yes	Yes	Yes
St James's Market Phase 2							
Suthring House, 216-220 Blackfriars Road	Southwark	20/AP/3250	28/10/2020	Yes	No	No	Yes
Thavies Inn House - 3 - 4 Holborn Circus	City of London	21/00885/FULMAJ	27/08/2021	Yes	Yes	Yes	Yes
The London Television Centre	Lambeth	21/02668/EIAFUL					
The Rex (Option 1)	Kingston	21/02313/FUL	14/07/2021	Yes	No	No	Yes
The Yard Theatre	London Legacy Development Corporation	23/00283/FUL	14/07/2023	Yes	No	No	Yes
TVC Plot D	Hammersmith & Fulham	2016/04585/VAR	20/09/2021				
TVC Plot G1	Hammersmith & Fulham	2016/04585/VAR	10/01/2023				
Victoria House	Greenwich	23/2747/F	04/08/2023	Yes	Yes	Yes	Yes
Vine Lane	Camden	2023/2510/P	21/06/2023	Yes	Yes	Yes	Yes
Warnford Court	City of London	23/00145/FULMAJ	27/07/2023	Yes	Yes	Yes	Yes
Waterloo Hub Hotel development - 54 Kennington Road	Lambeth	21/02475/FUL	09/06/2021	Yes	Yes	Yes	Yes
Whitechapel Road Development, Plot B2	Tower Hamlets	PA/21/02707/A1	16/12/2021	Yes	Yes	Yes	Yes
Whitechapel Road Development, Plot B3	Tower Hamlets	PA/21/02707/A1	16/12/2021	Yes	Yes	Yes	Yes
Whitechapel Road Development, Plot C	Tower Hamlets	PA/21/02707/A1	16/12/2021	Yes	Yes	Yes	Yes
Whitechapel Road Development, Plot D1	Tower Hamlets	PA/21/02707/A1	16/12/2021	Yes	Yes	Yes	Yes

Site name	Assessment Type	A-C carbon e	Borough	Postcode	Planning reference	Data source	Description	Submission dat	Decision date	Final decisio	Building typolog	Change	Classification	Existing	Listed status	GIA exi	GIA new	GIA demo	% ir GIA adde	Basement retu	Existing str	New struct	Existing stal	New stabil	Loading t	Existing	New s	Above (	Added	Added	Fire ir	LCA author /	Structural	MEP Engineer	Architect	LCA Softwa	Project Ref	%demol	Class	Unique na
1 Appold Street	Assessment 1 - no	858	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building. Reter	12/12/2022		Pending	Office	Yes	Heavy Refurbishr	1980s	Not listed	28992	51869	12718	79%	35595	No new basen	Steel	Steel			10	16	14	6		Hilson Morar	AKT II	MTT	Piercy & Compan	One Click L	Project 1	44%	3	1 Appold StreetAssessment 1 - no decarbonisation
1 Appold Street	Assessment 2 - decarbonisation	1026	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building. Reter	12/12/2022		Pending	Office	Yes	Heavy Refurbishr	1980s	Not listed	28992	51869	12718	79%	35595	No new basen	Steel	Steel			10	16	14	6		Hilson Morar	AKT II	MTT	Piercy & Compan	One Click L	Project 1	44%	3	1 Appold StreetAssessment 2 - decarbonisation
1 Exchange Square Lond	Assessment 1 - no	2324	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurbishm	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishr	1990s	Not listed	49262	58903	0	20%	9641	No new basen					15	15	14			Sweco	Heyne Tillı	Sweco	Fletcher Priest Ar	One Click L	Project 2	0%	3	1 Exchange Square LondonAssessment 1 - no decarbonisation
1 Exchange Square Lond	Assessment 2 - de	1279	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurbishm	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishr	1990s	Not listed	49262	58903	0	20%	9641	No new basen					15	15	14			Sweco	Heyne Tillı	Sweco	Fletcher Priest Ar	One Click L	Project 2	0%	3	1 Exchange Square LondonAssessment 2 - decarbonisation
1 Museum Street	Assessment 1 - no	1798	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High I	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and retai	Reinforced	Reinforced			17	19	17	2		Scotch Partn	Heyne Tillı	Scotch Partner	DSDHA	One Click L	Project 4	100%	1	1 Museum StreetAssessment 1 - no decarbonisation
1 Museum Street	Assessment 2 - decarbonisation		Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High I	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and retai	Reinforced	Reinforced			17	19	17	2		Scotch Partn	Heyne Tillı	Scotch Partner	DSDHA	One Click L	Project 4	100%	1	1 Museum StreetAssessment 2 - decarbonisation
1 Southwark Bridge Roa	Assessment 1 - no	2692	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad. Façac	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishm	1980s	Not listed	18636	21363	0	15%	2727	No new basen	Reinforced				7	8	8	1		Hurley Palme	Webb Yate	Hurley Palmer I	BDG architecture	One Click L	Project 5	0%	4	1 Southwark Bridge RoadAssessment 1 - no decarbonisation
1 Southwark Bridge Roa	Assessment 2 - de	1100	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad. Façac	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishm	1980s	Not listed	18636	21363	0	15%	2727	No new basen	Reinforced				7	8	8	1		Hurley Palme	Webb Yate	Hurley Palmer I	BDG architecture	One Click L	Project 5	0%	4	1 Southwark Bridge RoadAssessment 2 - decarbonisation
100 And 108 Fetter Lane	Assessment 1 - no	1792	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and construc	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced			9	14	13	5		Waterman G	Watermar	Waterman Gro	Fletcher Priest Ar	One Click L	Project 8	100%	1	100 And 108 Fetter LaneAssessment 1 - no decarbonisation
100 And 108 Fetter Lane	Assessment 2 - de	1228	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and construc	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced			9	14	13	5		Waterman G	Watermar	Waterman Gro	Fletcher Priest Ar	One Click L	Project 8	100%	1	100 And 108 Fetter LaneAssessment 2 - decarbonisation
100 Grays Inn Road	Assessment 1 - no	1653	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127 Cle	31/10/2022		Pending	Office & Retail	Yes	Heavy Refurbishr	1960s	Not listed	7893	12747	7893	61%	12747	No new basen	Reinforced	Timber			9	12	11	3		Max Fordhar	Heyne Tillı	Max Fordham	Piercy & Compan	One Click L	Project 9	100%	2	100 Grays Inn RoadAssessment 1 - no decarbonisation
100 Grays Inn Road	Assessment 2 - decarbonisation		Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127 Cle	31/10/2022		Pending	Office & Retail	Yes	Heavy Refurbishr	1960s	Not listed	7893	12747	7893	61%	12747	No new basen	Reinforced	Timber			9	12	11	3		Max Fordhar	Heyne Tillı	Max Fordham	Piercy & Compan	One Click L	Project 9	100%	2	100 Grays Inn RoadAssessment 2 - decarbonisation
101 Whitechapel High St	Assessment 1 - no	2446	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High Street,	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbishr	1900s	Not listed	7366	40772	4693	454%	38099	New					5	18	15	13		Buro Happol	Buro Happ	Buro Happold	Foster + Partners	One Click L	Project 11	64%	3	101 Whitechapel High StreetAssessment 1 - no decarbonisation
101 Whitechapel High St	Assessment 2 - de	1727	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High Street,	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbishr	1900s	Not listed	7366	40772	4693	454%	38099	New					5	18	15	13		Buro Happol	Buro Happ	Buro Happold	Foster + Partners	One Click L	Project 11	64%	3	101 Whitechapel High StreetAssessment 2 - decarbonisation
115 - 123 Houndsditch	Assessment 1 - no	1489	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and constru	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New					7	28	24	22		Atelier Ten	AKT II	Norman, Disne	Allford Hall Mona	One Click L	Project 12	100%	1	115 - 123 HoundsditchAssessment 1 - no decarbonisation
115 - 123 Houndsditch	Assessment 2 - de	1045	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and constru	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New					7	28	24	22		Atelier Ten	AKT II	Norman, Disne	Allford Hall Mona	One Click L	Project 12	100%	1	115 - 123 HoundsditchAssessment 2 - decarbonisation
120 Fleet Street	Assessment 1 - no	2074	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court building,	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbishr	1930s	Grade II*	58818	74065	54427	26%	69674	New and retai	Reinforced	Steel		Minimal li	7	23	21	1	21	chapmanbds	AKT II	chapmanbdsp	Bjarke Ingels Gro	One Click L	Project 13	93%	3	120 Fleet StreetAssessment 1 - no decarbonisation
120 Fleet Street	Assessment 2 - de	1096	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court building,	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbishr	1930s	Grade II*	58818	74065	54427	26%	69674	New and retai	Reinforced	Steel		Minimal li	7	23	21	1	21	chapmanbds	AKT II	chapmanbdsp	Bjarke Ingels Gro	One Click L	Project 13	93%	3	120 Fleet StreetAssessment 2 - decarbonisation
14-21 Holborn Viaduct	Assessment 1 - no	2188	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-21 Ho	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure and	1920s	Not listed	16944	35948		112%	19004						11	15	13	4		Hilson Morar	Heyne Tillı	Hilson Moran	PLP Architecture	eTool LCD	Project 14	0%	2	14-21 Holborn ViaductAssessment 1 - no decarbonisation
14-21 Holborn Viaduct	Assessment 2 - de	1768	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-21 Ho	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure and	1920s	Not listed	16944	35948		112%	19004						11	15	13	4		Hilson Morar	Heyne Tillı	Hilson Moran	PLP Architecture	eTool LCD	Project 14	0%	2	14-21 Holborn ViaductAssessment 2 - decarbonisation
1-5 Lower Marsh	Assessment 1 - no	1424	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing struc	02/02/2023		Pending	Office	No	Heavy Refurbishr	1990s	Not listed	4927	6294	132	28%	1499	No new basen	Reinforced	RC Cores / s			6	8	7	2		Sweco	Davis Mag	Sweco	Fathom	One Click L	Project 15	3%	3	1-5 Lower Marsh Assessment 1 - no decarbonisation
1-5 Lower Marsh	Assessment 2 - decarbonisation		Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing struc	02/02/2023		Pending	Office	No	Heavy Refurbishr	1990s	Not listed	4927	6294	132	28%	1499	No new basen	Reinforced	RC Cores / s			6	8	7	2		Sweco	Davis Mag	Sweco	Fathom	One Click L	Project 15	3%	3	1-5 Lower Marsh Assessment 2 - decarbonisation
15 Minories, 57-60 & 62	Assessment 1 - no	1187	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and erectio	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New					14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Click L	Project 16	100%	1	15 Minories, 57-60 & 62 Aldgate High Street And 1 Little Somerset StreetAssessment 1 - no decarbonisation
15 Minories, 57-60 & 62	Assessment 2 - no	1033	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and erectio	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New					14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Click L	Project 16	100%	1	15 Minories, 57-60 & 62 Aldgate High Street And 1 Little Somerset StreetAssessment 2 - decarbonisation
15-17 Eldon Street	Assessment 1 - no	1971	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldon Stre	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbishr	1980s	Not listed	4161	5890	1009	42%	2738	No new basen	Reinforced	Steel	RC Cores / s RC Cores /	Load bala	7	11	9	4		Verte	Frankham	Butler and You	Gort Scott		Project 17	24%	3	15-17 Eldon StreetAssessment 1 - no decarbonisation
15-17 Eldon Street	Assessment 2 - de	1925	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldon Stre	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbishr	1980s	Not listed	4161	5890	1009	42%	2738	No new basen	Reinforced	Steel	RC Cores / s RC Cores /	Load bala	7	11	9	4		Verte	Frankham	Butler and You	Gort Scott		Project 17	24%	3	15-17 Eldon StreetAssessment 2 - decarbonisation
166 High Holborn	Assessment 1 - no	1691	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High I	27/06/2023		Pending	Commercial & Re		New Build			0	493	0		493						6	6				Scotch Partn	Arup				Project 18	100%	1	166 High HolbornAssessment 1 - no decarbonisation
166 High Holborn	Assessment 2 - decarbonisation		Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High I	27/06/2023		Pending	Commercial & Re		New Build			0	493	0		493						6	6				Scotch Partn	Arup				Project 18	100%	1	166 High HolbornAssessment 2 - decarbonisation
16A-18 West Central Str	Assessment 1 - no	1612	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave just the basement walls and slab (existing retained walls (inc. : Yes				Substructure and	1900s	Not listed	2712	3247	1718	20%	2253	No new basen	Brickwork a	Reinforced	None		3	6	6	3		Scotch Partn	Heyne Tillı	Scotch Partner	DSDHA		Project 19	63%	2	16A-18 West Central StreetAssessment 1 - no decarbonisation
16A-18 West Central Str	Assessment 2 - de	1400	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave just the basement walls and slab (existing retained walls (inc. : Yes				Substructure and	1900s	Not listed	2712	3247	1718	20%	2253	No new basen	Brickwork a	Reinforced	None		3	6	6	3		Scotch Partn	Heyne Tillı	Scotch Partner	DSDHA		Project 19	63%	2	16A-18 West Central StreetAssessment 2 - decarbonisation
175 Bishopsgate/Exchan	Assessment 1 - no	2324	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to existing I	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishm	1980s	Not listed	55000	58903	5500	7%	9403	No new basen	Reinforced	Steel		Minimal li	12	12	12			Sweco			Fletcher Priest Ar		Project 20	10%	4	175 Bishopsgate/Exchange SquareAssessment 1 - no decarbonisation
175 Bishopsgate/Exchan	Assessment 2 - de	1279	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to existing I	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishm	1980s	Not listed	55000	58903	5500	7%	9403	No new basen	Reinforced	Steel		Minimal li	12	12	12			Sweco			Fletcher Priest Ar		Project 20	10%	4	175 Bishopsgate/Exchange SquareAssessment 2 - decarbonisation
18 Blackfriars Road - Off	Assessment 1 - no	1785	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Improven	05/07/2023			Office		New Build				116381			116381						48	48				Arup					Project 21	100%	1	18 Blackfriars Road - Office BuildingAssessment 1 - no decarbonisation
18 Blackfriars Road - Off	Assessment 2 - decarbonisation		Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Improven	05/07/2023			Office		New Build				116381			116381						48	48				Arup					Project 21	100%	1	18 Blackfriars Road - Office BuildingAssessment 2 - decarbonisation
18 Blackfriars Road - Par	Assessment 1 - no	2095	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comprising				Residential (inc. :		New Build				19384			19384						25	25				Arup					Project 22	100%	1	18 Blackfriars Road - Paris BuildingAssessment 1 - no decarbonisation
18 Blackfriars Road - Par	Assessment 2 - decarbonisation		Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comprising				Residential (inc. :		New Build				19384			19384						25	25				Arup					Project 22	100%	1	18 Blackfriars Road - Paris BuildingAssessment 2 - decarbonisation
18 Blackfriars Road - Sta	Assessment 1 - no	2178	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podium (re	04/07/2023			Residential (inc. :		New Build				39578			39578						42	40				Arup					Project 23	100%	1	18 Blackfriars Road - Stamford BuildingAssessment 1 - no decarbonisation
18 Blackfriars Road - Sta	Assessment 2 - decarbonisation		Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podium (re	04/07/2023			Residential (inc. :		New Build				39578			39578						42	40				Arup					Project 23	100%	1	18 Blackfriars Road - Stamford BuildingAssessment 2 - decarbonisation
181 Talgarth Road	Assessment 1 - no	1807	Hammersmith and	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two building	04/11/2021	11/08/2022		Residential (inc. :		New Build				16943			16943						16	16				Stroma					Project 24	100%	1	181 Talgarth RoadAssessment 1 - decarbonisation
181 Talgarth Road	Assessment 2 - de	963	Hammersmith and	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two building	04/11/2021	11/08/2022		Residential (inc. :		New Build				16943			16943						16	16				Stroma					Project 24	100%	1	181 Talgarth RoadAssessment 2 - decarbonisation
18-20 Savile Row	Assessment 1 - no	1440	Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, excavati	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and retai	Reinforced	Steel	RC Cores / s RC Cores /		9	9	8	8		Norman, Dis	Elliot Woo	Norman, Disne	Fathom	One Click L		100%	1	18-20 Savile RowAssessment 1 - no decarbonisation
18-20 Savile Row	Assessment 2 - decarbonisation		Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, excavati	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and retai	Reinforced	Steel	RC Cores / s RC Cores /		9	9	8	8		Norman, Dis	Elliot Woo	Norman, Disne	Fathom	One Click L		100%	1	18-20 Savile RowAssessment 2 - decarbonisation
19-35 Baker Street	Assessment 1 - no	1095	Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at 19-35	29/11/2016	27/03/2019	Granted	Office, Retail & R		New Build	1970s		20087	49561		147%	29474	New					10	9				Arup	AKT II	Arup	Hopkins Architect		Project 25	100%	1	19-35 Baker StreetAssessment 1 - no decarbonisation
19-35 Baker Street	Assessment 2 - decarbonisation		Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at 19-35	29/11/2016	27/03/2019	Granted	Office, Retail & R		New Build	1970s		20087	49561		147%	29474	New					10	9				Arup	AKT II	Arup	Hopkins Architect		Project 25	100%	1	19-35 Baker StreetAssessment 2 - decarbonisation
19-35 Sylvan Grove	Assessment 1 - no	1429	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 storeys	02/03/2023		Pending	Residential (inc. :		New Build	1960s	Not listed	2154	27476	1720	1176%	27042	New	Masonry ar	Reinforced	Moment fra	Cores and :	Load bala	2	36	35		36	Introba	Civic Engir		TP Bennett		Project 26	80%	3	19-35 Sylvan GroveAssessment 1 - no decarbonisation
19-35 Sylvan Grove	Assessment 2 - decarbonisation		Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 storeys	02/03/2023		Pending	Residential (inc. :		New Build	1960s	Not listed	2154	27476	1720	1176%	27042	New	Masonry ar	Reinforced	Moment fra	Cores and :	Load bala	2	36	35		36	Introba	Civic Engir		TP Bennett		Project 26	80%	3	19-35 Sylvan GroveAssessment 2 - decarbonisation
2 Trafalgar Way	Assessment 1 - no decarbonisati		Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide a new	02/07/2020	30/06/2022		Residential (inc. :		New Build					0			0						48	46									Project 29	100%	1	2 Trafalgar WayAssessment 1 - no decarbonisation
2 Trafalgar Way	Assessment 2 - decarbonisation		Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide a new	02/07/2020	30/06/2022		Residential (inc. :		New Build					0			0						48	46									Project 29	100%	1	2 Trafalgar WayAssessment 2 - decarbonisation
20 Giltspur Street	Assessment 1 - no	2357	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existing bu	12/09/2022	12/12/2022		Office	No	Heavy Refurbishr	2000s	Not listed	8734	11184	2024	28%	4474	No new basen	Steel	Steel	RC Cores / s RC Cores /	Load bala	7	6	6		None	Norman Dis	Elliot Woo	Norman, Disne	Buckley Gray Yeo		Project 30	23%	3	20 Giltspur StreetAssessment 1 - no decarbonisation
20 Giltspur Street	Assessment 2 - decarbonisation		City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existing bu	12/09/2022	12/12/2022		Office	No	Heavy Refurbishr	2000s	Not listed	8734	11184	2024	28%	4474	No new basen	Steel	Steel	RC Cores / s RC Cores /	Load bala	7	6	6		None	Norman Dis	Elliot Woo	Norman, Disne	Buckley Gray Yeo		Project 30	23%	3	20 Giltspur StreetAssessment 2 - decarbonisation
216-220 Blackfriars Roa	Assessment 1 - no	3967	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 basement le	03/11/2020	20/07/2022		Commercial & Re		New Build				40097			40097						25	22				WSP					Project 31	100%	1	216-220 Blackfriars RoadAssessment 1 - no decarbonisation
216-220 Blackfriars Roa	Assessment 2 - de	2626	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 basement le	03/11/2020	20/07/2022		Commercial & Re		New Build				40097			40097						25	22				WSP					Project 31	100%	1	216-220 Blackfriars RoadAssessment 2 - decarbonisation
2-3 Finsbury Avenue	Assessment 1 - no decarbonisati		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and new bu	04/11/2020	19/08/2021		Office		New Build				105733			105733						40	37				Atelier Ten					Project 32	100%	1	2-3 Finsbury AvenueAssessment 1 - no decarbonisation
2-3 Finsbury Avenue	Assessment 2 - decarbonisation		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and new bu	04/11/2020	19/08/2021		Office		New Build				105733			105733						40	37				Atelier Ten					Project 32	100%	1	2-3 Finsbury AvenueAssessment 2 - decarbonisation
25 Mandela Way	Assessment 1 - no	1300	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118						4	4				ADW Develo					Project 33	100%	1	25 Mandela WayAssessment 1 - no decarbonisation
25 Mandela Way	Assessment 2 - decarbonisation		Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118						4	4				ADW Develo					Project 33	100%	1	25 Mandela WayAssessment 2 - decarbonisation
257-283 Ilderton Road	Assessment 1 - no	1147	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 10-sto	09/05/2023			Residential (inc. :		New Build				29541			29541						30	30				Atelier Ten					Project 34	100%	1	257-283 Ilderton RoadAssessment 1 - no decarbonisation
257-283 Ilderton Road	Assessment 2 - decarbonisation		Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 10-sto	09/05/2023			Residential (inc. :		New Build				29541			29541						30	30				Atelier Ten					Project 34	100%	1	257-283 Ilderton RoadAssessment 2 - decarbonisation
26 To 46 Lisson Grove	Assessment 1 - no	2230	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure and	1960s	Not listed	6192	10624	4404	72%	8836	No new basen					5	8	7	3		Sweco					Project 35	71%	2	26 To 46 Lisson GroveAssessment 1 - no decarbonisation
26 To 46 Lisson Grove	Assessment 2 - decarbonisation		Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure and	1960s	Not listed	6192	10624	4404	72%	8836	No new basen					5	8	7	3		Sweco					Project 35	71%	2	26 To 46 Lisson GroveAssessment 2 - decarbonisation
302-312 Stratford High S	Assessment 1 - no	2024	London Legacy Dev	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and redevel	16/03/2022	22/05/2023	Granted	Commercial & Re	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New					3	27	25	27		Elementa	Meinhardt	Meinhardt	Henley Halebrow	One Click L	Project 36	100%	1	302-312 Stratford High StreetAssessment 1 - no decarbonisation
302-312 Stratford High S	Assessment 2 - decarbonisation		London Legacy Dev	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and redevel	16/03/2022	22/05/2023	Granted	Commercial & Re	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New					3	27	25	27		Elementa	Meinhardt	Meinhardt	Henley Halebrow	One Click L	Project 36	100%	1	302-312 Stratford High StreetAssessment 2 - decarbonisation
330 Grays Inn Road	Assessment 1 - no	2445	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with a two	03/03/2023		Pending	Office, Retail & R	Yes	Heavy Refurbishr	1870s	Not listed	12811	35681	12097	179%	34967	New and retai	Masonry ar	Reinforced	RC Cores / s RC Cores /	Load bala	3	2	5	2	15	XCO2	WSP		Alford Hall Mona	One Click L	Project 37	94%	3	330 Grays Inn Road Assessment 1 - no decarbonisation
330 Grays Inn Road	Assessment 2 - decarbonisation		Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with a two	03/03/2023		Pending	Office, Retail & R	Yes	Heavy Refurbishr	1870s	Not listed	12811	35681	12097	179%	34967	New and retai	Masonry ar	Reinforced	RC Cores / s RC Cores /	Load bala	3	2	5	2	15	XCO2	WSP		Alford Hall Mona	One Click L	Project 37	94%	3	330 Grays Inn Road Assessment 2 - decarbonisation
334-348 Oxford Street	Assessment 1 - no	3817	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, and par	26/07/2021	01/03/2022	Granted	Office & Retail	No	Heavy Refurbishr	1970s	Not listed	33632	43040	0	28%	9408	New and retai					8	11	10	3		Atelier Ten	AKT II	Atelier Ten	Alford Hall Mona	One Click L	Project 38	0%	3	334-348 Oxford StreetAssessment 1 - no decarbonisation
334-348 Oxford Street	Assessment 2 - de	2312	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, and par	26/07/2021	01/03/2022	Granted	Office & Retail	No	Heavy Refurbishr	1970s	Not listed	33632	43040	0	28%	9408	New and retai					8	11	10	3		Atelier Ten	AKT II	Atelier Ten	Alford Hall Mona	One Click L	Project 38	0%	3	334-348 Oxford StreetAssessment 2 - decarbonisation
38-42 Southwark Bridge	Assessment 1 - no	1842	Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870						7	7				Arup					Project 39	100%	1	38-42 Southwark Bridge RoadAssessment 1 - no decarbonisation
38-42 Southwark Bridge	Assessment 2 - decarbonisation		Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870						7	7				Arup					Project 39	100%	1

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Site name	Borough	Postcode	Planning reference	Data source	Description	Submission	Decision date	Final decision	Building typology	Change of	Classification	Existing	Listed status	GIA	GIA new	GIA	GIA %	GIA added	Basement	Existing	New	Existing	New	Loading	Existing	New	Above	Added	Added	Fire	LCA author /	Structural	MEP	Architect	LCA Software	Project Ref	% demo	Class Ref
1 Appold Street	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building. Retention and Refurbishment of existing structure - provide 14-storey. Retention of existing gym and swimming pool at basement level	12/12/2022		Pending	Office	Yes	Heavy Refurbishment	1980s	Not listed	28992	51869	12718	79%	35595	No new basement	Steel	Steel				10	16	14	6		Hilson Moran	AKT II	MTT	Piercy & Company	One Click LCA	Project 1	44%	3
1 Exchange Square London	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurbishment and Refurbishment to the existing facade facing onto Exchange square and upper levels; External alterations and improvements to facades facing onto Bishopsgate and at ground floor including new main entrance and new retail frontages; public realm improvements fronting Bishopsgate including new steps, seating and accessibility improvements; Increased height and widening of Exchange Arcade; creation of a new outdoor retail pavilion terrace to level 1; creation of west Refurbishment terraces; creation of wing Refurbishment terraces; provision of external terraces for occupants at levels 4, 8, 9, 10, 11, 12 and roof terrace on level 13; provision of cycle storage and other works incidental to the development (9,920 sq.m).	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishment	1990s	Not listed	49262	58903	0	20%	9641	No new basement						15	15	14	0		Sweco	Heyne Tillet Steel	Sweco	Fletcher Priest Architects	One Click LCA	Project 2	0%	3
1 Museum Street	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High Holborn and 1 Museum Street following the substantial demolition of the existing NCP car park and former Travelodge Hotel to provide a mixed-use scheme, providing office, residential, and town centre uses at ground floor level. Works of part-demolition and	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and retained	Reinforced Concrete	Reinforced Concrete				17	19	17	2		Scotch Partners	Heyne Tillet Steel	Scotch Partners	DSDHA	One Click LCA	Project 4	100%	1
1 Southwark Bridge Road	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad. Façade and roof coverings replaced, additional storey at roof level, infill Refurbishments	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishment	1980s	Not listed	18636	21363	0	15%	2727	No new basement	Reinforced Concrete					7	8	8	1		Hurley Palmer Flatt	Webb Yates	Hurley Palmer	BDG architecture +	One Click LCA	Project 5	0%	4
100 And 108 Fetter Lane	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and construction of a new building for office use (Class E) and a flexible commercial unit (Class E(a)(b)(c)(d)), comprising a basement level, ground, mezzanine and 12 upper storeys plus roof plant level, creation of a new pedestrian route and pocket square at ground level, ancillary	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced Concrete				9	14	13	5		Waterman Group	Waterman Group	Waterman Group	Fletcher Priest	One Click LCA	Project 8	100%	1
100 Grays Inn Road	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127 Clerkenwell Road and the erection of a mixed-use office led (Class E) development comprising a basement, ground plus eight storey building for flexible retail / restaurant / office uses at ground floor and basement (Class E), basement	11/10/2022		Pending	Office & Retail	Yes	Substructure and/or Façade Retained	1960s	Not listed	7893	12747	7893	61%	12747	No new basement	Reinforced Concrete	Timber				9	12	11	3		Max Fordham	Heyne Tillet Steel	Max Fordham	Piercy & Company	One Click LCA	Project 9	100%	2
100 New Bridge Street	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment, 85% of RC walls and other structural components retained, 90% of floor and metal deck retained.	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishment	1990s	Not listed	20384	23393		15%	3009		Steel					11	12	11	1		Long and Partners	Waterman Group	Long and Partners	Gensler	Sturgis Carbon Calculator	Project 10	0%	4
101 Whitechapel High Street	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High Street, 2 7 6 Commercial Street and the western annex of the Canon Barnett Primary School; partial demolition and partial retention of 102 - 105 Whitechapel High Street (with internal alterations); and redevelopment to provide a building ranging from ground plus 4-14 storeys,	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbishment	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13	0	Buro Happold	Buro Happold	Buro Happold	Foster + Partners	One Click LCA	Project 11	64%	3
115 - 123 Houndsditch	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and construction of a new building comprising four basement levels (plus one basement mezzanine), ground floor plus 23 upper storeys, including office use (Class E), flexible retail / cafe use (Class E); community space (Sui Generis), ancillary basement cycle parking, servicing and plant; new	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22		Atelier Ten	AKT II	Norman, Disney & Young	Allford Hall Monaghan	One Click LCA	Project 12	100%	1
120 Fleet Street	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court building, part demolition of basement and foundations, erection of new building with 2 basement levels and ground floor plus 20-storeys. Change of use of Daily Express Building alterations/refurbishment to listed building.	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbishment	1930s	Grade II*	58818	74065	54427	26%	69674	New and retained	Reinforced Concrete	Steel			Minimal intervention	7	23	21	1	21	chapmanbdsp	AKT II	chapmanbdsp	Bjarke Ingels Group	One Click LCA	Project 13	93%	3
14-21 Holborn Viaduct	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-21 Holborn Viaduct, 34-35 and 32-33A Farringdon Street, and construction of a new building arranged over 2 basement levels, ground and 10 upper floors to Holborn Viaduct and 12 upper floors to Farringdon Street to provide a new Commercial, Business and Service (Class E)	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure and/or Façade Retained	1920s	Not listed	16944	35948		112%	19004							11	15	13	4		Hilson Moran	Heyne Tillet Steel	Hilson Moran	PLP Architecture	eTool LCD	Project 14	0%	2
1-5 Lower Marsh	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing structure's 4th floor slab, small area of 5th floor slab demolished and replaced, small ground floor Refurbishment, façade alterations	02/02/2023		Pending	Office	No	Heavy Refurbishment	1990s	Not listed	4927	6294	132	28%	1499	No new basement	Reinforced Concrete		RC Cores / shear walls			6	8	7	2		Sweco	Davis Maguire	Sweco	Fathom	One Click LCA	Project 15	3%	3
15 Minories, 57-60 & 62 Aldgate High Street And 1 Little	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and erection of a mixed use building with 3 basement levels	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New							14	13			Hoare Lea	WSP	Hoare Lea	ACME	One Click LCA	Project 16	100%	1
15-17 Eldon Street	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldon Street facade. Refurbishment and refurbishment of the existing Class E use building to provide a replacement 5th floor level, additional 6th, 7th and 8th floor levels and new facade to Eldon Street. I	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbishment	1980s	Not listed	4161	5890	1009	42%	2738	No new basement	Reinforced Concrete	Steel	RC Cores / shear walls	RC Cores / shear walls	Load balancing at all levels	7	11	9	4	0	Verte	Frankham Consultanc	Butler and Young	Gort Scott		Project 17	24%	3
166 High Holborn	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High Holborn and 1 Museum Street following the substantial demolition of the existing NCP car park and former Travelodge Hotel to provide a mixed-use scheme, providing office, residential, and town centre uses at ground floor level. Works of part-demolition and	27/06/2023		Pending	Commercial & Residential		New Build			0	493	0		493							6	6				Scotch Partners	Arup				Project 18	100%	1
16A-18 West Central Street	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave just the basement walls and slab (existing retaining walls to be temporary propped prior to demolishing the ground floor); and	27/06/2023		Pending	Residential (inc. student	Yes	Substructure and/or Façade Retained	1900s	Not listed	2712	3247	1718	20%	2253	No new basement	Brickwork and timber	Reinforced Concrete	None			3	6	6	3	0	Scotch Partners	Heyne Tillet Steel	Scotch Partners	DSDHA		Project 19	63%	2
175 Bishopsgate/Exchange Square	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to existing façade facing onto square and upper levels. Increase height and widen Arcade. Creation of Refurbishment terraces	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishment	1980s	Not listed	55000	58903	5500	7%	9403	No new basement	Reinforced Concrete	Steel			Minimal intervention	12	12	12	0	0	Sweco			Fletcher Priest		Project 20	10%	4
18 Blackfriars Road - Office Building	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Improvements to existing public house	05/07/2023			Office		New Build				116381			116381							48	48				Arup					Project 21	100%	1
18 Blackfriars Road - Paris Building	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comprising of affordable residential accommodation.				Residential (inc. student		New Build				19384			19384							25	25				Arup					Project 22	100%	1
18 Blackfriars Road - Stamford Building	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podium (retail, leisure), 2 basement levels. 2 residential buildings of 22 and 40 storeys above podium.	04/07/2023			Residential (inc. student		New Build				39578			39578							42	40				Arup					Project 23	100%	1
181 Talgarth Road	Hammersmith and Fulham	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two buildings	04/11/2021	11/08/2022		Residential (inc. student		New Build				16943			16943							16	16				Stroma					Project 24	100%	1
18-20 Savile Row	Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, excavation to deepen existing basement, and redevelopment to provide an eight storey building plus one storey basement comprising flexible retail (Class E(a)) and/or restaurant (Class E(b)) floorspace and tailoring floorspace (Class E(a), Class E(g)(ii) & Class E(g)(iii)) at part ground	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and retained	Reinforced Concrete	Steel	RC Cores / shear walls	RC Cores / shear walls		9	9	8	8		Norman, Disney & Young	Elliot Wood	Norman, Disney &	Fathom	One Click LCA		100%	1
19-35 Baker Street	Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at 19-35 Baker Street, 88-110 George Street, 69-71 Blandford Street and redevelopment to create a mixed use scheme providing offices (Class B1), retail (Class A1 and flexible Class A1/A3 units) and up to 51 residential units (Class C3) within a new ground plus nine storey building	29/11/2016	27/03/2019	Granted	Office, Retail & Residential		New Build	1970s		20087	49561		147%	29474	New						10	9				Arup	AKT II	Arup	Hopkins Architects		Project 25	100%	1
19-35 Sylvan Grove	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 storeys. Partial demolition, erection of new mixed-use building.	02/03/2023		Pending	Residential (inc. student		Heavy Refurbishment	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry and steel	Reinforced Concrete	Moment frame	Cores and bracing	Load balancing at all levels	2	36	35	0	36	Introba	Civic Engineers		TP Bennett		Project 26	80%	3
2 Trafalgar Way	Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide a new mixed use building including student accommodation units and associated uses	02/07/2020	30/06/2022		Residential (inc. student		New Build				0			0							48	46									Project 29	100%	1
20 Giltspur Street	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existing building. Infill Refurbishments at upper levels (uppermost floor extended to area of lower floors) . Altered and additional entrances. Altered plant enclosure. Façade alterations.	12/09/2022	12/12/2022		Office	No	Heavy Refurbishment	2000s	Not listed	8734	11184	2024	28%	4474	No new basement	Steel	Steel	RC Cores / shear walls	RC Cores / shear walls	Load balancing at all levels	7	6	6	0	None 0 required	Norman Disney & Young	Elliot Wood	Norman, Disney &	Buckley Gray Yeoman		Project 30	23%	3
216-220 Blackfriars Road	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 basement levels,	03/11/2020	20/07/2022		Commercial & Residential		New Build				40097			40097							25	22				WSP					Project 31	100%	1
2-3 Finsbury Avenue	City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and new building with 3 basement levels and ground plus 37 storeys.	04/11/2020	19/08/2021		Office		New Build				105733			105733							40	37				Atelier Ten					Project 32	100%	1
25 Mandela Way	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118							4	4				ADW Development					Project 33	100%	1
257-283 Ilderton Road	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 10-storey storage facility.Plants on roof	09/05/2023			Residential (inc. student		New Build				29541			29541							30	30				Atelier Ten					Project 34	100%	1
26 To 46 Lisson Grove	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure and/or Façade Retained	1960s	Not listed	6192	10624	4404	72%	8836	No new basement						5	8	7	3	0	Sweco					Project 35	71%	2
302-312 Stratford High Street	London Legacy Development	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and redevelopment of the site to provide a part 12, part 25 storey building (plus 2 basement levels) for a mixed-use development comprising 465 student accommodation rooms (Sui Generis), 786sqm workspace (Class E), a new public house consisting of 1415qm (Sui Generis) with hard and	16/03/2022	22/05/2023	Granted	Commercial & Residential	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27		Elementa	Meinhardt	Meinhardt	Henley Halebrown	One Click LCA	Project 36	100%	1
330 Grays Inn Road	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with a two storey Refurbishment, and demolition of all other buildings	03/03/2023		Pending	Office, Retail & Residential	Yes	Heavy Refurbishment	1870s	Not listed	12811	35681	12097	179%	34967	New and retained	Masonry and steel	Reinforced Concrete	RC Cores / shear walls	RC Cores / shear walls	Load balancing at foundations	3	2	5	2	15	XCO2	WSP		Allford Hall Monaghan	One Click LCA	Project 37	94%	3
334-348 Oxford Street	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, and partial demolition of, existing building to provide partly extended and refurbished, and partly new, building comprising deepened basement, ground, and nine upper floors	26/07/2021	01/03/2022	Granted	Office & Retail	No	Heavy Refurbishment	1970s	Not listed	33632	43040	0	28%	9408	New and retained						8	11	10	3	0	Atelier Ten	AKT II	Atelier Ten	Allford Hall Monaghan	One Click LCA	Project 38	0%	3
38-42 Southwark Bridge Road	Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870							7	7				Arup					Project 39	100%	1
38-70 Baker Street	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & Residential	No	Substructure and/or Façade Retained	1950s	Not listed	19618	33223	19618	69%	33223	No new basement						7	10	9	3		Buro Happold					Project 40	100%	2
45 Hornsey Road	Islington	N7 7DD	P2022/1943/FUL	Planning Portal	Demolition of existing building and structure and erection of 12-storey building and refurb. of railway arches	25/05/2022	18/07/2023		Residential (inc. student		New Build				9983			9983							12	12				Energist					Project 41	100%	1
458 Oxford Street	Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777							11	9				Arup	Arup	Arup	Pilbrow & Partners	One Click LCA	Project 42	100%	1
47-50 Mark Lane	City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and structures, retention of existing basement, construction of new ground plus 11-storey building with plant above.	21/12/2022	22/03/2023		Office	No	Substructure and/or Façade Retained	1960s	Not listed	16523	30218	16523	83%	30218	No new basement						11	11	11			GXN Innovation	AKT II	Atelier Ten	Orms Designers and	One Click LCA	Project 43	100%	2
55 Gracechurch Street	City of London	EC3V 0EE	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New building with basement levels and ground floor plus 29 storeys.	24/08/2020	26/01/2021		Office		New Build				33202			33202							32	29				TFT					Project 47	100%	1
61 - 65 Holborn Viaduct London EC1A 2FD	City of London	EC1A 2DE	21/00781/FULMAJ	Planning Portal	Erection of new ground plus 12-storey building with 2 basement levels, existing single storey basement wall is re-used	13/09/2021	01/02/2022		Residential (inc. student		New Build				20463			20463							14	12				Hodkinson					Project 48	100%	1
6-12 Verney Road	Southwark	SE16 3FN	23/AP/0948	Planning Portal	Up to 4-storey building.	05/04/2023			Industrial		New Build				20864			20864							4	4				Insignis					Project 49	100%	1
63 - 66 Coleman Street	City of London	EC2R 5AN	21/00694/FULMAJ	Planning Portal	Front façade retention	09/08/2021	14/12/2022		Office & Retail	No	Substructure and/or Façade Retained	1870s	Not listed	3851	5220	3851	36%	5220							8	10	9	2	0	FLATT	Heyne Tillet Steel	FLATT	Emrys Architects	One Click LCA	Project 50	100%	2
63 New Bond Street	Westminster	W1S 1RJ	23/08027/FULL	Planning Portal	Alteration and extension of the existing buildings, including partial demolition and retention and retrofit to provide a building with basement, ground and ten upper floors, setback at fifth to eighth floors with terraces, setback at ninth floor with terrace and plant, and a roof terrace with lift over run and pavilion at the	20/11/2023	02/03/2024	Granted	Office & Retail	No	Heavy Refurbishment	1800s	Not listed	15079	18617		23%	3538	New and retained	Masonry and steel	Reinforced Concrete	RC Cores / shear walls	RC Cores / shear walls	Capacity enhancement	7	4	6	4	0	Buro Happold	Buro Happold	Buro Happold	Foster + Partners	One Click LCA		0%	3
65 Gresham St	City of London	EC2V 7NQ	22/00848/FULMAJ	Planning Portal	Horizontal Refurbishment at 8th and 9th floor levels and three-storey vertical Refurbishment plus plant enclosure to create Class E floorspace; alterations and refurbishment to existing windows and facades; structural alterations and repositioning of cores; creation of new and refurbished entrances on Gresham Street	07/09/2022		Pending	Office	No	Heavy Refurbishment	2000s	Not listed	41136	54290	0	32%	13154	No new basement						12	17	14	5	2	Longevity Partners	Buro Happold	Atelier Ten	Squire and Partners	One Click LCA	Project 51	0%	3
7 Brannan Street	Tower Hamlets	E14 9ZR																0																	Project 52		0
7 Millbank	Westminster	SW1P 3JA	21/01508/FULL	Planning Portal		10/03/2021	08/02/2022		Office		New Build				19414			19414							10	8				Hilson Moran					Project 53	100%	1
70 Gracechurch Street	City of London	EC3V 0XL	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New building with basement levels and ground floor plus 33 storeys	13/10/2020	29/09/2021		Office		New Build				60616			60616							37	33				TFT					Project 54	100%	1
747-759 & 765-775 Old Kent Road	Southwark	SE15 1NZ	23/AP/1862	Planning Portal	Building A: 33 storeys + basement. B: 19 storeys. C: 15 storeys. D: 20 storeys	03/07/2023			Residential (inc. student		New Build				51386			51386							35	33				Whitecode					Project 55	100%	1
76-78 Upper Ground	Lambeth	SE1 9PZ	21/01142/FUL	Planning Portal	Refurbishment, partial demolition and Refurbishment of the existing building, 80% retention. New core. Plant on roof extended.	19/03/2021	23/12/2021		Office	No	Heavy Refurbishment	1980s	Grade II	27790	38840	5060	40%	16110	No new basement						6	7	6	1	4	Watkins Payne	Heyne Tillet Steel	Watkins Payne	Allford Hall Monaghan	One Click LCA	Project 56	18%	3
79-87 Westminster Bridge Road	Lambeth	SE1 7XT	20/03539/FUL	Planning Portal	Erection of ground plus 14-storey building and two basement levels	13/10/2020			Hotel		New Build				8529			8529							16	14				Meinhardt					Project 57	100%	1
8 - 12 New Bridge Street	City of London	EC4V 6AL	22/00622/FULMAJ	Planning Portal	Part demolition of Fleet House, full demolition of St Bride's Tavern (basement levels retained). Erection of 8-storey building	07/07/2022	31/01/2023		Office	No	Heavy Refurbishment	1950s	Not listed	5612	7810	1332	39%	3530	No new basement	Reinforced Concrete		RC Cores / shear walls	RC Cores / shear walls	Horizontal Refurbishment	8	11	10	1	11	Hoare Lea	AKT II	Hoare Lea	HOK International	One Click LCA	Project 58	24%	3
80 Charlotte Street Gallery		W1T 4QS																0					Minimal intervention											Project 60		0
81-103 King's Road	Kensington and Chelsea	SW3 4NX	PP/23/00968	Planning Portal	Demolition of existing building and redevelopment for new building up to four storeys and basement. 10% basement retained.	07/02/2023			Office	No	Substructure and/or Façade Retained	1980s	Not listed	9790	16138	5831	65%	12179	No new basement						5	5	4	0	0	Ramboll	Robert Bird Group	Ramboll	Pilbrow & Partners	One Click LCA	Project 62	60%	2
85 Gracechurch Street	City of London	EC3V 0AA	22/01155/FULEIA	Planning Portal	Partial demolition of existing building (Gracechurch Street frontage adapted) and the construction of a 32 storey building plus basement levels	30/11/2022	11/10/2023	Granted	Office & Retail	No	Substructure and/or Façade Retained	1930s	Not listed	8035	37746	8035	370%	37746	New and retained	Steel					10	37	33	27	0	Sweco	Robert Bird Group		Woods Bagot		Project 63	100%	2
88 Grays Inn Road	Camden	WC1X 8AA	2022/4259/P	Planning Portal	Existing building is being retained and refurbished	11/10/2022			Commercial & Residential	Yes	Retrofit	1960s	Not listed	1280	1149	0	-10%	0	No new basement	Reinforced Concrete					4	4	4	0	2	Max Fordham	Heyne Tillet Steel	Max Fordham	Piercy & Company	One Click LCA	Project 64	0%	5
90 Whitfield		W1T 4EZ																0																	Project 66		0
9-10 and 11 Angel Court	City of London	EC2R 7BH	22/00860/FULMAJ	Planning Portal	Demolition of the existing buildings except 9-10 Angel Court façade (up to 4th floor), new building constructed behind that façade, replica façade of 11 Angel Court up to 3rd floor, over 3 basement levels, ground mezzanine and 9 upper floors plus plant room.	08/09/2022	22/02/2023		Hotel		New Build				4878			4878							12	9				Greengage					Project 67	100%	1
99 City Road	Islington	EC1Y 9DD	P2023/1070/FUL	Planning Portal	Majority of original foundations kept, new façade, core and column added, ground floor to be set back. 63% retention of existing structure.	17/04/2023			Office & Retail		Heavy Refurbishment	1990s	Not listed	21667	64873	8017	199%	51223					RC Cores / shear walls		10	36	35		35	Twin and Earth					Project 68	37%	3
Apollo Business Centre, 158 Trundley's Road	Lewisham	SE8 5JE	DC/23/130258	Planning Portal	Mixed-use redevelopment of the site for a new building comprising part 10, part 26 storeys. 50% GGBS in superstructure concrete mix	02/02/2023			Commercial & Residential		New Build				23204			23204							27	26				Greengage					Project 69	100%	1
Borough Triangle Site	Southwark	SE1 6BN	22/AP/3149	Planning Portal	Demolition of all existing buildings/structures, except 82 and part 83 Borough Road (retained, altered and refurbished). Basement construction, 4 new buildings with 5-46 storey heights.	05/09/2022			Office & Retail		New Build				93367			93367							46	46				Whitecode					Project 70	100%	1
Boundary House 7 - 17 Jewry Street London EC3N 2EX	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and the erection of a basement, ground plus part 14 and part 6 storey building plus plant.	30/09/2021	19/07/2022		Hotel		New Build				11158			11158							15	14				Hoare Lea					Project 71	100%	1
Burgess Industrial Park Parkhouse Street	Southwark	SE5 7TJ	21/AP/1342	Planning Portal	12 blocks of betweeen 2-13 storeys	19/04/2021			Commercial & Residential		New Build				39696			39696							12	12				Waterman Building Services					Project 73	100%	1
Bury House - 31 Bury Street	City of London	EC3A 5AR	20/00848/FULEIA	Planning Portal	The use of prefabricated structural and façade systems present opportunities for material effieincy, which have been explored and incorporated into the proposed design. Further material efficiency opportunities have been explored by retionalising structural gris and assessing different foundation options to	28/10/2020			Office & Retail		New Build				30170			30170							50	46				Hoare Lea					Project 74	100%	1
Buspace Studios	Kensington and Chelsea	W10 5AP	PP/22/07709	Planning Portal	Erection of 2 buildings with groundfloor connection	23/11/2023			Commercial & Residential		New Build				9450			9450							6	5				XCO2					Project 75	100%	1
Canada Water Dockside Plot A1	Southwark	SE16 7PJ	21/AP/2655	Planning Portal	Plot A1 and A2 share basements. Ground plus mezzanine and 24 storeys	12/10/2022			Office		New Build				61551			61551							25	24				Atelier Ten					Project 76	100%	1
Canada Water Dockside Plot A2	Southwark	SE16 7PJ	23/AP/0565	Planning Portal	Erection of 11-storey building with 1 basement level	12/10/2022			Office		New Build				35196			35196							12	11				Arup					Project 77	100%	1
Castle & Fitzroy House 37 - 45 Paul Street	Islington	EC2A 4UY	P2022/2893/FUL	Planning Portal	commercial building of 9 storeys (incl. lower ground and basement level)	31/08/2022	12/10/2023		Office		New Build				32541			32541							12	11				Hoare Lea					Project 78	100%	1
Church street residential development London	Westminster	NW8 8EX	21/08160/COOUT	Planning Portal		23/11/2021	30/06/2023		Commercial & Residential		New Build				42683			42683							14	13				Max Fordham					Project 79	100%	1
Colechurch House	Southwark	SE1 2SX	20/AP/3013	Planning Portal	Erection of elevated 22-storey building, 4 storey basement, plant areas	12/10/2020			Office & Retail		New Build				48178			48178							26	22				Sweco					Project 80	100%	1
Cripplegate House 1 Golden Lane	City of London	EC1Y 0RR	22/00202/FULMAJ	Planning Portal	Heritage building: retained. 90s Refurbishment: floors, core and structure retained. Floors extended. Northern elevation replaced and others reclad. Roof Refurbishment.	28/03/2022	01/11/2022		Office	No	Light Refurbishment	1890s	Grade II	12989	15649	1443	20%	2588	No new basement	Steel		RC Cores / shear walls	RC Cores / shear walls		9	13	12	3	0	Hawkins Brown	London Structures		HawkinsBrown	One Click LCA	Project 81	11%	4

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Site name	Assessment Type	A-C carbon emi	Borough	Postcode	Planning reference	Data source	Description	Submission d	Decision date	Final decisior	Building typology	Chang	Classification	Existing bui	Listed stat	GIA existir	GIA new	GIA dem	GIA % in	GIA add	Basement kept, new structure	Existing stru	New structu	Existing stabili	New stabili	Loading tr	Existing	New stor	Above gr	Added :	Added :	Fire int	LCA author / Structural	MEP Engir	Architect	LCA So	Project Ref	%demoli	Class re	Unique na
1 Appold Street	Assessment 1 - no	644	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building. Retention and Refurl	12/12/2022		Pending	Office	Yes	Heavy Refurbishme	1980s	Not listed	28992	51869	12718	79%	35595	No new ba	Steel	Steel				10	16	14	6		Hilson Mora	AKT II	MTT	Piercy & Cor	One Cl	Project 1	44%	3	1 Appold StreetAssessment 1 - no decarbonisation
1 Exchange Squa	Assessment 1 - no	978	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurbishment and Refurbi	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishme	1990s	Not listed	49262	58903	0	20%	9641	No new ba						15	15	14			Sweco	Heyne Till	Sweco	Fletcher Pri	One Cl	Project 2	0%	3	1 Exchange Square LondonAssessment 1 - no decarbonisation
1 Museum Stree	Assessment 1 - no	1224	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High Holborn and 1 M	27/06/2023		Pending	Office & Retail	No	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and re	Reinforced C	Reinforced C				17	19	17	2		Scotch Partn	Heyne Till	Scotch Par	DSDHA	One Cl	Project 4	100%	1	1 Museum StreetAssessment 1 - no decarbonisation
1 Southwark Bri	Assessment 1 - no	535	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad. Façade and roof cov	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishmer	1980s	Not listed	18636	21363	0	15%	2727	No new ba	Reinforced C					7	8	8	1		Hurley Palm	Webb Yat	Hurley Pal	BDG archite	One Cl	Project 5	0%	4	1 Southwark Bridge RoadAssessment 1 - no decarbonisation
100 And 108 Fet	Assessment 1 - no	991	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and construction of a new bu	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced C				9	14	13	5		Waterman G	Waterman	Waterman	Fletcher Pri	One Cl	Project 8	100%	1	100 And 108 Fetter LaneAssessment 1 - no decarbonisation
100 Grays Inn R	Assessment 1 - no	993	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127 Clerkenwell Road	22/10/2022		Pending	Office	Yes	Heavy Refurbishme	1960s	Not listed	7893	12747	7893	61%	12747	No new ba	Reinforced C	Timber				9	12	11	3		Max Fordhar	Heyne Till	Max Fordh	Piercy & Cor	One Cl	Project 9	100%	2	100 Grays Inn RoadAssessment 1 - no decarbonisation
101 Whitechape	Assessment 1 - no	1423	Tower Hamlets	E1 7RA	PA/20/01272/R	Planning Portal	Demolition of 101 Whitechapel High Street, 2 ? 6 Commerc	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbishme	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13		Buro Happol	Buro Happ	Foster + Par	One Cl	Project 11	64%	3	101 Whitechapel High StreetAssessment 1 - no decarbonisation
115 - 123 Houn	Assessment 1 - no	635	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and construction of a new l	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22		Atelier Ten	AKT II	Norman, E	Allford Hall	One Cl	Project 12	100%	1	115 - 123 HoundsditchAssessment 1 - no decarbonisation
120 Fleet Street	Assessment 1 - no	753	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court building, part demolition	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbishme	1930s	Grade II*	58818	74065	54427	26%	69674	New and re	Steel				Minimal ir	7	23	21	1	21	chapmanbds	AKT II		chapmanb	Bjarke Ingels	One Cl	Project 13	93%	3	120 Fleet StreetAssessment 1 - no decarbonisation
14-21 Holborn V	Assessment 1 - no	841	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-21 Holborn Viaduct, 3	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure and/c	1920s	Not listed	16944	35948		112%	19004							11	15	13	4		Hilson Mora	Heyne Till	Hilson Mo	PLP Architec	eTool	Project 14	0%	2	14-21 Holborn ViaductAssessment 1 - no decarbonisation
1-5 Lower Marsl	Assessment 1 - no	1093	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing structure's 4th floor	02/02/2023		Pending	Office	No	New Build	1960s	Not listed	4927	6294	132	28%	1499	No new ba	Reinforced C	RC Cores / shea				6	8	7	2		Sweco	Davis Mag	Sweco	Fathom	One Cl	Project 15	3%	3	1-5 Lower Marsh Assessment 1 - no decarbonisation
15 Minories, 57	Assessment 1 - no	2211	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and erection of a mixed use	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New						14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Cl	Project 16	100%	1	15 Minories, 57-60 & 62 Aldgate High Street And 1 Little Somerset StreetAssessment 1 - no decarbonisation
15-17 Eldon Str	Assessment 1 - no	868	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldon Street facade. Refur	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbishme	1980s	Not listed	4161	5890	1009	42%	2738	No new ba	Reinforced C	Steel	RC Cores / shea	RC Cores / :	Load balar	7	11	9	4		Verte	Frankham	Butler and	Gort Scott		Project 17	24%	3	15-17 Eldon StreetAssessment 1 - no decarbonisation
166 High Holbo	Assessment 1 - no	1274	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 High Holborn and 1 M	27/06/2023		Pending	Commercial & Resi		New Build			0	493	0		493							5	6	6			Scotch Partn	Arup				Project 18	100%	1	166 High HolbornAssessment 1 - no decarbonisation
16A-18 West Ce	Assessment 1 - no	968	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave just the basement	27/06/2023		Pending	Residential (inc. stu	Yes	Substructure and/c	1900s	Not listed	2712	3247	1718	20%	2253	No new ba	Brickwork ar	Reinforced C	None			3	6	6	3		Scotch Partn	Arup	Hill	Scotch Par	DSDHA	Project 19	63%	2	16A-18 West Central StreetAssessment 1 - no decarbonisation
175 Bishopsgat	Assessment 1 - no	978	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to existing façade facing on	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishmer	1980s	Not listed	55000	58903	5500	7%	9403	No new ba	Reinforced C	Steel			Minimal ir	12	12	12			Sweco			Fletcher Pri		Project 20	10%	4	175 Bishopsgate/Exchange SquareAssessment 1 - no decarbonisation
18 Blackfriars R	Assessment 1 - no	1182	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Improvements to existing	05/07/2023			Office		New Build				116381			116381								48	48				Arup					Project 21	100%	1	18 Blackfriars Road - Office BuildingAssessment 1 - no decarbonisation
18 Blackfriars R	Assessment 1 - no	1399	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comprising of affordable r				Residential (inc. stu		New Build				19384			19384								25	25				Arup					Project 22	100%	1	18 Blackfriars Road - Paris BuildingAssessment 1 - no decarbonisation
18 Blackfriars R	Assessment 1 - no	1464	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podium (retail, leisure), 2 t	04/07/2023			Residential (inc. stu		New Build				39578			39578								42	40				Arup					Project 23	100%	1	18 Blackfriars Road - Stamford BuildingAssessment 1 - no decarbonisation
181 Talgarth Ro	Assessment 1 - no	623	Hammersmith a	W6 8DN	2021/0356?/FUL	Planning Portal	Currently clear site, erection of two buildings	04/11/2021	11/08/2022		Residential (inc. stu		New Build				16943			16943								16	16				Stroma					Project 24	100%	1	181 Talgarth RoadAssessment 1 - no decarbonisation
18-20 Savile Ro	Assessment 1 - no	1288	Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, excavation to deepen e	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and re	Reinforced C		RC Cores / shea	RC Cores / :		9	9	8	8		Norman, Dis	Elliot Woo	Norman, E	Fathom	One Cl		100%	1	18-20 Savile RowAssessment 1 - no decarbonisation
19-35 Baker Str	Assessment 1 - no	1095	Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at 19-35 Baker Street, 8	29/11/2016	27/03/2019	Granted	Office, Retail & Resi		New Build	1970s		20087	49561		147%	29474	New						10	9				Arup	AKT II	Arup	Hopkins Arc		Project 25	100%	1	19-35 Baker StreetAssessment 1 - no decarbonisation
19-35 Sylvan Gr	Assessment 1 - no	1054	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 storeys. Partial demoli	02/03/2023		Pending	Residential (inc. stu		Heavy Refurbishme	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry anc	Reinforced C	Moment frame	Cores and L	Load balar	2	36	35		36	Hoare Lea			TP Bennett		Project 26	80%	3	19-35 Sylvan GroveAssessment 1 - no decarbonisation
2 Trafalgar Wa	Assessment 1 - no		Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide a new mixed use buil	02/07/2020	30/06/2022		Residential (inc. stu		New Build				0				0								48	46									Project 29	100%	1	2 Trafalgar WayAssessment 1 - no decarbonisation
20 Giltspur Stre	Assessment 1 - no	797	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existing building. Infill Refi	12/09/2022	12/12/2022		Office	No	Heavy Refurbishme	2000s	Not listed	8734	11184	2024	28%	4474	No new ba	Steel	RC Cores / shea	RC Cores / :	Load balar		7	6	6		None r	Norman, Dis	Elliot Woo	Norman, E	Buckley Gra		Project 30	23%	3	20 Giltspur StreetAssessment 1 - no decarbonisation
216-220 Blackfri	Assessment 1 - no	671	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 basement levels,	03/11/2020	20/07/2022		Commercial & Resi		New Build				40097			40097								25	22				WSP					Project 31	100%	1	216-220 Blackfriars RoadAssessment 1 - no decarbonisation
2-3 Finsbury Av	Assessment 1 - no		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and new building with 3 ba	04/11/2020	19/08/2021		Office		New Build				105733			105733								40	37				Atelier Ten					Project 32	100%	1	2-3 Finsbury AvenueAssessment 1 - no decarbonisation
25 Mandela Wa	Assessment 1 - no	973	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4				ADW Develo					Project 33	100%	1	25 Mandela WayAssessment 1 - no decarbonisation
257-283 Ilderton	Assessment 1 - no	888	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 10-storey storage facili	09/05/2023			Residential (inc. stu		New Build				29541			29541								30	30				Atelier Ten					Project 34	100%	1	257-283 Ilderton RoadAssessment 1 - no decarbonisation
26 To 46 Lisson	Assessment 1 - no	1347	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure and/c	1960s	Not listed	6192	10624	4404	72%	8836	No new ba						5	8	7	3		Sweco					Project 35	71%	2	26 To 46 Lisson GroveAssessment 1 - no decarbonisation
302-312 Stratfo	Assessment 1 - no	856	London Legacy (	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and redevelopment of the :	16/03/2022	22/05/2023	Granted	Commercial & Resi	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27		Elementa	Meinhard	Meinhardt	Henley Hale	One Cl	Project 36	100%	1	302-312 Stratford High StreetAssessment 1 - no decarbonisation
330 Grays Inn R	Assessment 1 - no	1229	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with a two storey Refurbis	03/03/2023		Pending	Office, Retail & Resi	Yes	Heavy Refurbishme	1870s	Not listed	12811	35681	12097	179%	34967	New and re	Masonry anc	Reinforced C	RC Cores / shea	RC Cores / :	Load balar	3	2	5	2	15	XCO2	WSP		Allford Hall	One Cl	Project 37	94%	3	330 Grays Inn Road Assessment 1 - no decarbonisation
334-348 Oxford	Assessment 1 - no	974	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, and partial demolition	26/07/2021	01/03/2022	Granted	Office & Retail	No	Heavy Refurbishme	1970s	Not listed	33632	43040	0	28%	9408	New and re						8	11	10	3		Atelier Ten	AKT II	Atelier Tel	Allford Hall	One Cl	Project 38	0%	3	334-348 Oxford StreetAssessment 1 - no decarbonisation
38-42 Southwar	Assessment 1 - no	1286	Southwark	SE1 9EU	22/AP/4006	Planning Portal	Up to 4-storey building.	23/11/2022			Office		New Build				16870			16870								7	7				Arup					Project 40	100%	1	38-42 Southwark Bridge RoadAssessment 1 - no decarbonisation
38-70 Baker St	Assessment 1 - no	849	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & Resi	No	Substructure and/c	1950s	Not listed	19618	33223	19618	69%	33223	No new ba						7	10	9	3		Buro Happol					Project 41	100%	2	38-70 Baker StreetAssessment 1 - no decarbonisation
45 Hornsey Roa	Assessment 1 - no	895	Islington	N7 7DD	P2022/1943/FUL	Planning Portal	Demolition of existing building and structure and erection c	25/05/2022	18/07/2023		Residential (inc. stu		New Build				9983			9983								12	12				Energist					Project 42	100%	1	45 Hornsey RoadAssessment 1 - no decarbonisation
458 Oxford Stre	Assessment 1 - no	789	Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777								11	9				Arup	Arup	Arup	Pilbrow & Pa	One Cl	Project 43	100%	2	458 Oxford StreetAssessment 1 - no decarbonisation
47-50 Mark Lan	Assessment 1 - no	1071	City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and structures, retention o	21/12/2022	22/03/2023		Office	No	Substructure and/c	1960s	Not listed	16523	30218	16523	83%	30218	No new ba						11	11	11			GXN Innovat	AKT II	Atelier Ten	Orms Design	One Cl	Project 43	100%	2	47-50 Mark LaneAssessment 1 - no decarbonisation
55 Gracechurch	Assessment 1 - no	1093	City of London	EC3V 0EE	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New building with baseme	24/08/2020	26/01/2021		Office		New Build				33202			33202								32	29				TFT					Project 47	100%	1	55 Gracechurch StreetAssessment 1 - no decarbonisation
61 - 65 Holborn	Assessment 1 - no	1208	City of London	EC1A 2DE	21/00781/FULMAJ	Planning Portal	Erection of new ground plus 12-storey building with 2 base	13/09/2021	01/02/2022		Residential (inc. stu		New Build				20463			20463								14	12				Hodkinson					Project 48	100%	1	61 - 65 Holborn Viaduct London EC1A 2FDAssessment 1 - no decarbonisation
6-12 Verney Ro	Assessment 1 - no	1114	Southwark	SE16 3FN	23/AP/0948	Planning Portal	Up to 4-storey building.	05/04/2023			Industrial		New Build				20864			20864								4	4				Insignis					Project 49	100%	1	6-12 Verney RoadAssessment 1 - no decarbonisation
63 - 66 Coleman	Assessment 1 - no	770	City of London	EC2R 5AN	21/00694/FULMAJ	Planning Portal	Front façade retention	09/08/2021	14/12/2022		Office & Retail	No	Substructure and/c	1870s	Not listed	3851	5220	3851	36%	5220							8	10	9	2		FLATT	Heyne Till	FLATT	Emrys Archi	One Cl	Project 50	100%	2	63 - 66 Coleman StreetAssessment 1 - no decarbonisation
63 New Bond St	Assessment 1 - no	796	Westminster	W1S 1RJ	23/08027/FULL	Planning Portal	Alteration and extension of the existing buildings, including	20/11/2023	02/03/2024	Granted	Office & Retail	No	Heavy Refurbishme	1800s	Not listed	15079	18617		23%	3538	New and re	Masonry anc	Reinforced C	RC Cores / shea	RC Cores / :	Capacity e	7	4	6	4		Buro Happol	Buro Happ	Buro Happ	Foster + Par	One Cl		0%	3	63 New Bond StreetAssessment 1 - no decarbonisation
65 Gresham St	Assessment 1 - no	519	City of London	EC2V 7NQ	22/00848/FULMAJ	Planning Portal	Horizontal Refurbishment at 8th and 9th floor levels and th	07/09/2022		Pending	Office	No	Heavy Refurbishme	2000s	Not listed	41136	54290	0	32%	13154	No new ba						12	17	14	5	2	Longevity Pa	Buro Happ	Atelier Ten	Squire and F	One Cl	Project 51	0%	3	65 Gresham StAssessment 1 - no decarbonisation
7 Brannan Stre	Assessment 1 - no		Tower Hamlets	E14 9ZR													0				0														Project 52		0	7 Brannan StreetAssessment 1 - no decarbonisation
7 Millbank	Assessment 1 - no	1517	Westminster	SW1P 3JA	21/01508/FULL	Planning Portal		10/03/2021	08/02/2022		Office		New Build				19414			19414								10	8				Hilson Mora					Project 53	100%	1	7 MillbankAssessment 1 - no decarbonisation
70 Gracechurch	Assessment 1 - no	1773	City of London	EC3V 0XL	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New building with baseme	13/10/2020	29/09/2021		Office		New Build				60616			60616								37	33				TFT					Project 54	100%	1	70 Gracechurch StreetAssessment 1 - no decarbonisation
747-759 & 765 -	Assessment 1 - no	754	Southwark	SE15 1NZ	23/AP/1862	Planning Portal	Building A: 33 storeys + basement. B: 19 storeys. C- 15 store	03/07/2023			Residential (inc. stu		New Build				51386			51386								35	33				Whitecode					Project 55	100%	1	747-759 & 765-775 Old Kent RoadAssessment 1 - no decarbonisation
76-78 Upper Gr	Assessment 1 - no	663	Lambeth	SE1 9PZ	21/01142/FUL	Planning Portal	Refurbishment, partial demolition and Refurbishment of th	19/03/2021	23/12/2021		Office	No	Heavy Refurbishme	1980s	Grade II	27790	38840	5060	40%	16110	No new ba						6	7	6	1	4	Watkins Pay	Heyne Till	Watkins P	Allford Hall	One Cl	Project 56	18%	3	76-78 Upper GroundAssessment 1 - no decarbonisation
79-87 Westmins	Assessment 1 - no	872	Lambeth	SE1 7XT	20/03539/FUL	Planning Portal	Erection of ground plus 14-storey building and two baseme	13/10/2020			Hotel		New Build				8529			8529								16	14				Meinhardt					Project 57	100%	1	79-87 Westminster Bridge RoadAssessment 1 - no decarbonisation
8 - 12 New Brid	Assessment 1 - no	1551	City of London	EC4V 6AL	22/00622/FULMAJ	Planning Portal	Part demolition of Fleet House, full demolition of St Bride's	07/07/2022	31/01/2023		Office	No	Heavy Refurbishme	1950s	Not listed	5612	7810	1332	39%	3530	No new ba	Reinforced C	RC Cores / shea	RC Cores / :	Horizontal		8	11	10	1	11	Hoare Lea	AKT II	Hoare Lea	HOK Interna	One Cl	Project 58	24%	3	8 - 12 New Bridge StreetAssessment 1 - no decarbonisation
80 Charlotte St	Assessment 1 - no			W1T 4QS													0				0	Minimal ir													Project 60		0	80 Charlotte Street GalleryAssessment 1 - no decarbonisation
81-103 King's R	Assessment 1 - no	1247	Kensington and	SW3 4NX	PP/23/00968	Planning Portal	Demolition of existing building and redevelopment for new	07/02/2023			Office	No	New Build	1980s	Not listed	9790	16138	5831	65%	12179	No new ba						5	5	4			Ramboll	Robert Bir	Ramboll	Pilbrow & Pa	One Cl	Project 62	60%	2	81-103 King's RoadAssessment 1 - no decarbonisation
85 Gracechurch	Assessment 1 - no	1514	City of London	EC3V 0AA	22/01155/FULEIA	Planning Portal	Partial demolition of existing building (Gracechurch Street f	30/11/2022	11/10/2023	Granted	Office & Retail	No	Substructure and/c	1930s	Not listed	8035	37746	8035	370%	37746	New and re	Steel					10	37	33	27		Sweco	Robert Bir		Woods Bag		Project 63	100%	2	85 Gracechurch StreetAssessment 1 - no decarbonisation
88 Grays Inn Ro	Assessment 1 - no	562	Camden	WC1X 8AA	2022/4259/P	Planning Portal	Existing building is being retained and refurbished	11/10/2022			Commercial & Resi	Yes	Retrofit	1960s	Not listed	1280	1149	0	-10%	0	No new ba	Reinforced C					4	4	4	2		Max Fordhar	Heyne Till	Max Fordh	Piercy & Cor	One Cl	Project 64	0%	5	88 Grays Inn RoadAssessment 1 - no decarbonisation
90 Whitfield	Assessment 1 - no			W1T 4EZ													0				0														Project 66		0	90 Whitfield Assessment 1 - no decarbonisation
9-10 and 11 Ang	Assessment 1 - no	1247	City of London	EC2R 7BH	22/00860/FULMAJ	Planning Portal	Demolition of the existing buildings except 9-10 Angel Cour	08/09/2022	22/02/2023		Hotel		New Build				4878			4878								12	9				Greengage					Project 67	100%	1	9-10 and 11 Angel CourtAssessment 1 - no decarbonisation
99 City Road	Assessment 1 - no	987	Islington	EC1Y 9DD	P2023/1070/FUL	Planning Portal	Majority of original foundations kept, new façade, core and	17/04/2023			Office & Retail		Heavy Refurbishme	1990s	Not listed	21667	64873	8017	199%	51223				RC Cores / :			10	36	35		35	Twin and Ear					Project 68	37%	3	99 City RoadAssessment 1 - no decarbonisation
Apollo Business	Assessment 1 - no	642	Lewisham	SE8 5JE	DC/23/130258	Planning Portal	Mixed-use redevelopment of the site for a new building cor	02/02/2023			Commercial & Resi		New Build				23204			23204								27	26				Greengage					Project 69	100%	1	Apollo Business Centre, 158 Trundley's RoadAssessment 1 - no decarbonisation
Borough Triangl	Assessment 1 - no	846	Southwark	SE1 6BN	22/AP/3149	Planning Portal	Demolition of all existing buildings/structures, except 82 an	05/09/2022			Residential (inc. stu		New Build				93367			93367								46	46				Whitecode					Project 70	100%	1	Borough Triangle SiteAssessment 1 - no decarbonisation
Boundary House	Assessment 1 - no	1441	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and the erection of a baser	30/09/2021	19/07/2022		Hotel		New Build				11158			11158								15	14				Hoare Lea					Project 71	100%	1	Boundary House 7 - 17 Jewry Street London EC3N 2EXAssessment 1 - no decarbonisation
British Library E	Assessment 1 - no	1174	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and the erection of a baser	30/09/2021	19/07/2022		Hotel		New Build				11158			11158								15	14				Hoare Lea					Project 72	100%	1	British Library ExtensionAssessment 1 - no decarbonisation
Burgess Industri	Assessment 1 - no	793	Southwark	SE5 7TJ	21/AP/1342	Planning Portal	12 blocks of between 2-13 storeys	19/04/2021			Commercial & Resi		New Build				39696			39696								12	12				Waterman B					Project 73	100%	1	Burgess Industrial Park Parkhouse StreetAssessment 1 - no decarbonisation
Bury House - 31	Assessment 1 - no	1028	City of London	EC3A 5AR	20/00848/FULEIA	Planning Portal	The use of prefabricated structural and façade systems present	22/10/2020			Office & Retail		New Build				82400			82400								48	46				Hoare Lea					Project 74	100%	1	Bury House - 31 Bury StreetAssessment 1 - no decarbonisation
Buspace Studios	Assessment 1 - no	917	Kensington and	W10 5AP	PP/22/07709	Planning Portal	Erection of 2 buildings with groundfloor connection	23/11/2023			Commercial & Resi		New Build				9450			9450								6	5				XCO2					Project 75	100%	1	Buspace StudiosAssessment 1 - no decarbonisation
Canada Water D	Assessment 1 - no	1385	Southwark	SE16 7PJ	21/AP/2655	Planning Portal	Plot A1 and A2 share basements. Ground plus mezzanine ar	12/10/2022			Office		New Build				61551			61551								25	24				Atelier Ten					Project 76	100%	1	Canada Water Dockside Plot A1Assessment 1 - no decarbonisation
Canada Water D	Assessment 1 - no	1425	Southwark	SE16 7PJ	23/AP/0565	Planning Portal	Erection of 11-storey building with 1 basement level	12/10/2022			Office		New Build				35196			35196								12	11				Arup					Project 77	100%	1	Canada Water Dockside Plot A2Assessment 1 - no decarbonisation
Castle & Fitzroy	Assessment 1 - no	1107	Islington	EC2A 4UY	P2022/2893/FUL	Planning Portal	commercial building of 9 storeys (incl. lower ground and ba	31/08/2022	12/10/2023		Office		New Build				32541			32541								12	11				Hoare Lea					Project 78	100%	1	Castle & Fitzroy House 37 - 45 Paul StreetAssessment 1 - no decarbonisation
Church street re	Assessment 1 - no	1211	Westminster	NW8 8EX	21/08160/COOUT	Planning Portal		23/11/2021	30/06/2023		Commercial & Resi		New Build				42683			42683								14	13				Max Fordhar					Project 79	100%	1	Church street residential development LondonAssessment 1 - no decarbonisation
Colechurch Hou	Assessment 1 - no	1409	Southwark	SE1 2SX	20/AP/3013	Planning Portal	Erection of elevated 22-storey building, 4 storey basement,	12/10/2020			Office & Retail		New Build				48178			48178								26	22				Sweco					Project 80	100%	1	Colechurch HouseAssessment 1 - no decarbonisation
Cripplegate Hou	Assessment 1 - no	601	City of London	EC1Y 0RR	22/00202/FULMAJ	Planning Portal	Heritage building: retained. 90s Refurbishment: floors, core	28/03/2022	01/11/2022		Office	No	Light Refurbishmer	1890s	Grade II	12989	15649	1443	20%	2588	No new ba	Steel	RC Cores / shea	RC Cores / :			9	13	12	3		Hawkins Bro	London St		HawkinsBro	One Cl	Project 81	11%	4	Cripplegate House 1 Golden LaneAssessment 1 - no decarbonisation
Dyne House	Assessment 1 - no	1129	Haringey	N6 5EE	HGY/2023/0328	Planning Portal	Redevelopment of Dyne House, to include: 1) Retention, re	08/03/2023		Pending	School	No	Heavy Refurbishme	1960s	Not listed	3019	6216	925	106%	4122	New and re	Reinforced C	Timber and	RC Cores / :			6	6	5	4		AECOM	Expeditior	AECOM	Hopkins Arc	One Cl	Project 82	31%	3	Dyne HouseAssessment 1 - no decarbonisation
Edward Rudolph	Assessment 1 - no	602	Islington	WC1X 0

Site name	Sequestration	A1-A5 ca	Borough	Postcode	Planning reference n	Data source	Description	Submission d	Decision date	Final decis	Building typology	Chang	Classification	Existing	Listed statu	GIA existi	GIA new	GIA den	GIA s	% inc GIA	GIA add	Basement retention	Existing stru	New strı	Existing stal	New stabili	Loading treatm	Existing s	New s	Above g	Added	Added s	Fire in	LCA author / S	Structural e	MEP Engineer	Architect	LCA Softw	Project Ref	% demo	Class Ref
South Molton Triangle Rund	Excluding sequ	138	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Hotel	No	Light Refurbishment	1840s	Grade II	619	668	0	8%	49	New and retained b						5	5	5			Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 125	0%	4
South Molton Triangle Rund	Including sequ	138	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Hotel	No	Light Refurbishment	1840s	Grade II	619	668	0	8%	49	New and retained b						5	5	5			Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 125	0%	4
88 Grays Inn Road	Including sequ	190	Camden	WC1X 8AA	2022/4259/P	Planning Portal	Existing building is being retained and refurbished	11/10/2022			Commercial & Res	Yes	Retrofit	1960s	Not listed	1280	1149	0	-10%	0	No new basement	Reinforced (					4	4	4	2		Max Fordham	Heyne Tille	Max Fordham	Piercy & Comp	One Click	Project 64	0%	5
100 Grays Inn Road	Including sequ	221	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127 Clerkenwe	11/10/2022	the erection of a	Pending	Office & Retail	Yes	Substructure, comprising (or	1960s	Not listed	7893	12747	7893	61%	12747	No new basement	Reinforced (	Timber				9	12	11	3		Max Fordham	Heyne Tille	Max Fordham	Piercy & Comp	One Click	Project 9	100%	2
88 Grays Inn Road	Excluding sequ	225	Camden	WC1X 8AA	2022/4259/P	Planning Portal	Existing building is being retained and refurbished	11/10/2022			Commercial & Res	Yes	Retrofit	1960s	Not listed	1280	1149	0	-10%	0	No new basement	Reinforced (					4	4	4	2		Max Fordham	Heyne Tille	Max Fordham	Piercy & Comp	One Click	Project 64	0%	5
Solomons Passage	Including sequ	247	Southwark	SE15 3UH	20/AP/3285	Planning Portal	Block A: Erection of 7-storey building, Block B+C: Ere	07/12/2020	20/04/2022		Residential (inc. st	No	Substructure and/or Fi		Not listed	9678	13728	7498	42%	11548							6	6	6			Create					Project 121	77%	2
Solomons Passage	Excluding sequ	250	Southwark	SE15 3UH	20/AP/3285	Planning Portal	Block A: Erection of 7-storey building, Block B+C: Ere	07/12/2020	20/04/2022		Residential (inc. st	No	Substructure and/or Fi		Not listed	9678	13728	7498	42%	11548							6	6	6			Create					Project 121	77%	2
Buspace Studios	Including sequ	257	Kensington and (	W10 5AP	PP/22/07709	Planning Portal	Erection of 2 buildings with groundfloor connection	23/11/2023			Commercial & Res		New Build				9450			9450								6	5				XCO2					Project 75	100%	1
20 Giltspur Street	Including sequ	262	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existing building. In	12/09/2022	12/12/2022		Office	No	Heavy Refurbishment	2000s	Not listed	8734	11184	2024	28%	4474	No new basement	Steel	Steel	RC Cores / s	RC Cores / s	Load balancing	7	6	6		None	Norman Disne	Elliot Wooc	Norman, Disne	Buckley Gray Yo		Project 30	23%	3
65 Gresham St	Including sequ	264	City of London	EC2V 7NQ	22/00848/FULMAJ	Planning Portal	Horizontal Refurbishment at 8th and 9th floor levels	07/09/2022		Pending	Office	No	Heavy Refurbishment	2000s	Not listed	41136	54290	0	32%	13154	No new basement						12	17	14	5	2	Longevity Part	Buro Happ	Atelier Ten	Squire and Part	One Click	Project 51	0%	3
South Molton Triangle SMS	Including sequ	265	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Commercial & Res	Yes	Retrofit		Grade II		4628			4628	No new basement						6	6	5			Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 126		5
South Molton Triangle SMS	Excluding sequ	289	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Commercial & Res	Yes	Retrofit		Grade II		4628			4628	No new basement						6	6	5			Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 126		5
Cripplegate House 1 Golder	Including sequ	290	City of London	EC1Y 0RR	22/00202/FULMAJ	Planning Portal	Heritage building: retained. 90s Refurbishment: floo	28/03/2022	01/11/2022		Office	No	Light Refurbishment	1890s	Grade II	12989	15649	1443	20%	2588	No new basement		Steel	RC Cores / s	RC Cores / s		9	13	12	3		Hawkins Brow	London Str		HawkinsBrown	One Click	Project 81	11%	4
Cripplegate House 1 Golder	Excluding sequ	291	City of London	EC1Y 0RR	22/00202/FULMAJ	Planning Portal	Heritage building: retained. 90s Refurbishment: floo	28/03/2022	01/11/2022		Office	No	Light Refurbishment	1890s	Grade II	12989	15649	1443	20%	2588	No new basement		Steel	RC Cores / s	RC Cores / s		9	13	12	3		Hawkins Brow	London Str		HawkinsBrown	One Click	Project 81	11%	4
South Molton Triangle 40-4	Including sequ	291	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Hotel	Yes	Retrofit		Grade II		3140			3140	No new basement						6	6	5			Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 123		5
South Molton Triangle 40-4	Excluding sequ	297	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Hotel	Yes	Retrofit		Grade II		3140			3140	No new basement						6	6	5			Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 123		5
1 Southwark Bridge Road	Including sequ	312	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad. Façade and re	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishment	1980s	Not listed	18636	21363	0	15%	2727	No new basement	Reinforced (					7	8	8	1		Hurley Palmer	Webb Yate	Hurley Palmer	BDG architectu	One Click	Project 5	0%	4
65 Gresham St	Excluding sequ	324	City of London	EC2V 7NQ	22/00848/FULMAJ	Planning Portal	Horizontal Refurbishment at 8th and 9th floor levels	07/09/2022		Pending	Office	No	Heavy Refurbishment	2000s	Not listed	41136	54290	0	32%	13154	No new basement						12	17	14	5	2	Longevity Part	Buro Happ	Atelier Ten	Squire and Part	One Click	Project 51	0%	3
1 Southwark Bridge Road	Including sequ	346	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad. Façade and re	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishment	1980s	Not listed	18636	21363	0	15%	2727	No new basement	Reinforced (					7	8	8	1		Hurley Palmer	Webb Yate	Hurley Palmer	BDG architectu	One Click	Project 5	0%	4
Island Site Woolwich	Including sequ	351	Greenwich	SE18 6PF	22/3162/F	Planning Portal	The redevelopment (together with demolition and p	22/08/2022		Pending	Office, Retail & Re	Yes	Heavy Refurbishment	1880s	Grade II	12544	28528	2509	127%	18493	No new basement						5	8	7	3	6	Create				One Click	Project 93	20%	3
Waterloo Hub Hotel develo	Including sequ	359	Lambeth	SE1 7BJ	21/02475/FUL	Planning Portal	Partial demolition of existing hotel, six and seven stc	21/06/2021	28/10/2022		Hotel	No	Heavy Refurbishment		Not listed	5192	14125		172%	8933								13	13	1	13		Elementa					Project 139	0%	3
15-17 Eldon Street	Including sequ	365	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldon Street façade	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbishment	1980s	Not listed	4161	5890	1009	42%	2738	No new basement	Reinforced (	Steel	RC Cores / s	RC Cores / s	Load balancing	7	11	9	4		Verte	Frankham	Butler and You	Gort Scott		Project 17	24%	3
15-17 Eldon Street	Excluding sequ	372	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldon Street façade	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbishment	1980s	Not listed	4161	5890	1009	42%	2738	No new basement	Reinforced (	Steel	RC Cores / s	RC Cores / s	Load balancing	7	11	9	4		Verte	Frankham	Butler and You	Gort Scott		Project 17	24%	3
Waterloo Hub Hotel develo	Excluding sequ	372	Lambeth	SE1 7BJ	21/02475/FUL	Planning Portal	Partial demolition of existing hotel, six and seven stc	21/06/2021	28/10/2022		Hotel	No	Heavy Refurbishment		Not listed	5192	14125		172%	8933								13	13	1	13		Elementa					Project 139	0%	3
Island Site Woolwich	Excluding sequ	383	Greenwich	SE18 6PF	22/3162/F	Planning Portal	The redevelopment (together with demolition and p	22/08/2022		Pending	Office, Retail & Re	Yes	Heavy Refurbishment	1880s	Grade II	12544	28528	2509	127%	18493	No new basement						5	8	7	3	6	Create				One Click	Project 93	20%	3
20 Giltspur Street	Excluding sequ	387	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existing building. In	12/09/2022	12/12/2022		Office	No	Heavy Refurbishment	2000s	Not listed	8734	11184	2024	28%	4474	No new basement	Steel	Steel	RC Cores / s	RC Cores / s	Load balancing	7	6	6		None	Norman Disne	Elliot Wooc	Norman, Disne	Buckley Gray Yo		Project 30	23%	3
1 Appold Street	Including sequ	392	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building. Retention anc	12/12/2022		Pending	Office	Yes	Heavy Refurbishment	1980s	Not listed	28992	51869	12718	79%	35595	No new basement	Steel	Steel				10	16	14	6		Hilson Moran	AKT II	MTT	Piercy & Comp	One Click	Project 1	44%	3
The Yard Theatre	Including sequ	397	LLDC	E9 5EN	23/00283/FUL	Planning Portal	Partial demolition of buildings and the Refurbishme	17/07/2023		Pending	Commercial & Res	Yes	Heavy Refurbishment	2010s	Not listed	754	894	0	19%	140	No new basement	None	Steel	Bracing			2	2	2	2		Twin and Earth	Momentur	Ritchie and Da	Takero Shimaz	One Click	Project 133	0%	3
Royal Street Plot D	Including sequ	399	Lambeth	SE1 7LL	22/01206/EIAFUL	Planning Portal		21/04/2022			Office		New Build				52380			52380								15	14				Arup					Project 116	100%	1
Royal Mint Court - Seaman	Excluding sequ	401	Tower Hamlets	EC3N 4QN	PA/21/01327/A1	Planning Portal	Retain the Grade-II listed façades, therefore only ref	11/06/2021	10/02/2023		Office & Retail		Retrofit				8113			8113								4	4				Cundall					Project 113		5
100 Grays Inn Road	Excluding sequ	404	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127 Clerkenwe	11/10/2022	the erection of a	Pending	Office & Retail	Yes	Substructure, comprising (or	1960s	Not listed	7893	12747	7893	61%	12747	No new basement	Reinforced (	Timber				9	12	11	3		Max Fordham	Heyne Tille	Max Fordham	Piercy & Comp	One Click	Project 9	100%	2
Leconfield House	Including sequ	405	Westminster	W1J 5JB	23/02111/FUL	Planning Portal	Excavation to provide one additional basement leve	29/03/2023		Pending	Office & Retail	No	Heavy Refurbishment	1930s	Not listed	8757	10148	1452	16%	2843	New and retained b						9	10	8	1	8	Elliott Wood	Elliot Wooc	AECOM	EPR Architects	One Click	Project 99	17%	3
Burgess Industrial Park Park	Including sequ	406	Southwark	SE5 7TJ	21/AP/1342	Planning Portal	12 blocks of between 2-13 storeys	19/04/2021			Commercial & Res		New Build				39696			39696								12	12				Waterman Bu					Project 73	100%	1
1 Appold Street	Excluding sequ	415	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building. Retention anc	12/12/2022		Pending	Office	Yes	Heavy Refurbishment	1980s	Not listed	28992	51869	12718	79%	35595	No new basement	Steel	Steel				10	16	14	6		Hilson Moran	AKT II	MTT	Piercy & Comp	One Click	Project 1	44%	3
Leconfield House	Excluding sequ	415	Westminster	W1J 5JB	23/02111/FUL	Planning Portal	Excavation to provide one additional basement leve	29/03/2023		Pending	Office & Retail	No	Heavy Refurbishment	1930s	Not listed	8757	10148	1452	16%	2843	New and retained b						9	10	8	1	8	Elliott Wood	Elliot Wooc	AECOM	EPR Architects	One Click	Project 99	17%	3
Plot H1 Elephant Park	Excluding sequ	416	Southwark	SE17 1GD	21/AP/1819	Planning Portal	Erection of 17-storey building with basement and ro	24/05/2021			Office		New Build				63598			63598								18	17				HDR					Project 105	100%	1
Hyatt Place	Excluding sequ	418	Hillingdon	UB4 0JN	2385/APP/2022/2952	Planning Portal	Partial demolition of the existing building, followed b	27/09/2022		Pending	Hotel	Yes	Heavy Refurbishment	1960s	Not listed	9885	20372	1211	106%	11698							13	14	14	1		Love Design St	Engineeria	Woodcote Pov	Haptic	One Click	Project 91	12%	3
115 - 123 Houndsditch	Excluding sequ	421	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and construction of	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22		Atelier Ten	AKT II	Norman, Disne	Allford Hall Mo	One Click	Project 12	100%	1
181 Talgarth Road	Including sequ	422	Hammersmith ar	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two buildings	04/11/2021	11/08/2022		Residential (inc. st		New Build				16943			16943								16	16				Stroma					Project 24	100%	1
76-78 Upper Ground	Excluding sequ	423	Lambeth	SE1 9PZ	21/01142/FUL	Planning Portal	Refurbishment, partial demolition and Refurbishme	19/03/2021	23/12/2021		Office	No	New Build	1980s	Grade II	27790	38840	5060	40%	16110	No new basement						6	7	6	1	4	Watkins Payn	Heyne Tille	Watkins Payne	Allford Hall Mo	One Click	Project 56	18%	3
Burgess Industrial Park Park	Excluding sequ	423	Southwark	SE5 7TJ	21/AP/1342	Planning Portal	12 blocks of between 2-13 storeys	19/04/2021			Commercial & Res		New Build				39696			39696								12	12				Waterman Bu					Project 73	100%	1
Royal Mint Court – Johnson	Excluding sequ	425	Tower Hamlets	EC3N 4QN	PA/21/01327/A1	Planning Portal	refurbishment and restoration, grade II listed, New m	11/06/2021	elective	10/02/2023	Public health s	Office & Retail	Insulation to roof				5011			5011								5	5	4			Cundall					Project 112		5
Apollo Business Centre, 158	Including sequ	426	Lewisham	SE8 5JE	DC/23/130258	Planning Portal	Mixed-use redevelopment of the site for a new build	02/02/2023			Commercial & Res		New Build				23204			23204								27	26				Greengage					Project 69	100%	1
Poultry Market And Genera	Excluding sequ	429	City of London	EC1A 9LH	19/01343/FULEIA	Planning Portal	Part demolition, repair, refurbishment and Refurbis	19/12/2019	22/11/2022		Office	Yes	Heavy Refurbishment	1950s	Grade II	15617	43037	5466	176%	32886	New and retained b	Reinforced (		Load balancing			3	3	3	1		Arup				One Click	Project 108	35%	3
Apollo Business Centre, 158	Excluding sequ	433	Lewisham	SE8 5JE	DC/23/130258	Planning Portal	Mixed-use redevelopment of the site for a new build	02/02/2023			Commercial & Res		New Build				23204			23204								27	26				Greengage					Project 69	100%	1
181 Talgarth Road	Excluding sequ	438	Hammersmith ar	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two buildings	04/11/2021	11/08/2022		Residential (inc. st		New Build				16943			16943								16	16				Stroma					Project 24	100%	1
19-35 Sylvan Grove	Including sequ	442	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 storeys. Partial	02/03/2023		Pending	Residential (inc. st		Heavy Refurbishment	1920s	Not listed	2154	27476	1720	1176%	27042	New		Masonry an	Reinforc	Moment fra	Cores and b	Load balancing	2	36	35		36	Introba	Civic Engin		TP Bennett		Project 26	80%	3
Red Lion Court 46-48 Park S	Including sequ	446	Southwark	SE1 9EQ	22/AP/1602	Planning Portal	Basement retained and extended by an additional le	06/05/2022			Office	Yes	Substructure and/or Fi			17335	32965	17335	90%	32965								11	11				Arup					Project 110	100%	2
The Yard Theatre	Excluding sequ	451	LLDC	E9 5EN	23/00283/FUL	Planning Portal	Partial demolition of buildings and the Refurbishme	17/07/2023		Pending	Commercial & Res	Yes	Heavy Refurbishment	2010s	Not listed	754	894	0	19%	140	No new basement	None	Steel	Bracing			2	2	2	2		Twin and Earth	Momentur	Ritchie and Da	Takero Shimaz	One Click	Project 133	0%	3
19-35 Sylvan Grove	Excluding sequ	453	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 storeys. Partial	02/03/2023		Pending	Residential (inc. st		Heavy Refurbishment	1920s	Not listed	2154	27476	1720	1176%	27042	New		Masonry an	Reinforc	Moment fra	Cores and b	Load balancing	2	36	35		36	Introba	Civic Engin		TP Bennett		Project 26	80%	3
Poultry Market And Genera	Excluding sequ	456	City of London	EC1A 9LH	19/01343/FULEIA	Planning Portal	Part demolition, repair, refurbishment and Refurbis	19/12/2019	22/11/2022		Office	Yes	Heavy Refurbishment	1950s	Grade II	15617	43037	5466	176%	32886	New and retained b	Reinforced (		Load balancing			3	3	3	1		Arup				One Click	Project 108	35%	3
63 New Bond Street	Including sequ	457	Westminster	W1S 1RJ	23/08027/FULL	Planning Portal	Alteration and extension of the existing buildings, in	20/11/2023	02/03/2024	Granted	Office & Retail	No	Heavy Refurbishment	1800s	Not listed	15079	18617		23%	3538	New and retained b	Masonry an	Reinforc	RC Cores / s	RC Cores / s	Capacity enhar	7	4	6	4		Buro Happold	Buro Happ	Buro Happold	Foster + Partne	One Click		0	3
100 New Bridge Street	Excluding sequ	461	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment, 85% of RC wa	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishment	1990s	Not listed	20384	23393		15%	3009			Steel				11	12	11	1		Long and Part	Waterman	Long and Partr	Gensler	Sturgis Ca	Project 10	0%	4
63 New Bond Street	Excluding sequ	462	Westminster	W1S 1RJ	23/08027/FULL	Planning Portal	Alteration and extension of the existing buildings, in	20/11/2023	02/03/2024	Granted	Office & Retail	No	Heavy Refurbishment	1800s	Not listed	15079	18617		23%	3538	New and retained b	Masonry an	Reinforc	RC Cores / s	RC Cores / s	Capacity enhar	7	4	6	4		Buro Happold	Buro Happ	Buro Happold	Foster + Partne	One Click		0	3
330 Grays Inn Road	Including sequ	466	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with a two storey R	03/03/2023		Pending	Office, Retail & Re	Yes	Heavy Refurbishment	1870s	Not listed	12811	35681	12097	179%	34967	New and retained b	Masonry an	Reinforc	RC Cores / s	RC Cores / s	Load balancing	3	2	5	2	15	XCO2	WSP		Allford Hall Mo	One Click	Project 37	94%	3
330 Grays Inn Road	Excluding sequ	468	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with a two storey R	03/03/2023		Pending	Office, Retail & Re	Yes	Heavy Refurbishment	1870s	Not listed	12811	35681	12097	179%	34967	New and retained b	Masonry an	Reinforc	RC Cores / s	RC Cores / s	Load balancing	3	2	5	2	15	XCO2	WSP		Allford Hall Mo	One Click	Project 37	94%	3
1 Exchange Square London	Including sequ	469	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurbishment and	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishment	1990s	Not listed	49262	58903	0	20%	9641	No new basement						15	15	14			Sweco	Heyne Tille	Sweco	Fletcher Priest	One Click	Project 2	0%	3
175 Bishopsgate/Exchange	Including sequ	469	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to existing façade fa	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishment	1980s	Not listed	55000	58903	5500	7%	9403	No new basement	Reinforced (	Steel			Minimal interv	12	12	12			Sweco			Fletcher Priest		Project 20	10%	4
1 Exchange Square London	Excluding sequ	472	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurbishment and	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishment	1990s	Not listed	49262	58903	0	20%	9641	No new basement						15	15	14			Sweco	Heyne Tille	Sweco	Fletcher Priest	One Click	Project 2	0%	3
175 Bishopsgate/Exchange	Excluding sequ	472	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to existing façade fa	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishment	1980s	Not listed	55000	58903	5500	7%	9403	No new basement	Reinforced (	Steel			Minimal interv	12	12	12			Sweco			Fletcher Priest		Project 20	10%	4
Jubilee House	Excluding sequ	474	London Legacy D	E15 1AN	21/00483/FUL	Planning Portal	Application made under the provisions of the Town	13/10/2021	21/09/2022	Granted	Residential (inc. st		Heavy Refurbishment		Not listed	9586	32760	7570	242%	30744							6	39	38	33		eb7	Elliot Wooc	DSA	Allford Hall Mo	One Click	Project 95	79%	3
38-70 Baker Street	Including sequ	478	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & Res	No	Substructure and/or Fi	1950s	Not listed	19618	33223	19618	69%	33223	No new basement						7	10	9	3		Buro Happold					Project 40	100%	2
1-5 Lower Marsh	Excluding sequ	480	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing structure's 4t	02/02/2023		Pending	Office	No	Heavy Refurbishment	1990s	Not listed	4927	6294	132	28%	1499	No new basement	Reinforced (		RC Cores / s			6	8	7	2		Sweco	Davis Magi	Sweco	Fathom	One Click	Project 15	3%	3
Royal Street Plot C	Including sequ	486	Lambeth	SE1 7LL	22/01206/EIAFUL	Planning Portal		21/04/2022			Office		New Build				29022			29022								15	15				Arup					Project 115	100%	1
Royal Street Plot D	Including sequ	487	Lambeth	SE1 7LL	22/01206/EIAFUL	Planning Portal		21/04/2022			Office		New Build				52380			52380								15	14				Arup					Project 116	100%	1
South Molton Triangle Sout	Including sequ	487	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Office	No	Substructure and/or Fi	1920s	Not listed		13259			13259	New and retained b						11	11				Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 127		2
Buspace Studios	Excluding sequ	488	Kensington and (	W10 5AP	PP/22/07709	Planning Portal	Erection of 2 buildings with groundfloor connection	23/11/2023			Commercial & Res		New Build				9450			9450								6	5				XCO2					Project 75	100%	1
South Molton Triangle Sout	Excluding sequ	488	Westminster	W1K 5LF	22/04610/FULL	Planning Portal	Part demolition, excavation (including beneath Davi	08/07/2022	19/04/2023	Granted	Office	No	Substructure and/or Fi	1920s	Not listed		13259			13259	New and retained b						11	11				Twin and Earth	AKT II	Hoare Lea	Hopkins Archite	One Click	Project 127		2
79-87 Westminster Bridge F	Including sequ	508	Lambeth	SE1 7XT	20/03539/FUL	Planning Portal	Erection of ground plus 14-storey building and two b	13/10/2020			Hotel		New Build				8529			8529								16	14				Meinhardt					Project 57	100%	1
Castle & Fitzroy House 37 -	Including sequ	510	Islington	EC2A 4UY	P2022/2893/FUL	Planning Portal	commercial building of 9 storeys (incl. lower ground	31/08/2022	12/10/2023		Office		New Build				32541			32541								12	11				Hoare Lea					Project 78	100%	1
38-70 Baker Street	Excluding sequ	518	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & Res	No	Substructure and/or Fi	1950s	Not listed	19618	33223	19618	69%	33223	No new basement						7	10	9	3		Buro Happold					Project 40	100%	2
King's Place (Land at Harpe	Including sequ	521	Southwark	SE1 1JJ	23/AP/0479	Planning Portal	Demolition of existing buildings, part 5-11 storey bu	22/02/2023			Residential (inc. st		New Build				16036			16036								11	11				Scotch Partne					Project 98	100%	1
Red Lion Court 46-48 Park S	Excluding sequ	530	Southwark	SE1 9EQ	22/AP/1602	Planning Portal	Basement retained and extended by an additional le	06/05/2022			Office	Yes	Substructure and/or Fi			17335	32965	17335	90%	32965							11	11				Arup					Project 110	100%	2
257-283 Ilderton Road	Including sequ	533	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 10-storey storag	09/05/2023			Residential (inc. st		New Build				29541			29541								30	30				Atelier Ten					Project 34	100%	1
The Rex (Option 1)	Excluding sequ	534	Kingston	KT1 1QT	21/02313/FUL	Planning Portal	Recladding and internal reconfiguration of existing b	14/07/2021	02/08/2022	Granted	Commercial & Res	No	Heavy Refurbishment			3124	8822	1163	182%	6861							6	10	9	4		HTA Architect		HTA Architects	HTA Architects	eTool LCD	Project 132	37%	3
257-283 Ilderton Road	Excluding sequ	535	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 10-storey storag	09/05/2023			Residential (inc. st		New Build				29541			29541								30	30				Atelier Ten					Project 34	100%	1
16A-18 West Central Street	Including sequ	548	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave just the ba	22/08/2023	walls and slab (exis	Pending	Residential (inc. st	Yes	Substructure and/or Fi	1900s	Not listed	2712	3247	1718	20%	2253	No new basement	Brickwork ar	Reinforc	None			3	6	6	3		Scotch Partne	Heyne Tille	Scotch Partner	DSDHA		Project 19	63%	2
47-50 Mark Lane	Including sequ	549	City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and structures, rete	21/12/2022	22/03/2023		Office	No	Heavy Refurbishment	1960s	Not listed	16523	30218	16523	83%	30218	No new basement						11	11	11			GXN Innovatic	AKT II	Atelier Ten	Orms Designer	One Click	Project 43	100%

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Site name	Assessment Type	B1-B5 cl	Borough	Postcode	Planning reference	Data source	Description	Submission d	Decision date	Final decisic	Building typolc	Change (	Classification	Existing bu	Listed status	GIA exist	GIA new	GIA demo	GIA % int	GIA added	Basement retention	Existing stru	New structu	Existing stat	New stabilit	Loading tre	Existing	New st	Above	Added s	Added s	Fire inte	LCA author	Structural	MEP Engineer	Architect	LCA Softw	Project Ref	%demolish	Class Ref
1 Appold Street	Assessment 1 - no	195	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbishment	1980s	Not listed	28992	51869	12718	79%	35595	No new basement	Steel	Steel				10	16	14	6			Hilson Mora	AKT II	MTT	Piercy & Com	One Click L	Project 1	44%	3
1 Appold Street	Assessment 2 - decarbonisa		City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbishment	1980s	Not listed	28992	51869	12718	79%	35595	No new basement	Steel	Steel				10	16	14	6			Hilson Mora	AKT II	MTT	Piercy & Com	One Click L	Project 1	44%	3
1 Exchange Square L	Assessment 1 - no	402	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refur	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishment	1990s	Not listed	49262	58903	0	20%	9641	No new basement						15	15	14				Sweco	Heyne Tille	Sweco	Fletcher Pries	One Click L	Project 2	0%	3
1 Exchange Square L	Assessment 2 - dec	392	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refur	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishment	1990s	Not listed	49262	58903	0	20%	9641	No new basement						15	15	14				Sweco	Heyne Tille	Sweco	Fletcher Pries	One Click L	Project 2	0%	3
1 Museum Street	Assessment 1 - no	422	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and retained b	Reinforced C	Reinforced C				17	19	17	2			Scotch Partn	Heyne Tille	Scotch Partne	DSDHA	One Click L	Project 4	100%	1
1 Museum Street	Assessment 2 - decarbonisa		Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and retained b	Reinforced C	Reinforced C				17	19	17	2			Scotch Partn	Heyne Tille	Scotch Partne	DSDHA	One Click L	Project 4	100%	1
1 Southwark Bridge	Assessment 1 - no	142	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishment	1980s	Not listed	18636	21363	0	15%	2727	No new basement	Reinforced C					7	8	8	1			Hurley Palm	Webb Yate	Hurley Palme	BDG architect	One Click L	Project 5	0%	4
1 Southwark Bridge	Assessment 2 - dec	142	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishment	1980s	Not listed	18636	21363	0	15%	2727	No new basement	Reinforced C					7	8	8	1			Hurley Palm	Webb Yate	Hurley Palme	BDG architect	One Click L	Project 5	0%	4
100 And 108 Fetter	Assessment 1 - no	299	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and cor	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced C				9	14	13	5			Waterman C	Waterman	Waterman Gr	Fletcher Pries	One Click L	Project 8	100%	1
100 And 108 Fetter	Assessment 2 - dec	284	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and cor	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced C				9	14	13	5			Waterman C	Waterman	Waterman Gr	Fletcher Pries	One Click L	Project 8	100%	1
100 Grays Inn Road	Assessment 1 - no	384	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127-130 Well Road and the erection of Office & Retail (Class E) development comprising a	27/10/2022		Pending	Office & Retail	Yes	Heavy Refurbishment	1870s	Not listed	7893	12747	7893	61%	12747	No new basement	Reinforced C	Timber				9	12	11	3			Max Fordhar	Heyne Tille	Max Fordham	Piercy & Com	One Click L	Project 9	100%	2
100 Grays Inn Road	Assessment 2 - decarbonisa		Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127-130 Well Road and the erection of Office & Retail (Class E) development comprising a	27/10/2022		Pending	Office & Retail	Yes	Heavy Refurbishment	1870s	Not listed	7893	12747	7893	61%	12747	No new basement	Reinforced C	Timber				9	12	11	3			Max Fordhar	Heyne Tille	Max Fordham	Piercy & Com	One Click L	Project 9	100%	2
100 New Bridge Stre	Assessment 1 - no	420	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishment	1990s	Not listed	20384	23393		15%	3009		Steel					11	12	11	1			Long and Pa	Waterman	Long and Part	Gensler	Sturgis Car	Project 10	0%	4
100 New Bridge Stre	Assessment 2 - decarbonisa		City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishment	1990s	Not listed	20384	23393		15%	3009		Steel					11	12	11	1			Long and Pa	Waterman	Long and Part	Gensler	Sturgis Car	Project 10	0%	4
101 Whitechapel Hi	Assessment 1 - no	388	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbishment	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happol	Buro Happ	Buro Happold	Foster + Partn	One Click L	Project 11	64%	3
101 Whitechapel Hi	Assessment 2 - dec	388	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbishment	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happol	Buro Happ	Buro Happold	Foster + Partn	One Click L	Project 11	64%	3
115 - 123 Houndsdit	Assessment 1 - no	208	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and cc	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II	Norman, Dis	Allford Hall M	One Click L	Project 12	100%	1
115 - 123 Houndsdit	Assessment 2 - decarbonisa		City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and cc	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II	Norman, Dis	Allford Hall M	One Click L	Project 12	100%	1
120 Fleet Street	Assessment 1 - no	61	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court buil	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbishment	1930s	Grade II*	58818	74065	54427	26%	69674	New and retained b	Reinforced C	Steel		Minimal int		7	23	21	1	21		chapmanbds	AKT II	chapmanbdsg	Bjarke Ingels	One Click L	Project 13	93%	3
120 Fleet Street	Assessment 2 - dec	58	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court buil	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbishment	1930s	Grade II*	58818	74065	54427	26%	69674	New and retained b	Reinforced C	Steel		Minimal int		7	23	21	1	21		chapmanbds	AKT II	chapmanbdsg	Bjarke Ingels	One Click L	Project 13	93%	3
14-21 Holborn Viadu	Assessment 1 - no	144	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure and/or Fa	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Mora	Heyne Tille	Hilson Moran	PLP Architect	eTool LCD	Project 14	0%	2
14-21 Holborn Viadu	Assessment 2 - dec	144	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure and/or Fa	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Mora	Heyne Tille	Hilson Moran	PLP Architect	eTool LCD	Project 14	0%	2
1-5 Lower Marsh	Assessment 1 - no	579	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbishment	1990s	Not listed	4927	6294	132	28%	1499	No new basement	Reinforced C	RC Cores / sl				6	8	7	2			Sweco	Davis Mage	Sweco	Fathom	One Click L	Project 15	3%	3
1-5 Lower Marsh	Assessment 2 - decarbonisa		Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbishment	1990s	Not listed	4927	6294	132	28%	1499	No new basement	Reinforced C	RC Cores / sl				6	8	7	2			Sweco	Davis Mage	Sweco	Fathom	One Click L	Project 15	3%	3
15 Minories, 57-60 &	Assessment 1 - no	363	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and ex	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New							14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Click L	Project 16	100%	1
15 Minories, 57-60 &	Assessment 2 - dec	363	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and ex	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New							14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Click L	Project 16	100%	1
15-17 Eldon Street	Assessment 1 - no	477	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldo	09/04/2021	14/02/2023	Granted	Office	No	New Build	1980s	Not listed	4161	5890	1009	42%	2738	No new basement	Reinforced C	Steel	RC Cores / sl	RC Cores / sl	Load balanc	7	11	9	4			Verte	Frankham (	Butler and Yo	Gort Scott		Project 17	24%	3
15-17 Eldon Street	Assessment 2 - dec	431	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldo	09/04/2021	14/02/2023	Granted	Office	No	New Build	1980s	Not listed	4161	5890	1009	42%	2738	No new basement	Reinforced C	Steel	RC Cores / sl	RC Cores / sl	Load balanc	7	11	9	4			Verte	Frankham (	Butler and Yo	Gort Scott		Project 17	24%	3
166 High Holborn	Assessment 1 - no	410	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Commercial & I		New Build			0	493	0		493							6	6					Scotch Partn	Arup				Project 18	100%	1
166 High Holborn	Assessment 2 - decarbonisa		Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Commercial & I		New Build			0	493	0		493							6	6					Scotch Partn	Arup				Project 18	100%	1
16A-18 West Centra	Assessment 1 - no	337	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to le	27/06/2023		Pending	Residential (inc	Yes to	Substructure and/or Fa	1900s	Not listed	2712	3247	1718	20%	2253	No new basement	Brickwork an	Reinforced C	None			3	6	6	3			Scotch Partn	Heyne Tille	Scotch Partne	DSDHA		Project 19	63%	2
16A-18 West Centra	Assessment 2 - decarbonisa		Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to le	27/06/2023		Pending	Residential (inc	Yes to	Substructure and/or Fa	1900s	Not listed	2712	3247	1718	20%	2253	No new basement	Brickwork an	Reinforced C	None			3	6	6	3			Scotch Partn	Heyne Tille	Scotch Partne	DSDHA		Project 19	63%	2
175 Bishopsgate/Ex	Assessment 1 - no	402	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exi	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishment	1980s	Not listed	55000	58903	5500	7%	9403	No new basement	Reinforced C	Steel		Minimal int		12	12	12				Sweco			Fletcher Pries		Project 20	10%	4
175 Bishopsgate/Ex	Assessment 2 - dec	392	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exi	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishment	1980s	Not listed	55000	58903	5500	7%	9403	No new basement	Reinforced C	Steel		Minimal int		12	12	12				Sweco			Fletcher Pries		Project 20	10%	4
18 Blackfriars Road	Assessment 1 - no	395	Southwark	SE1 9UJ	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381								48	48					Arup					Project 21	100%	1
18 Blackfriars Road	Assessment 2 - decarbonisa		Southwark	SE1 9UJ	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381								48	48					Arup					Project 21	100%	1
18 Blackfriars Road	Assessment 1 - no	538	Southwark	SE1 9UJ	23/AP/1854	Planning Portal	22 storey building above podium com				Residential (inc		New Build				19384			19384								25	25					Arup					Project 22	100%	1
18 Blackfriars Road	Assessment 2 - decarbonisa		Southwark	SE1 9UJ	23/AP/1854	Planning Portal	22 storey building above podium com				Residential (inc		New Build				19384			19384								25	25					Arup					Project 22	100%	1
18 Blackfriars Road	Assessment 1 - no	556	Southwark	SE1 9UJ	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (inc		New Build				39578			39578								42	40					Arup					Project 23	100%	1
18 Blackfriars Road	Assessment 2 - decarbonisa		Southwark	SE1 9UJ	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (inc		New Build				39578			39578								42	40					Arup					Project 23	100%	1
181 Talgarth Road	Assessment 1 - no	150	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two b	04/11/2021	11/08/2022		Residential (inc		New Build				16943			16943								16	16					Stroma					Project 24	100%	1
181 Talgarth Road	Assessment 2 - dec	150	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two b	04/11/2021	11/08/2022		Residential (inc		New Build				16943			16943								16	16					Stroma					Project 24	100%	1
19-35 Baker Street	Assessment 1 - no decarbor		Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at	29/11/2016	27/03/2019	Granted	Office, Retail &		New Build	1970s		20087	49561		147%	29474	New						10	9					Arup	AKT II	Arup	Hopkins Archi		Project 25	100%	1
19-35 Baker Street	Assessment 2 - decarbonisa		Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at	29/11/2016	27/03/2019	Granted	Office, Retail &		New Build	1970s		20087	49561		147%	29474	New						10	9					Arup	AKT II	Arup	Hopkins Archi		Project 25	100%	1
18-20 Savile Row	Assessment 1 - no	381	Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, ex	16/05/2022	02/03/2024	Not granted	Office & Retail	No	Heavy Refurbishment	1950s	Not listed	7684	8724	7684	14%	8724	New and retained b	Reinforced C	Steel	RC Cores / sl	RC Cores / sl		9	9	8	8			Norman, Dis	Elliot Wood	Norman, Disn	Fathom	One Click L		100%	1
18-20 Savile Row	Assessment 2 - decarbonisa		Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, ex	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and retained b	Reinforced C	Steel	RC Cores / sl	RC Cores / sl		9	9	8	8			Norman, Dis	Elliot Wood	Norman, Disn	Fathom	One Click L		100%	1
19-35 Sylvan Grove	Assessment 1 - no	477	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (inc		Heavy Refurbishment	1920s	Not listed	2154	27476	1720	1176%	27042	New		Masonry and	Reinforced C	Moment fra	Cores and bi	Load balanc	2	36	35		36		Introba	Civic Engin		TP Bennett		Project 26	80%	3
19-35 Sylvan Grove	Assessment 2 - decarbonisa		Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (inc		New Build	1920s	Not listed	2154	27476	1720	1176%	27042	New		Masonry and	Reinforced C	Moment fra	Cores and bi	Load balanc	2	36	35		36		Introba	Civic Engin		TP Bennett		Project 26	80%	3
20 Giltspur Street	Assessment 1 - no	274	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	New Build	2000s	Not listed	8734	11184	2024	28%	4474	No new basement	Steel	Steel	RC Cores / sl	RC Cores / sl	Load balanc	7	6	6			None rec	Norman Disn	Elliot Wood	Norman, Disn	Buckley Gray	Project 30	23%	3
20 Giltspur Street	Assessment 2 - decarbonisa		City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	New Build	2000s	Not listed	8734	11184	2024	28%	4474	No new basement	Steel	Steel	RC Cores / sl	RC Cores / sl	Load balanc	7	6	6			None rec	Norman Disn	Elliot Wood	Norman, Disn	Buckley Gray	Project 30	23%	3
2 Trafalgar Way	Assessment 1 - no decarbor		Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide	02/07/2020	30/06/2022		Residential (inc		New Build								0							48	46										Project 29	100%	1
2 Trafalgar Way	Assessment 2 - decarbonisa		Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide	02/07/2020	30/06/2022		Residential (inc		New Build								0							48	46										Project 29	100%	1
2-3 Finsbury Avenue	Assessment 1 - no decarbor		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and n	04/11/2020	19/08/2021		Office		New Build				105733			105733								40	37					Atelier Ten					Project 32	100%	1
2-3 Finsbury Avenue	Assessment 2 - decarbonisa		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and n	04/11/2020	19/08/2021		Office		New Build				105733			105733								40	37					Atelier Ten					Project 32	100%	1
25 Mandela Way	Assessment 1 - no	198	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4					ADW Develc					Project 33	100%	1
25 Mandela Way	Assessment 2 - decarbonisa		Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4					ADW Develc					Project 33	100%	1
216-220 Blackfriars	Assessment 1 - no	57	Southwark	SE1 9UJ	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 baseme	03/11/2020	20/07/2022		Commercial & I		New Build				40097			40097								25	22					WSP					Project 31	100%	1
216-220 Blackfriars	Assessment 2 - dec	57	Southwark	SE1 9UJ	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 baseme	03/11/2020	20/07/2022		Commercial & I		New Build				40097			40097								25	22					WSP					Project 31	100%	1
26 To 46 Lisson Gro	Assessment 1 - no	426	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure and/or Fa	1960s	Not listed	6192	10624	4404	72%	8836	No new basement						5	8	7	3			Sweco					Project 35	71%	2
26 To 46 Lisson Gro	Assessment 2 - decarbonisa		Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure and/or Fa	1960s	Not listed	6192	10624	4404	72%	8836	No new basement						5	8	7	3			Sweco					Project 35	71%	2
257-283 Ilderton Ro	Assessment 1 - no	326	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (inc		New Build				29541			29541								30	30					Atelier Ten					Project 34	100%	1
257-283 Ilderton Ro	Assessment 2 - decarbonisa		Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (inc		New Build				29541			29541								30	30					Atelier Ten					Project 34	100%	1
330 Grays Inn Road	Assessment 1 - no	408	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with	03/03/2023		Pending	Office, Retail &	Yes	Heavy Refurbishment	1870s	Not listed	12811	35681	12097	179%	34967	New and retained b	Masonry and	Reinforced C	RC Cores / sl	RC Cores / sl	Load balanc	3	2	5	2	15		XCO2	WSP		Allford Hall M	One Click L	Project 37	94%	3
330 Grays Inn Road	Assessment 2 - decarbonisa		Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with	03/03/2023		Pending	Office, Retail &	Yes	Heavy Refurbishment	1870s	Not listed	12811	35681	12097	179%	34967	New and retained b	Masonry and	Reinforced C	RC Cores / sl	RC Cores / sl	Load balanc	3	2	5	2	15		XCO2	WSP		Allford Hall M	One Click L	Project 37	94%	3
334-348 Oxford Stre	Assessment 1 - no	330	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, ar	26/07/2021	01/03/2022	Granted	Office & Retail	No	Heavy Refurbishment	1970s	Not listed	33632	43040	0	28%	9408	New and retained b						8	11	10	3			Atelier Ten	AKT II	Atelier Ten	Allford Hall M	One Click L	Project 38	0%	3
334-348 Oxford Stre	Assessment 2 - dec	307	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, ar	26/07/2021	01/03/2022	Granted	Office & Retail	No	Heavy Refurbishment	1970s	Not listed	33632	43040	0	28%	9408	New and retained b						8	11	10	3			Atelier Ten	AKT II	Atelier Ten	Allford Hall M	One Click L	Project 38	0%	3
38-42 Southwark Br	Assessment 1 - no	423	Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870								7	7					Arup					Project 39	100%	1
38-42 Southwark Br	Assessment 2 - decarbonisa		Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870								7	7					Arup					Project 39	100%	1
302-312 Stratford H	Assessment 1 - no	317	London Legacy	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and re	16/03/2022	22/05/2023	Granted	Commercial & I	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27			Elementa	Meinhardt	Meinhardt	Henley Halebi	One Click L	Project 36	100%	1
302-312 Stratford H	Assessment 2 - decarbonisa		London Legacy	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and re	16/03/2022	22/05/2023	Granted	Commercial & I	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27			Elementa	Meinhardt	Meinhardt	Henley Halebi	One Click L	Project 36	100%	1
38-70 Baker Street	Assessment 1 - no	277	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & I	No	Substructure and/or Fa	1950s	Not listed	19618	33223	19618	69%	33223	No new basement						7	10	9	3			Buro Happol					Project 40	100%	2
38-70 Baker Street	Assessment 2 - decarbonisa		Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & I	No	Substructure and/or Fa	1950s	Not listed	19618	33223	19618	69%	33223	No new basement						7	10	9	3			Buro Happol					Project 40	100%	2
458 Oxford Street	Assessment 1 - no	211	Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777								11	9					Arup	Arup	Arup	Pilbrow & Par	One Click L	Project 42	100%	1
458 Oxford Street	Assessment 2 - decarbonisa		Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777								11	9					Arup	Arup	Arup	Pilbrow & Par	One Click L	Project 42	100%	1
47-50 Mark Lane	Assessment 1 - no	370	City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and st	21/12/2022	22/03/2023		Office	No	Substructure and/or Fa	1960s	Not listed	16523	30218	16523	83%	30218	No new basement						11	11	11				GXN Innovat	AKT II	Atelier Ten	Orms Designe	One Click L	Project 43	100%	2
47-50 Mark Lane	Assessment 2 - decarbonisa		City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and st	21/12/2022	22/03/2023		Office	No	Substructure and/or Fa	1960s	Not listed	16523	30218	16523	83%	30218	No new basement						11	11	11				GXN Innovat	AKT II	Atelier Ten	Orms Designe	One Click L	Project 43	100%	2
55 Gracechurch Stre	Assessment 1 - no	173	City of London	EC3V 0EE	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New	24/08/2020	26/01/2021		Office		New Build				33202			33202								32	29					TFT					Project 47	100%	1
55 Gracechurch Stre	Assessment 2 - dec	173	City of London	EC3V 0EE	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New	24/08/2020	26/01/2021		Office		New Build				33202			33202								32	29					TFT					Project 47	100%	1
45 Hornsey Road	Assessment 1 - no	47	Islington	N7 7DD	P2022/1943/FUL	Planning Port

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Site name	Assessment Type	B6-B7 ca	Borough	Postcode	Planning reference	Data source	Description	Submission d	Decision date	Final decisio	Building typo	Change	Classification	Existing bui	Listed statu	GIA existir	GIA new	GIA demo	GIA % inc	GIA adde	Basement	Existing struc	New structu	Existing sta	New stabili	Loading tre	Existing s	New stor	Above gro	Added st	Added st	Fire interv	LCA author / Sus	Structural en	MEP Engin	Architect	LCA Software	Project Ref	%demolis	Class Ref	%WLC
1 Appold Street	Assessment 1 - no c	214	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbis	1980s	Not listed	28992	51869	12718	79%	35595	No new ba	Steel	Steel				10	16	14	6			Hilson Moran	AKT II	MTT	Piercy & Compa	One Click LCA	Project 1	44%	3	25%
1 Appold Street	Assessment 2 - decarbonisat		City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbis	1980s	Not listed	28992	51869	12718	79%	35595	No new ba	Steel	Steel				10	16	14	6			Hilson Moran	AKT II	MTT	Piercy & Compa	One Click LCA	Project 1	44%	3	
1 Exchange Squa	Assessment 1 - no c	1346	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurl	27/10/2021	14/06/2023	Granted	Office & Reta	No	Heavy Refurbis	1990s	Not listed	49262	58903	0	20%	9641	No new ba					15	15	14				Sweco	Heyne Tillet S	Sweco	Fletcher Priest A	One Click LCA	Project 2	0%	3	58%
1 Exchange Squa	Assessment 2 - dec	392	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurl	27/10/2021	14/06/2023	Granted	Office & Reta	No	Heavy Refurbis	1990s	Not listed	49262	58903	0	20%	9641	No new ba					15	15	14				Sweco	Heyne Tillet S	Sweco	Fletcher Priest A	One Click LCA	Project 2	0%	3	31%
1 Museum Stree	Assessment 1 - no c	574	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Office & Reta	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and re	Reinforced C	Reinforced C				17	19	17	2			Scotch Partners	Heyne Tillet S	Scotch Part	DSDHA	One Click LCA	Project 4	100%	1	32%
1 Museum Stree	Assessment 2 - decarbonisat		Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Office & Reta	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and re	Reinforced C	Reinforced C				17	19	17	2			Scotch Partners	Heyne Tillet S	Scotch Part	DSDHA	One Click LCA	Project 4	100%	1	
1 Southwark Bric	Assessment 1 - no c	2157	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishr	1980s	Not listed	18636	21363	0	15%	2727	No new ba	Reinforced C					7	8	8	1			Hurley Palmer Fl	Webb Yates	Hurley Palm	BDG architectur	One Click LCA	Project 5	0%	4	80%
1 Southwark Bric	Assessment 2 - dec	565	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishr	1980s	Not listed	18636	21363	0	15%	2727	No new ba	Reinforced C					7	8	8	1			Hurley Palmer Fl	Webb Yates	Hurley Palm	BDG architectur	One Click LCA	Project 5	0%	4	51%
100 And 108 Fet	Assessment 1 - no c	801	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and con	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced C				9	14	13	5			Waterman Group	Waterman G	Waterman	Fletcher Priest A	One Click LCA	Project 8	100%	1	45%
100 And 108 Fet	Assessment 2 - dec	252	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and con	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced C				9	14	13	5			Waterman Group	Waterman G	Waterman	Fletcher Priest A	One Click LCA	Project 8	100%	1	21%
100 Grays Inn Rc	Assessment 1 - no c	660	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and	27/10/2022		Granted	Office & Reta	Yes	Heavy Refurbis	1870s	Not listed	7893	12747	7893	61%	12747	No new ba	Reinforced C	Timber				9	12	11	3			Max Fordham	Heyne Tillet S	Max Fordh	Piercy & Compa	One Click LCA	Project 9	100%	2	40%
100 Grays Inn Rc	Assessment 2 - decarbonisat		Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and	27/10/2022		Granted	Office & Reta	Yes	Heavy Refurbis	1870s	Not listed	7893	12747	7893	61%	12747	No new ba	Reinforced C	Timber				9	12	11	3			Max Fordham	Heyne Tillet S	Max Fordh	Piercy & Compa	One Click LCA	Project 9	100%	2	
100 New Bridge	Assessment 1 - no c	328	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Reta	No	Light Refurbishr	1990s	Not listed	20384	23393		15%	3009	Steel						11	12	11	1			Long and Partner	Waterman G	Long and P	Gensler	Sturgis Carbon	Project 10	0%	4	
100 New Bridge	Assessment 2 - decarbonisat		City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Reta	No	Light Refurbishr	1990s	Not listed	20384	23393		15%	3009	Steel						11	12	11	1			Long and Partner	Waterman G	Long and P	Gensler	Sturgis Carbon	Project 10	0%	4	
101 Whitechape	Assessment 1 - no c	1023	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbis	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happold	Buro Happol	Buro Happ	Foster + Partner	One Click LCA	Project 11	64%	3	42%
101 Whitechape	Assessment 2 - dec	304	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbis	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happold	Buro Happol	Buro Happ	Foster + Partner	One Click LCA	Project 11	64%	3	18%
115 - 123 Hound	Assessment 1 - no c	854	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and cc	19/07/2021	01/02/2022	Granted	Office & Reta	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II		Alford Hall Mor	One Click LCA	Project 12	100%	1	57%
115 - 123 Hound	Assessment 2 - decarbonisat		City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and cc	19/07/2021	01/02/2022	Granted	Office & Reta	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II	Norman, D	Alford Hall Mor	One Click LCA	Project 12	100%	1	
120 Fleet Street	Assessment 1 - no c	1321	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court buil	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbis	1930s	Grade II*	58818	74065	54427	26%	69674	New and re	Reinforced C	Steel			Minimal inte	7	23	21	1	21		chapmanbdsp	AKT II	chapmanbs	Bjarke Ingels Gr	One Click LCA	Project 13	93%	3	64%
120 Fleet Street	Assessment 2 - dec	346	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court buil	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbis	1930s	Grade II*	58818	74065	54427	26%	69674	New and re	Reinforced C	Steel			Minimal inte	7	23	21	1	21		chapmanbdsp	AKT II	chapmanbs	Bjarke Ingels Gr	One Click LCA	Project 13	93%	3	32%
14-21 Holborn V	Assessment 1 - no c	1347	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-:	03/09/2021	07/02/2022	Granted	Office & Reta	No	Substructure ar	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Moran	Heyne Tillet S	Hilson Mor	PLP Architecture	eTool LCD	Project 14	0%	2	62%
14-21 Holborn V	Assessment 2 - dec	927	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-:	03/09/2021	07/02/2022	Granted	Office & Reta	No	Substructure ar	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Moran	Heyne Tillet S	Hilson Mor	PLP Architecture	eTool LCD	Project 14	0%	2	52%
1-5 Lower Marsh	Assessment 1 - no c	331	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbis	1990s	Not listed	4927	6294	132	28%	1499	No new ba	Reinforced C		RC Cores / :			6	8	7	2			Sweco	Davis Maguir	Sweco	Fathom	One Click LCA	Project 15	3%	3	23%
1-5 Lower Marsh	Assessment 2 - decarbonisat		Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbis	1990s	Not listed	4927	6294	132	28%	1499	No new ba	Reinforced C		RC Cores / :			6	8	7	2			Sweco	Davis Maguir	Sweco	Fathom	One Click LCA	Project 15	3%	3	
15 Minories, 57-6	Assessment 1 - no c	644	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and er	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New							14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Click LCA	Project 16	100%	1	66%
15 Minories, 57-6	Assessment 2 - dec	312	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and er	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New							14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Click LCA	Project 16	100%	1	39%
15-17 Eldon Stre	Assessment 1 - no c	1103	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldor	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbis	1980s	Not listed	4161	5890	1009	42%	2738	No new ba	Reinforced C	Steel	RC Cores / :	RC Cores / s	Load balanc	7	11	9	4			Verte	Frankham Co	Butler and	Gort Scott		Project 17	24%	3	56%
15-17 Eldon Stre	Assessment 2 - decarbonisat		City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldor	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbis	1980s	Not listed	4161	5890	1009	42%	2738	No new ba	Reinforced C	Steel	RC Cores / :	RC Cores / s	Load balanc	7	11	9	4			Verte	Frankham Co	Butler and	Gort Scott		Project 17	24%	3	
166 High Holbor	Assessment 1 - no c	417	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Commercial é		New Build			0	493	0		493								6	6				Scotch Partners	Arup				Project 18	100%	1	25%
166 High Holbor	Assessment 2 - decarbonisat		Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Commercial é		New Build			0	493	0		493								6	6				Scotch Partners	Arup				Project 18	100%	1	
16A-18 West Ce	Assessment 1 - no c	644	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to le	27/06/2023		Pending	Residential (ir		Substructure ar	1900s	Not listed	2712	3247	1718	20%	2253	No new ba	Brickwork an	Reinforced C	None			3	6	6	3			Scotch Partners	Heyne Tillet S	Scotch Part	DSDHA		Project 19	63%	2	40%
16A-18 West Ce	Assessment 2 - decarbonisat		Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to le	27/06/2023		Pending	Residential (ir		Substructure ar	1900s	Not listed	2712	3247	1718	20%	2253	No new ba	Brickwork an	Reinforced C	None			3	6	6	3			Scotch Partners	Heyne Tillet S	Scotch Part	DSDHA		Project 19	63%	2	
175 Bishopsgate	Assessment 1 - no c	1346	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exis	04/04/2022	14/06/2023	Granted	Office & Reta	No	Light Refurbishr	1980s	Not listed	55000	58903	5500	7%	9403	No new ba	Reinforced C	Steel			Minimal inte	12	12	12				Sweco			Fletcher Priest A		Project 20	10%	4	58%
175 Bishopsgate	Assessment 2 - dec	312	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exis	04/04/2022	14/06/2023	Granted	Office & Reta	No	Light Refurbishr	1980s	Not listed	55000	58903	5500	7%	9403	No new ba	Reinforced C	Steel			Minimal inte	12	12	12				Sweco			Fletcher Priest A		Project 20	10%	4	24%
18 Blackfriars Ro	Assessment 1 - no c	603	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381							48	48					Arup				Project 21	100%	1	34%
18 Blackfriars Ro	Assessment 2 - decarbonisat		Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381							48	48					Arup				Project 21	100%	1	
18 Blackfriars Ro	Assessment 1 - no c	696	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium com				Residential (ir		New Build				19384			19384							25	25					Arup				Project 22	100%	1	33%
18 Blackfriars Ro	Assessment 2 - decarbonisat		Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium com				Residential (ir		New Build				19384			19384							25	25					Arup				Project 22	100%	1	
18 Blackfriars Ro	Assessment 1 - no c	714	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (ir		New Build				39578			39578							42	40					Arup				Project 23	100%	1	33%
18 Blackfriars Ro	Assessment 2 - decarbonisat		Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (ir		New Build				39578			39578							42	40					Arup				Project 23	100%	1	
181 Talgarth Roa	Assessment 1 - no c	1184	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bu	04/11/2021	11/08/2022		Residential (ir		New Build				16943			16943							16	16					Stroma				Project 24	100%	1	66%
181 Talgarth Roa	Assessment 2 - dec	374	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bu	04/11/2021	11/08/2022		Residential (ir		New Build				16943			16943							16	16					Stroma				Project 24	100%	1	39%
18-20 Savile Row	Assessment 1 - no c	152	Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, exc	16/05/2022	02/03/2024	Not granted	Office & Reta	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and re	Reinforced C	Steel	RC Cores / :	RC Cores / s		9	9	8	8			Norman, Disney &	Elliot Wood	Norman, D	Fathom	One Click LCA		100%	1	0.105556
18-20 Savile Row	Assessment 2 - decarbonisat		Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, exc	16/05/2022	02/03/2024	Not granted	Office & Reta	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and re	Reinforced C	Steel	RC Cores / :	RC Cores / s		9	9	8	8			Norman, Disney &	Elliot Wood	Norman, D	Fathom	One Click LCA		100%	1	
19-35 Baker Stre	Assessment 1 - no decarboni		Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at	29/11/2016	27/03/2019	Granted	Office, Retail		New Build	1970s		20087	49561		147%	29474	New						10	9					Arup	AKT II	Arup	Hopkins Archite		Project 25	100%	1	
19-35 Baker Stre	Assessment 2 - decarbonisat		Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at	29/11/2016	27/03/2019	Granted	Office, Retail		New Build	1970s		20087	49561		147%	29474	New						10	9					Arup	AKT II	Arup	Hopkins Archite		Project 25	100%	1	
19-35 Sylvan Grc	Assessment 1 - no c	375	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (ir		Heavy Refurbis	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry and	Reinforced C	Moment fr	Cores and b	Load balanc	2	36	35		36		Introba	Civic Enginee		TP Bennett		Project 26	80%	3	26%
19-35 Sylvan Grc	Assessment 2 - decarbonisat		Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (ir		Heavy Refurbis	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry and	Reinforced C	Moment fr	Cores and b	Load balanc	2	36	35		36		Introba	Civic Enginee		TP Bennett		Project 26	80%	3	
2 Trafalgar Way	Assessment 1 - no decarboni		Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide :	02/07/2020	30/06/2022		Residential (ir		New Build					0										48	46									Project 29	100%	1	
2 Trafalgar Way	Assessment 2 - decarbonisat		Tower Hamlets	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide :	02/07/2020	30/06/2022		Residential (ir		New Build					0										48	46									Project 29	100%	1	
20 Giltspur Stree	Assessment 1 - no c	1560	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	Heavy Refurbis	2000s	Not listed	8734	11184	2024	28%	4474	No new ba	Steel	Steel	RC Cores / :	RC Cores / s	Load balanc	7	6	6		None requ		Norman Disney &	Elliot Wood	Norman, D	Buckley Gray Ye		Project 30	23%	3	66%
20 Giltspur Stree	Assessment 2 - decarbonisat		City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	Heavy Refurbis	2000s	Not listed	8734	11184	2024	28%	4474	No new ba	Steel	Steel	RC Cores / :	RC Cores / s	Load balanc	7	6	6		None requ		Norman Disney &	Elliot Wood	Norman, D	Buckley Gray Ye		Project 30	23%	3	
216-220 Blackfri	Assessment 1 - no c	3296	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 baseme	03/11/2020	20/07/2022		Commercial é		New Build				40097			40097							25	22					WSP					Project 31	100%	1	83%
216-220 Blackfri	Assessment 2 - dec	1954	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 baseme	03/11/2020	20/07/2022		Commercial é		New Build				40097			40097							25	22					WSP					Project 31	100%	1	74%
2-3 Finsbury Ave	Assessment 1 - no decarboni		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and ne	04/11/2020	19/08/2021		Office		New Build				105733			105733							40	37					Atelier Ten					Project 32	100%	1	
2-3 Finsbury Ave	Assessment 2 - decarbonisat		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and ne	04/11/2020	19/08/2021		Office		New Build				105733			105733							40	37					Atelier Ten					Project 32	100%	1	
25 Mandela Way	Assessment 1 - no c	327	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118							4	4					ADW Developme					Project 33	100%	1	25%
25 Mandela Way	Assessment 2 - decarbonisat		Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118							4	4					ADW Developme					Project 33	100%	1	
257-283 Ilderton	Assessment 1 - no c	259	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (ir		New Build				29541			29541							30	30					Atelier Ten					Project 34	100%	1	23%
257-283 Ilderton	Assessment 2 - decarbonisat		Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (ir		New Build				29541			29541							30	30					Atelier Ten					Project 34	100%	1	
26 To 46 Lisson (	Assessment 1 - no c	883	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Reta	No	Substructure ar	1960s	Not listed	6192	10624	4404	72%	8836	No new ba						5	8	7	3			Sweco					Project 35	71%	2	40%
26 To 46 Lisson (	Assessment 2 - decarbonisat		Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Reta	No	Substructure ar	1960s	Not listed	6192	10624	4404	72%	8836	No new ba						5	8	7	3			Sweco					Project 35	71%	2	
302-312 Stratfor	Assessment 1 - no c	1168	London Legacy	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and re	16/03/2022	22/05/2023	Granted	Commercial é	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27			Elementa	Meinhardt	Meinhardt	Henley Halebro	One Click LCA	Project 36	100%	1	58%
302-312 Stratfor	Assessment 2 - decarbonisat		London Legacy	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and re	16/03/2022	22/05/2023	Granted	Commercial é	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27			Elementa	Meinhardt	Meinhardt	Henley Halebro	One Click LCA	Project 36	100%	1	
330 Grays Inn Rc	Assessment 1 - no c	1216	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with :	03/03/2023		Pending	Office, Retail	Yes	Heavy Refurbis	1870s	Not listed	12811	35681	12097	179%	34967	New and re	Masonry and	Reinforced C	RC Cores / :	RC Cores / s	Load balanc	3	2	5	2	15		XCO2	WSP		Allford Hall Mor	One Click LCA	Project 37	94%	3	50%
330 Grays Inn Rc	Assessment 2 - decarbonisat		Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with :	03/03/2023		Pending	Office, Retail	Yes	Heavy Refurbis	1870s	Not listed	12811	35681	12097	179%	34967	New and re	Masonry and	Reinforced C	RC Cores / :	RC Cores / s	Load balanc	3	2	5	2	15		XCO2	WSP		Allford Hall Mor	One Click LCA	Project 37	94%	3	
334-348 Oxford :	Assessment 1 - no c	2843	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, ar	26/07/2021	01/03/2022	Granted	Office & Reta	No	Heavy Refurbis	1970s	Not listed	33632	43040	0	28%	9408	New and re						8	11	10	3			Atelier Ten	AKT II	Atelier Ten	Alford Hall Mor	One Click LCA	Project 38	0%	3	74%
334-348 Oxford :	Assessment 2 - dec	1364	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, ar	26/07/2021	01/03/2022	Granted	Office & Reta	No	Heavy Refurbis	1970s	Not listed	33632	43040	0	28%	9408	New and re						8	11	10	3			Atelier Ten	AKT II	Atelier Ten	Alford Hall Mor	One Click LCA	Project 38	0%	3	59%
38-42 Southwar	Assessment 1 - no c	556	Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870							7	7					Arup					Project 39	100%	1	30%
38-42 Southwar	Assessment 2 - decarbonisat		Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870							7	7					Arup					Project 39	100%	1	
38-70 Baker Stre	Assessment 1 - no c	899	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial é	No	Substructure ar	1950s	Not listed	19618	33223	19618	69%	33223	No new ba						7	10	9	3			Buro Happold					Project 40	100%	2	51%
38-70 Baker Stre	Assessment 2 - decarbonisat		Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial é	No	Substructure ar	1950s	Not listed	19618	33223	19618	69%	33223	No new ba						7	10	9	3			Buro Happold					Project 40	100%	2	
45 Hornsey Roac	Assessment 1 - no c	743	Islington	N7 7DD	P2022/1943/FUL	Planning Portal	Demolition of existing building and stn	25/05/2022	18/07/2023		Residential (ir		New Build				9983			9983							12	12					Energist					Project 41	100%	1	45%
45 Hornsey Roac	Assessment 2 - dec	410	Islington	N7 7DD	P2022/1943/FUL	Planning Portal	Demolition of existing building and stn	25/05/2022	18/07/2023		Residential (ir		New Build				9983			9983							12	12					Energist					Project 41	100%	1	31%
458 Oxford Stre	Assessment 1 - no c	1333	Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777							11	9					Arup	Arup	Arup	Pilbrow & Partn	One Click LCA	Project 42	100%	1	63%
458 Oxford Stre	Assessment 2 - decarbonisat		Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777							11	9					Arup	Arup	Arup	Pilbrow & Partn	One Click LCA	Project 42	100%	1	
47-50 Mark Lane	Assessment 1 - no c	119	City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and st	21/12/2022	22/03/2023		Office	No	Substructure ar	1960s	Not listed	16523	30218	16523	83%	30218	No new ba							11	11	11			GXN Innovation	AKT II	Atelier Ten	Orms Designers	One Click LCA	Project 43	100%	2	10%
47-50 Mark Lane	Assessment 2 - decarbonisat		City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and st	21/12/

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Site name	Building element	Carbon er	Borough	Postcode	Planning reference	Data source	Description	Submission d	Decision date	Final decisic	Building typolo	Change	Classification	Existing b	Listed status	GIA existi	GIA new	GIA demol	GIA % in	GIA adde	Basement ret	Existing struc	New structu	Existing stal	New stabilit	Loading treat	Existing st	New sto	Above gr	Added s	Added s	Fire interve	LCA author	Structural engir	MEP Engineer	Architect	LCA Softwar	Project Ref	%demolis	Column2	
1 Appold Street	Substructure 1.1	16	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbish	1980s	Not listed	28992	51869	12718	79%	35595	No new baser	Steel	Steel				10	16	14	6			Hilson Mor	AKT II		MTT	Piercy & Comp	One Click LC	Project 1	44%	3	
1 Appold Street	Superstructure 2.1	185	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbish	1980s	Not listed	28992	51869	12718	79%	35595	No new baser	Steel	Steel				10	16	14	6			Hilson Mor	AKT II		MTT	Piercy & Comp	One Click LC	Project 1	44%	3	
1 Appold Street	Superstructure 2.4	127	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbish	1980s	Not listed	28992	51869	12718	79%	35595	No new baser	Steel	Steel				10	16	14	6			Hilson Mor	AKT II		MTT	Piercy & Comp	One Click LC	Project 1	44%	3	
1 Exchange Square Lond	Substructure 1.1	0	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurt	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbish	1990s	Not listed	49262	58903	0	20%	9641	No new baser						15	15	14				Sweco	Heyne Tillet Ste	Sweco	Fletcher Priest .	One Click LC	Project 2	0%	3	
1 Exchange Square Lond	Superstructure 2.1	143	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurt	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbish	1990s	Not listed	49262	58903	0	20%	9641	No new baser						15	15	14				Sweco	Heyne Tillet Ste	Sweco	Fletcher Priest .	One Click LC	Project 2	0%	3	
1 Exchange Square Lond	Superstructure 2.4	101	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurt	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbish	1990s	Not listed	49262	58903	0	20%	9641	No new baser						15	15	14				Sweco	Heyne Tillet Ste	Sweco	Fletcher Priest .	One Click LC	Project 2	0%	3	
1 Museum Street	Substructure 1.1	74	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and reta	Reinforced C	Reinforced C				17	19	17	2			Scotch Part	Heyne Tillet Ste	Scotch Partners	DSDHA	One Click LC	Project 4	100%	1	
1 Museum Street	Superstructure 2.1	342	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and reta	Reinforced C	Reinforced C				17	19	17	2			Scotch Part	Heyne Tillet Ste	Scotch Partners	DSDHA	One Click LC	Project 4	100%	1	
1 Museum Street	Superstructure 2.4	101	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and reta	Reinforced C	Reinforced C				17	19	17	2			Scotch Part	Heyne Tillet Ste	Scotch Partners	DSDHA	One Click LC	Project 4	100%	1	
1 Southwark Bridge Roa	Substructure 1.1	6	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishm	1980s	Not listed	18636	21363	0	15%	2727	No new baser	Reinforced C					7	8	8	1			Hurley Palr	Webb Yates	Hurley Palmer F	BDG architectu	One Click LC	Project 5	0%	4	
1 Southwark Bridge Roa	Superstructure 2.1	98	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishm	1980s	Not listed	18636	21363	0	15%	2727	No new baser	Reinforced C					7	8	8	1			Hurley Palr	Webb Yates	Hurley Palmer F	BDG architectu	One Click LC	Project 5	0%	4	
1 Southwark Bridge Roa	Superstructure 2.4	106	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Exising building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishm	1980s	Not listed	18636	21363	0	15%	2727	No new baser	Reinforced C					7	8	8	1			Hurley Palr	Webb Yates	Hurley Palmer F	BDG architectu	One Click LC	Project 5	0%	4	
100 And 108 Fetter Lane	Superstructure 2.1	206	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and con	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced C				9	14	13	5			Waterman	Waterman Grou	Waterman Grou	Fletcher Priest .	One Click LC	Project 8	100%	1	
100 And 108 Fetter Lane	Superstructure 2.4	54	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and con	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced C				9	14	13	5			Waterman	Waterman Grou	Waterman Grou	Fletcher Priest .	One Click LC	Project 8	100%	1	
100 Grays Inn Road	Substructure 1.1	72	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and	27/08/2022		Pending	Office & Retail	Yes	Heavy Refurbish	1900s	Not listed	7893	12747	7893	61%	12747	No new baser	Reinforced C	Timber				9	12	11	3			Max Fordh	Heyne Tillet Ste	Max Fordham	Piercy & Comp	One Click LC	Project 9	100%	2	
100 Grays Inn Road	Superstructure 2.1	84	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and	27/08/2022		Pending	Office & Retail	Yes	Heavy Refurbish	1900s	Not listed	7893	12747	7893	61%	12747	No new baser	Reinforced C	Timber				9	12	11	3			Max Fordh	Heyne Tillet Ste	Max Fordham	Piercy & Comp	One Click LC	Project 9	100%	2	
100 Grays Inn Road	Superstructure 2.4	48	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and	27/08/2022		Pending	Office & Retail	Yes	Heavy Refurbish	1900s	Not listed	7893	12747	7893	61%	12747	No new baser	Reinforced C	Timber				9	12	11	3			Max Fordh	Heyne Tillet Ste	Max Fordham	Piercy & Comp	One Click LC	Project 9	100%	2	
100 New Bridge Street	Substructure 1.1	0	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishm	1990s	Not listed	20384	23393		15%	3009		Steel					11	12	11	1			Long and P	Waterman Grou	Long and Partne	Gensler	Sturgis Carbo	Project 10	0%	4	
100 New Bridge Street	Superstructure 2.1	108	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishm	1990s	Not listed	20384	23393		15%	3009		Steel					11	12	11	1			Long and P	Waterman Grou	Long and Partne	Gensler	Sturgis Carbo	Project 10	0%	4	
100 New Bridge Street	Superstructure 2.4	111	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishm	1990s	Not listed	20384	23393		15%	3009		Steel					11	12	11	1			Long and P	Waterman Grou	Long and Partne	Gensler	Sturgis Carbo	Project 10	0%	4	
101 Whitechapel High St	Substructure 1.1	325	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbish	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happ	Buro Happold	Buro Happold	Foster + Partne	One Click LC	Project 11	64%	3	
101 Whitechapel High St	Superstructure 2.1	219	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbish	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happ	Buro Happold	Buro Happold	Foster + Partne	One Click LC	Project 11	64%	3	
101 Whitechapel High St	Superstructure 2.4	189	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbish	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happ	Buro Happold	Buro Happold	Foster + Partne	One Click LC	Project 11	64%	3	
115 - 123 Houndsditch	Substructure 1.1	110	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and cc	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II		Norman, Disney	Allford Hall Mo	One Click LC	Project 12	100%	1	
115 - 123 Houndsditch	Superstructure 2.1	122	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and cc	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II		Norman, Disney	Allford Hall Mo	One Click LC	Project 12	100%	1	
115 - 123 Houndsditch	Superstructure 2.4	36	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and cc	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II		Norman, Disney	Allford Hall Mo	One Click LC	Project 12	100%	1	
120 Fleet Street	Substructure 1.1	30	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court builc	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbish	1930s	Grade II*	58818	74065	54427	26%	69674	New and reta	Reinforced C	Steel		Minimal inten		7	23	21	1	21		chapmanb	AKT II		chapmanbdsp	Bjarke Ingels Gi	One Click LC	Project 13	93%	3	
120 Fleet Street	Superstructure 2.1	440	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court builc	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbish	1930s	Grade II*	58818	74065	54427	26%	69674	New and reta	Reinforced C	Steel		Minimal inten		7	23	21	1	21		chapmanb	AKT II		chapmanbdsp	Bjarke Ingels Gi	One Click LC	Project 13	93%	3	
120 Fleet Street	Superstructure 2.4	165	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court builc	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbish	1930s	Grade II*	58818	74065	54427	26%	69674	New and reta	Reinforced C	Steel		Minimal inten		7	23	21	1	21		chapmanb	AKT II		chapmanbdsp	Bjarke Ingels Gi	One Click LC	Project 13	93%	3	
14-21 Holborn Viaduct	Substructure 1.1	142	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-;	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure an	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Mor	Heyne Tillet Ste	Hilson Moran	PLP Architectur	eTool LCD	Project 14	0%	2	
14-21 Holborn Viaduct	Superstructure 2.1	316	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-;	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure an	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Mor	Heyne Tillet Ste	Hilson Moran	PLP Architectur	eTool LCD	Project 14	0%	2	
14-21 Holborn Viaduct	Superstructure 2.4	159	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-;	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure an	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Mor	Heyne Tillet Ste	Hilson Moran	PLP Architectur	eTool LCD	Project 14	0%	2	
1-5 Lower Marsh	Substructure 1.1	4	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbish	1990s	Not listed	4927	6294	132	28%	1499	No new baser	Reinforced C		RC Cores / s			6	8	7	2			Sweco	Davis Maguire	Sweco	Fathom	One Click LC	Project 15	3%	3	
1-5 Lower Marsh	Superstructure 2.1	144	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbish	1990s	Not listed	4927	6294	132	28%	1499	No new baser	Reinforced C		RC Cores / s			6	8	7	2			Sweco	Davis Maguire	Sweco	Fathom	One Click LC	Project 15	3%	3	
1-5 Lower Marsh	Superstructure 2.4	64	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbish	1990s	Not listed	4927	6294	132	28%	1499	No new baser	Reinforced C		RC Cores / s			6	8	7	2			Sweco	Davis Maguire	Sweco	Fathom	One Click LC	Project 15	3%	3	
15 Minories, 57-60 & 62	Substructure 1.1	781	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and er	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New						14	13					Hoare Lea	WSP	Hoare Lea	ACME	One Click LC	Project 16	100%	1	
15 Minories, 57-60 & 62	Superstructure 2.1	1488	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and er	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New						14	13					Hoare Lea	WSP	Hoare Lea	ACME	One Click LC	Project 16	100%	1	
15 Minories, 57-60 & 62	Superstructure 2.4	1161	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and er	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New						14	13					Hoare Lea	WSP	Hoare Lea	ACME	One Click LC	Project 16	100%	1	
15-17 Eldon Street	Substructure 1.1	3	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldor	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbish	1980s	Not listed	4161	5890	1009	42%	2738	No new baser	Reinforced C	Steel	RC Cores / s	RC Cores / sh	Load balancin	7	11	9	4			Verte	Frankham Cons	Butler and Your	Gort Scott		Project 17	24%	3	
15-17 Eldon Street	Superstructure 2.1	88	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldor	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbish	1980s	Not listed	4161	5890	1009	42%	2738	No new baser	Reinforced C	Steel	RC Cores / s	RC Cores / sh	Load balancin	7	11	9	4			Verte	Frankham Cons	Butler and Your	Gort Scott		Project 17	24%	3	
15-17 Eldon Street	Superstructure 2.4	98	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldor	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbish	1980s	Not listed	4161	5890	1009	42%	2738	No new baser	Reinforced C	Steel	RC Cores / s	RC Cores / sh	Load balancin	7	11	9	4			Verte	Frankham Cons	Butler and Your	Gort Scott		Project 17	24%	3	
166 High Holborn	Substructure 1.1	90	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Commercial &		New Build			0	493	0		493							6	6					Scotch Part	Arup				Project 18	100%	1	
166 High Holborn	Superstructure 2.1	278	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Commercial &		New Build			0	493	0		493							6	6					Scotch Part	Arup				Project 18	100%	1	
166 High Holborn	Superstructure 2.4	197	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 I	27/06/2023		Pending	Commercial &		New Build			0	493	0		493							6	6					Scotch Part	Arup				Project 18	100%	1	
16A-18 West Central Str	Substructure 1.1	109	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to lea	27/06/2023		Pending	Existing reside	Yes	Substructure an	1900s	Not listed	2712	3247	1718	20%	2253	No new baser	Brickwork an	Reinforced C	None			3	6	6	3			Scotch Part	Heyne Tillet Ste	Scotch Partners	DSDHA		Project 19	63%	2	
16A-18 West Central Str	Superstructure 2.1	102	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to lea	27/06/2023		Pending	Existing reside	Yes	Substructure an	1900s	Not listed	2712	3247	1718	20%	2253	No new baser	Brickwork an	Reinforced C	None			3	6	6	3			Scotch Part	Heyne Tillet Ste	Scotch Partners	DSDHA		Project 19	63%	2	
16A-18 West Central Str	Superstructure 2.4	100	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to lea	27/06/2023		Pending	Existing reside	Yes	Substructure an	1900s	Not listed	2712	3247	1718	20%	2253	No new baser	Brickwork an	Reinforced C	None			3	6	6	3			Scotch Part	Heyne Tillet Ste	Scotch Partners	DSDHA		Project 19	63%	2	
175 Bishopsgate/Exchan	Substructure 1.1	0	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exis	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishm	1980s	Not listed	55000	58903	5500	7%	9403	No new baser	Reinforced C	Steel		Minimal inten		12	12	12				Sweco			Fletcher Priest .		Project 20	10%	4	
175 Bishopsgate/Exchan	Superstructure 2.1	143	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exis	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishm	1980s	Not listed	55000	58903	5500	7%	9403	No new baser	Reinforced C	Steel		Minimal inten		12	12	12				Sweco			Fletcher Priest .		Project 20	10%	4	
175 Bishopsgate/Exchan	Superstructure 2.4	101	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exis	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishm	1980s	Not listed	55000	58903	5500	7%	9403	No new baser	Reinforced C	Steel		Minimal inten		12	12	12				Sweco			Fletcher Priest .		Project 20	10%	4	
18 Blackfriars Road - Off	Substructure 1.1	85	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381								48	48					Arup					Project 21	100%	1	
18 Blackfriars Road - Off	Superstructure 2.1	346	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381								48	48					Arup					Project 21	100%	1	
18 Blackfriars Road - Off	Superstructure 2.4	142	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381								48	48					Arup					Project 21	100%	1	
18 Blackfriars Road - Par	Substructure 1.1	85	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comp				Residential (in		New Build				19384			19384								25	25					Arup					Project 22	100%	1	
18 Blackfriars Road - Par	Superstructure 2.1	268	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comp				Residential (in		New Build				19384			19384								25	25					Arup					Project 22	100%	1	
18 Blackfriars Road - Par	Superstructure 2.4	206	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comp				Residential (in		New Build				19384			19384								25	25					Arup					Project 22	100%	1	
18 Blackfriars Road - Sta	Substructure 1.1	85	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (in		New Build				39578			39578								42	40					Arup					Project 23	100%	1	
18 Blackfriars Road - Sta	Superstructure 2.1	269	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (in		New Build				39578			39578								42	40					Arup					Project 23	100%	1	
18 Blackfriars Road - Sta	Superstructure 2.4	201	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (in		New Build				39578			39578								42	40					Arup					Project 23	100%	1	
181 Talgarth Road	Substructure 1.1	63	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bu	04/11/2021	11/08/2022		Residential (in		New Build				16943			16943								16	16					Stroma					Project 24	100%	1	
181 Talgarth Road	Superstructure 2.1	126	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bu	04/11/2021	11/08/2022		Residential (in		New Build				16943			16943								16	16					Stroma					Project 24	100%	1	
181 Talgarth Road	Superstructure 2.4	118	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bu	04/11/2021	11/08/2022		Residential (in		New Build				16943			16943								16	16					Stroma					Project 24	100%	1	
19-35 Sylvan Grove	Substructure 1.1	53	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (in		Heavy Refurbish	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry anc	Reinforced C	Moment fra	Cores and br	Load balancin	2	36	35		36		Introba	Civic Engineers		TP Bennett		Project 26	80%	3	
19-35 Sylvan Grove	Superstructure 2.1-2.3		Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (in		Heavy Refurbish	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry anc	Reinforced C	Moment fra	Cores and br	Load balancin	2	36	35		36		Introba	Civic Engineers		TP Bennett		Project 26	80%	3	
19-35 Sylvan Grove	Superstructure 2.4-2.8		Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (in		Heavy Refurbish	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry anc	Reinforced C	Moment fra	Cores and br	Load balancin	2	36	35		36		Introba	Civic Engineers		TP Bennett		Project 26	80%	3	
20 Giltspur Street	Substructure 1.1	3	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	Heavy Refurbish	2000s	Not listed	8734	11184	2024	28%	4474	No new baser	Steel	Steel	RC Cores / s	RC Cores / sh	Load balancin	7	6	6			None requir	Norman Di	Elliot Wood	Norman, Disney	Buckley Gray Yo	Project 30	23%	3	
20 Giltspur Street	Superstructure 2.1	50	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	Heavy Refurbish	2000s	Not listed	8734	11184	2024	28%	4474	No new baser	Steel	Steel	RC Cores / s	RC Cores / sh	Load balancin	7	6	6			None requir	Norman Di	Elliot Wood	Norman, Disney	Buckley Gray Yo	Project 30	23%	3	
20 Giltspur Street	Superstructure 2.4	51	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	Heavy Refurbish	2000s	Not listed	8734	11184	2024	28%	4474	No new baser	Steel	Steel	RC Cores / s	RC Cores / sh	Load balancin	7	6	6			None requir	Norman Di	Elliot Wood	Norman, Disney	Buckley Gray Yo	Project 30	23%	3	
25 Mandela Way	Substructure 1.1	189	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4					ADW Deve					Project 33	100%	1	
25 Mandela Way	Superstructure 2.1	400	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4					ADW Deve					Project 33	100%	1	
25 Mandela Way	Superstructure 2.4	47	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4					ADW Deve					Project 33	100%	1	
257-283 Ilderton Road	Substructure 1.1	82	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (in		New Build				29541			29541								30	30					Atelier Ten					Project 34	100%	1	
257-283 Ilderton Road	Superstructure 2.1	149	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (in		New Build				29541			29541								30	30					Atelier Ten					Project 34	100%	1	
257-283 Ilderton Road	Superstructure 2.4	184	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (in		New Build				29541			29541								30	30					Atelier Ten					Project 34	100%	1	
26 To 46 Lisson Grove	Substructure 1.1	91	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure an	1960s	Not listed	6192	10624	4404	72%	8836	No new baser						5	8	7	3			Sweco					Project 35	71%	2	
26 To 46 Lisson Grove	Superstructure 2.1	168	Westminster	NW1 6TT	22/05145/FULL

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Site name	A1-A5 emissi	Sub + frame	Sub + frame	Borough	Postcode	Planning reference	Data source	Description	Submission date	Decision date	Final decisio	Building typology	Change of	Classification	Existing l	Listed statu	GIA existing	GIA new	GIA demol	GIA % incre	GIA added n	Basement r	Existing stri	New structi	Existing st	New stabili	Loading trea	Existing s	New stc	Above g	Added :	Added :	Fire interv	LCA author / S	Structura	MEP Enginee	Architect	LCA Softw	Project Ref	%demolis	Class Ref
1 Appold Street	10425669	293	201	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbishmen	1980s	Not listed	28992	51869	12718	79%	35595	No new bas	Steel	Steel				10	16	14	6			Hilson Moran	AKT II	MTT	Piercy & Compa	One Click L	Project 1	44%	3
1 Exchange Square Lo	8460965	878	144	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refur	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbishmen	1990s	Not listed	49262	58903	0	20%	9641	No new bas						15	15	14				Sweco	Heyne Till	Sweco	Fletcher Priest A	One Click L	Project 2	0%	3
1 Museum Street	10315829	416	416	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and re	Reinforced	Reinforced				17	19	17	2			Scotch Partner	Heyne Till	Scotch Partne	DSDHA	One Click L	Project 4	100%	1
1 Southwark Bridge F	2913896	1,069	136	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Existing building enhanced and re-clad	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbishment	1980s	Not listed	18636	21363	0	15%	2727	No new bas	Reinforced					7	8	8	1			Hurley Palmer	Webb Yat	Hurley Palme	BDG architectur	One Click L	Project 5	0%	4
100 And 108 Fetter L	6281186	463	463	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and cor	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced				9	14	13	5			Waterman Gro	Waterma	Waterman Gr	Fletcher Priest A	One Click L	Project 8	100%	1
100 Grays Inn Road	2050780	161	161	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127	11/07/2022			Office & Retail		Heavy Refurbishmen	1960s	Not listed	7893	12747	7893	61%	12747	No new bas	Reinforced	Timber				9	12	11	3			Max Fordham	Heyne Till	Max Fordham	Piercy & Compa	One Click L	Project 9	100%	2
100 New Bridge Stree	2500000	831	107	City of London	EC4V 6JJ	22/00748/FULMAJ	Planning Portal	Maximum retention + Refurbishment,	11/08/2022	29/06/2023	Granted	Office & Retail	No	Light Refurbishment	1990s	Not listed	20384	23393		15%	3009		Steel					11	12	11	1			Long and Partr	Waterma	Long and Part	Gensler	Sturgis Car	Project 10	0%	4
101 Whitechapel High	25705818	675	630	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbishmen	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13			Buro Happold	Buro Hap	Buro Happold	Foster + Partner	One Click L	Project 11	64%	3
115 - 123 Houndsditc	15488283	232	232	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and c	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22			Atelier Ten	AKT II	Norman, Disr	Allford Hall Mon	One Click L	Project 12	100%	1
120 Fleet Street	34454636	495	465	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court buil	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbishmen	1930s	Grade II*	58818	74065	54427	26%	69674	New and re	Reinforced	Steel			Minimal inte	7	23	21	1	21		chapmanbdsp	AKT II	chapmanbdsp	Bjarke Ingels Gr	One Click L	Project 13	93%	3
14-21 Holborn Viadu	16480395	867	458	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure and/or	1920s	Not listed	16944	35948		112%	19004							11	15	13	4			Hilson Moran	Heyne Till	Hilson Moran	PLP Architecture	eTool LCD	Project 14	0%	2
1-5 Lower Marsh	932709	622	148	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbishmen	1990s	Not listed	4927	6294	132	28%	1499	No new bas	Reinforced		RC Cores /			6	8	7	2			Sweco	Davis Maj	Sweco	Fathom	One Click L	Project 15	3%	3
15 Minories, 57-60 & 62	48826533	High Street	455	d 1 Little	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and e	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New							14	13				Hoare Lea	WSP	Hoare Lea	ACME	One Click L	Project 16	100%	1
15-17 Eldon Street	540729	197	92	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldo	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbishmen	1980s	Not listed	4161	5890	1009	42%	2738	No new bas	Reinforced	Steel	RC Cores / RC Cores / s		Load balanci	7	11	9	4			Verte	Frankham	Butler and Yo	Gort Scott		Project 17	24%	3
166 High Holborn	181742	369	369	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Commercial & Res		New Build			0	493	0		493								6	6				Scotch Partner	Arup				Project 18	100%	1
16A-18 West Central	729377	324	225	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave 22/06/2023			Pending	Office & Retail	Yes	Substructure and/or	1900s	Not listed	2712	3247	1718	20%	2253	No new bas	Brickwork a	Reinforced	None			3	6	6	3			Scotch Partner	Heyne Till	Scotch Partne	DSDHA		Project 19	63%	2
175 Bishopsgate/Excl	8460965	900	144	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exi	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbishment	1980s	Not listed	55000	58903	5500	7%	9403	No new bas	Reinforced	Steel			Minimal inte	12	12	12				Sweco			Fletcher Priest A		Project 20	10%	4
18 Blackfriars Road -	50202389	431	431	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381								48	48				Arup					Project 21	100%	1
18 Blackfriars Road -	10099064	521	521	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium com				Residential (inc. st		New Build				19384			19384								25	25				Arup					Project 22	100%	1
18 Blackfriars Road -	14671106	371	371	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podi	04/07/2023			Residential (inc. st		New Build				39578			39578								42	40				Arup					Project 23	100%	1
181 Talgarth Road	3200994	189	189	Hammersmith a	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bi	04/11/2021	11/08/2022		Residential (inc. st		New Build				16943			16943								16	16				Stroma					Project 24	100%	1
18-20 Savile Row	3630742	416	416	Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, ex	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and re	Reinforced	Steel	RC Cores /	RC Cores / s		9	9	8	8			Norman, Disne	Elliot Wo	Norman, Disr	Fathom	One Click L		100%	1
19-35 Sylvan Grove	9012128	333	328	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 s	02/03/2023		Pending	Residential (inc. st		Heavy Refurbishmen	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry an	Reinforced	Moment fr	Cores and b	Load balanci	2	36	35		36		Introba	Civic Engi		TP Bennett		Project 26	80%	3
20 Giltspur Street	1722064	385	154	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of exist	12/09/2022	12/12/2022		Office	No	Heavy Refurbishmen	2000s	Not listed	8734	11184	2024	28%	4474	No new bas	Steel	Steel	RC Cores /	RC Cores / s	Load balanci	7	6	6			None requi	Norman Disne	Elliot Wo	Norman, Disr	Buckley Gray Ye	Project 30	23%	3
25 Mandela Way	8900603	589	589	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4				ADW Developr					Project 33	100%	1
257-283 Ilderton Roa	6818535	231	231	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and	09/05/2023			Residential (inc. st		New Build				29541			29541								30	30				Atelier Ten					Project 34	100%	1
26 To 46 Lisson Grov	4079776	462	384	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure and/or	1960s	Not listed	6192	10624	4404	72%	8836	No new bas						5	8	7	3			Sweco					Project 35	71%	2
330 Grays Inn Road	7486466	214	210	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with	03/03/2023		Pending	Office, Retail & Re	Yes	Heavy Refurbishmen	1870s	Not listed	12811	35681	12097	179%	34967	New and re	Masonry an	Reinforced	RC Cores /	RC Cores / s	Load balanci	3	2	5	2	15		XCO2	WSP		Allford Hall Mon	One Click L	Project 37	94%	3
334-338 Oxford St	14214324	407	398	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with	03/03/2023		Pending	Office, Retail & Re	Yes	Heavy Refurbishmen	1870s	Not listed	12811	35681	12097	179%	34967	New and re	Masonry an	Reinforced	RC Cores /	RC Cores / s	Load balanci	3	2	5	2	15		XCO2	WSP		Allford Hall Mon	One Click L	Project 37	94%	3
38-42 Southwark Bric	6409769	380	380	Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870								7	7				Arup					Project 39	100%	1
38-70 Baker Street	7660768	231	231	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & Res	No	Substructure and/or	1950s	Not listed	19618	33223	19618	69%	33223	No new bas						7	10	9	3			Buro Happold					Project 40	100%	2
45 Hornsey Road	5647857	566	566	Islington	N7 7DD	P2022/1943/FUL	Planning Portal	Demolition of existing building and str	25/05/2022	18/07/2023		Residential (inc. st		New Build				9983			9983								12	12				Energist					Project 41	100%	1
458 Oxford Street	25155986	414	414	Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777								11	9				Arup	Arup	Arup	Pilbrow & Partn	One Click L	Project 42	100%	1
47-50 Mark Lane	858229	28	28	City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and st	21/12/2022	22/03/2023		Office	No	Substructure and/or	1960s	Not listed	16523	30218	16523	83%	30218	No new bas						11	11	11				GXN Innovatio	AKT II	Atelier Ten	Orms Designers	One Click L	Project 43	100%	2
61 - 65 Holborn Viadu	4398953	215	215	City of London	EC1A 2DE	21/00781/FULMAJ	Planning Portal	Erection of new ground plus 12-storey	13/09/2021	01/02/2022		Residential (inc. st		New Build				20463			20463								14	12				Hodkinson					Project 48	100%	1
6-12 Verney Road	13919584	667	667	Southwark	SE16 3FN	23/AP/0948	Planning Portal	Up to 4-storey building.	05/04/2023			Industrial		New Build				20864			20864								4	4				Insignis					Project 49	100%	1
63 - 66 Coleman Stre	1937952	371	371	City of London	EC2R 5AN	21/00694/FULMAJ	Planning Portal	Front façade retention	09/08/2021	14/12/2022		Office & Retail	No	Substructure and/or	1870s	Not listed	3851	5220	3851	36%	5220							8	10	9	2			FLATT	Heyne Till	FLATT	Emrys Architect	One Click L	Project 50	100%	2
63 New Bond Street	4248107	1,201	228	Westminster	W1S 1RJ	23/08027/FULL	Planning Portal	Alteration and extension of the existir	20/11/2023	02/03/2024	Granted	Office & Retail	No	Heavy Refurbishmen	1800s	Not listed	15079	18617		23%	3538	New and re	Masonry an	Reinforced	RC Cores /	RC Cores / s	Capacity ent	7	4	6	4			Buro Happold	Buro Hap	Buro Happold	Foster + Partner	One Click L		0%	3
65 Gresham St	8180484	622	151	City of London	EC2V 7NQ	22/00848/FULMAJ	Planning Portal	Horizontal Refurbishment at 8th and S	07/09/2022		Pending	Office	No	Heavy Refurbishmen	2000s	Not listed	41136	54290	0	32%	13154	No new bas						12	17	14	5	2		Longevity Part	Buro Hap	Atelier Ten	Squire and Partr	One Click L	Project 51	0%	3
7 Millbank	15484951	798	798	Westminster	SW1P 3JA	21/01508/FULL	Planning Portal		10/03/2021	08/02/2022		Office		New Build				19414			19414								10	8				Hilson Moran					Project 53	100%	1
747-759 & 765-775 O	10334287	201	201	Southwark	SE15 1NZ	23/AP/1862	Planning Portal	Building A: 33 storeys + basement. B:	03/07/2023			Residential (inc. st		New Build				51386			51386								35	33				Whitecode					Project 55	100%	1
76-78 Upper Ground	11005179	683	283	Lambeth	SE1 9PZ	21/01142/FUL	Planning Portal	Refurbishment, partial demolition and	19/03/2021	23/12/2021		Office	No	Heavy Refurbishmen	1980s	Grade II	27790	38840	5060	40%	16110	No new bas						6	7	6	1	4		Watkins Payne	Heyne Till	Watkins Payn	Allford Hall Mon	One Click L	Project 56	18%	3
79-87 Westminster B	3784486	444	444	Lambeth	SE1 7XT	20/03539/FUL	Planning Portal	Erection of ground plus 14-storey buil	13/10/2020			Hotel		New Build				8529			8529								16	14				Meinhardt					Project 57	100%	1
8 - 12 New Bridge Str	2524541	715	323	City of London	EC4V 6AL	22/00622/FULMAJ	Planning Portal	Part demolition of Fleet House, full de	07/07/2022	31/01/2023		Office	No	Heavy Refurbishmen	1950s	Not listed	5612	7810	1332	39%	3530	No new bas	Reinforced		RC Cores /	RC Cores / s	Horizontal R	8	11	10	1	11		Hoare Lea	AKT II	Hoare Lea	HOK Internation	One Click L	Project 58	24%	3
81-103 King's Road	6349567	521	393	Kensington and	SW3 4NX	PP/23/00968	Planning Portal	Demolition of existing building and re	07/02/2023			Office	No	Substructure and/or	1980s	Not listed	9790	16138	5831	65%	12179	No new bas						5	5	4				Ramboll	Robert Bir	Ramboll	Pilbrow & Partn	One Click L	Project 62	60%	2
85 Gracechurch Stree	21118208	559	559	City of London	EC3V 0AA	22/01155/FULEIA	Planning Portal	Partial demolition of existing building	30/11/2022	11/10/2023	Granted	Office & Retail	No	Substructure and/or	1930s	Not listed	8035	37746	8035	370%	37746	New and re	Steel					10	37	33	27			Sweco	Robert Bir		Woods Bagot		Project 63	100%	2
88 Grays Inn Road	29970		26	Camden	WC1X 8AA	2022/4259/P	Planning Portal	Existing building is being retained and	11/10/2022			Commercial & Res	Yes	Retrofit	1960s	Not listed	1280	1149	0	-10%	0	No new bas	Reinforced					4	4	4		2		Max Fordham	Heyne Till	Max Fordham	Piercy & Compa	One Click L	Project 64	0%	5
9-10 and 11 Angel Co	1990431	408	408	City of London	EC2R 7BH	22/00860/FULMAJ	Planning Portal	Demolition of the existing buildings ex	08/09/2022	22/02/2023		Hotel		New Build				4878			4878								12	9				Greengage					Project 67	100%	1
Apollo Business Cent	5191341	224	224	Lewisham	SE8 5JE	DC/23/130258	Planning Portal	Mixed-use redevelopment of the site	02/02/2023			Commercial & Res		New Build				23204			23204								27	26				Greengage					Project 69	100%	1
Borough Triangle Site	33885020	363	363	Southwark	SE1 6BN	22/AP/3149	Planning Portal	Demolition of all existing buildings/str	05/09/2022			Office & Retail		New Build				93367			93367								46	46				Whitecode					Project 70	100%	1
Boundary House 7 - 1	4075736	365	365	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and th	30/09/2021	19/07/2022		Hotel		New Build				11158			11158								15	14				Hoare Lea					Project 71	100%	1
British Library Extens	31932853	2,862	2,862	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and th	30/09/2021	19/07/2022		Hotel		New Build				11158			11158								15	14				Hoare Lea					Project 71	100%	1
Burgess Industrial Pa	9976069	251	251	Southwark	SE5 7TJ	21/AP/1342	Planning Portal	12 blocks of betweeen 2-13 storeys	19/04/2021			Commercial & Res		New Build				39696			39696								12	12				Waterman Bui					Project 73	100%	1
Bury House - 31 Bury	10227023	339	339	City of London	EC3A 5AR	20/00848/FULEIA	Planning Portal	The use of prefabricated structural and façade systems present opportunities for material efficiency, which have been explored and incorporated into the proposed design. Further material efficiency opportunities have been explored by retionalising structural grids and assessing different foundation options to minimise material use.	28/10/2020			Office & Retail		New Build				30170			30170								50				Hoare Lea					Project 74	100%	1
Buspace Studios	3137952	332	332	Kensington and	W10 5AP	PP/22/07709	Planning Portal	Erection of 2 buildings with groundflo	23/11/2023			Commercial & Res		New Build				9450			9450								6	5				XCO2					Project 75	100%	1
Canada Water Docksi	25514479	415	415	Southwark	SE16 7PJ	21/AP/2655	Planning Portal	Plot A1 and A2 share basements. Gro	12/10/2022			Office		New Build				61551			61551								25	24				Atelier Ten					Project 76	100%	1
Canada Water Docksi	15304295	435	435	Southwark	SE16 7PJ	23/AP/0565	Planning Portal	Erection of 11-storey building with 1 b	12/10/2022			Office		New Build				35196			35196								12	11				Arup					Project 77	100%	1
Castle & Fitzroy Hous	11882223	365	365	Islington	EC2A 4UY	P2022/2893/FUL	Planning Portal	commercial building of 9 storeys (incl.	31/08/2022	12/10/2023		Office		New Build				32541			32541								12	11				Hoare Lea					Project 78	100%	1
Church street resider	20257524	475	475	Westminster	NW8 8EX	21/08160/COOUT	Planning Portal		23/11/2021	30/06/2023		Commercial & Res		New Build				42683			42683								14	13				Max Fordham					Project 79	100%	1
Colechurch House	29597508	614	614	Southwark	SE1 2SX	20/AP/3013	Planning Portal	Erection of elevated 22-storey buildin	12/10/2020			Office & Retail		New Build				48178			48178								26	22				Sweco					Project 80	100%	1
Cripplegate House 1	1246630	482	80	City of London	EC1Y 0RR	22/00202/FULMAJ	Planning Portal	Heritage building: retained. 90s Refur	28/03/2022	01/11/2022		Office	No	Light Refurbishment	1890s	Grade II	12989	15649	1443	20%	2588	No new bas	Steel	RC Cores /	RC Cores / s			9	13	12	3			Hawkins Brow	London St		HawkinsBrown	One Click L	Project 81	11%	4
Dyne House	3033349	736	488	Haringey	N6 5EE	HGY/2023/0328	Planning Portal	Redevelopment of Dyne House, to inc	08/03/2023		Pending	School	No	Heavy Refurbishmen	1960s	Not listed	3019	6216	925	106%	4122	New and re	Reinforced	Timber and		RC Cores / s		6	6	5	4			AECOM	Expeditio	AECOM	Hopkins Archite	One Click L	Project 82	31%	3
Edward Rudolph Hou	2529875	510	510	Islington	WC1X 0JL	P2023/2059/FUL	Planning Portal	Demolition of existing building and er	02/08/2023			Office		New Build				4960			4960								4	4				Verte					Project 83	100%	1
Evelina Children's Ho	23288250	853	853	Lambeth	SE1 7EH	21/01869/FUL	Planning Portal	12 storey building plus 2 storey basen	26/01/2021			Hospital/Medical		New Build				27306			27306								14	12				AECOM					Project 85	100%	1
Former Blackfriars Cr	15751935	570	460	Southwark	SE1 0BT	22/AP/1347	Planning Portal	Minor material amendments to plann	04/04/2022	10/10/2022	Granted	Office & Retail	Yes	Heavy Refurbishmen	1960s	Not listed	14459	34264	7811	137%	27616	New and re						6	10	8	4			Atelier Ten	AKT II	Atelier Ten	Sheppard Robso	One Click L	Project 87	54%	3
Friars Close	5764159	372	372	Southwark	SE1 0UL	22/AP/4376	Planning Portal	Erection of 9-storey building with 21-s	28/12/2022			Residential (inc. st		New Build				15513			15513								21	21				Max Fordham					Project 88	100%	1
Friary Court 65 Crutcl	4078404	146	146	City of London	EC3N 2AE	22/00882/FULMAJ	Planning Portal	Demolition of existing building and re	30/09/2022	27/06/2023		Residential (inc. st		New Build				27844			27844								22	20				Waterman Bui					Project 89	100%	1
Gillingham House	3228248	523	342	Westminster	SW1V 1HU	23/01690/FULL	Planning Portal	Intensive refurbishment and Refurbis	13/03/2023			Office		Heavy Refurbishmen			5458	9450	2183	73%	6176	No new bas						4	8	8	4			Atelier Ten	Stantec				Project 90	40%	3
Hyatt Place	4460081	381	219	Hillingdon	UB4 0JN	2385/APP/2022/29	Planning Portal	Partial demolition of the existing build	27/09/2022		Pending	Hotel	Yes	Heavy Refurbishmen	1960s	Not listed	9885	20372	1211	106%	11698							13	14	14	1			Love Design St	Engineeri	Woodcote Po	Haptic	One Click L	Project 91	12%	3
Island Site Woolwich	1170129	63	41	Greenwich	SE18 6PF	22/3162/F	Planning Portal	The redevelopment (together with de	22/08/2022		Pending	Office, Retail & Re	Yes	Heavy Refurbishmen	1880s	Grade II	12544	28528	2509	127%	18493	No new bas						5	8	7	3	6		Create				One Click L	Project 93	20%	3
JVC Business Park	4636518	248	98	Brent	NW2 7AF	22/1849	Planning Portal	Full planning application for an Refurt	19/05/2022	07/12/2022	Granted	Data Centre	No	Heavy Refurbishmen	2000s	Not listed	28470	47182	0	66%	18712	No new bas						4	4	4	4			Hoare Lea			Scott Brownrigg	One Click L	Project 96	0%	3
Kensington Centre, 6	15494772	634	634	Hammersmith a	W14 8UD	2023/00585/FUL	Planning Portal	Demolition of existing building and er	03/03/2023			Office		New Build				24441			24441								12	11				LCD					Project 97	100%	1
King's Place (Land at	3960085	247	247	Southwark	SE1 1JJ	23/AP/0479	Planning Portal	Demolition of existing buildings, part	22/02/2023			Residential (inc. st		New Build				16036			16036								11	11				Scotch Partner					Project 98	100%	1
Leconfield House	2022153	711	199	Westminster	W1J 5JB	23/02111/FULL	Planning Portal	Excavation to provide one additional l	29/03/2023		Pending	Office & Retail	No	Heavy Refurbishmen	1930s	Not listed	8757	10148	1452	16%	2843	New and re						9	10	8	1	8		Elliott Wood	Elliot Wo	AECOM	EPR Architects	One Click L	Project 99	17%	3
Liverpool Street Stati	47342295	356	313	City of London	EC2M 7PY	23/00453/FULEIA	Planning Portal	Partial demolition of Station including	02/05/2023		Pending		No	Heavy Refurbishmen	1880s	Grade II*	40869	151394	22443	270%	132968	No new bas						10	24	22	14			WSP	WSP	WSP	Herzog & de Me	One Click L	Project 100	55%	3
Maclise Multi-Storey	5300593	270	270	Hammersmith a	W14 8UX	2021/04167/FUL	Planning Portal	All floors and internal structures (floo	29/12/2021			Hotel	Yes	Substructure and/or	1930s	Grade II		19655			19655	New	Reinforced					5	9	8	3			McBains			SPPARC		Project 101		2
New City Court	18337450	331	331	Southwark	SE1 9RS	21/AP/1361	Planning Portal	New-build 26-storey buildings (plus m	21/04/2021	13/01/2022		Office & Retail		Heavy Refurbishmen		Grade II		55461		90%	55461	New and re	Brickwork a					5	28	26		28		chapmanbdsp			Allford Hall Mon		Project 102	90%	3
Newcombe House	10640081	496	396	Kensington and	W8 7LX	PP/23/03534	Planning Portal	Newcombe House: 100% of tower foundations to be retained - vertical Refurbishment part of 4-5 storey. 90% of steel frame & floors to be retained. Non-listed	05/06/2023			Office & Retail		Heavy Refurbishmen	1950s	Grade II	Church	11408	Building	2692	rection of 3-4	new 6-storey	building at	Newcombe	House. R	Retaining	building. 43% RC Cores &		12	15	15	3			HDR	AKT II	HDR	Squire and Partr	One Click L	Project 103	52%	3
Plot H1 Elephant Parl	19061257	300	300	Southwark	SE17 1GD	21/AP/1819	Planning Portal	Erection of 17-storey building with ba	24/05/2021			Office		New Build				63598			63598								18	17				HDR					Project 105	100%	1
Poultry Market And C	9266700	282	215	City of London	EC1A 9LH	19/01343/FULEIA	Planning Portal	Part demolition, repair, refurbishmen	19/12/2019	22/11/2022		Office	Yes	Heavy Refurbishmen	1950s	Grade II	15617	43037	5466	176%	32886	New and re	Reinforced				Load balanci	3	3	3	1			Arup				One Click L	Project 108	35%	3
Red Lion Court 46-48	8465862	257	257	Southwark	SE1 9EQ	22/AP/1602	Planning Portal	Basement retained and extended by a	06/05/2022			Office	Yes	Substructure and/or			17335	32965	17335	90%	32965								11	11				Arup					Project 110	100%	2
Royal Street Plot C	6646038	229	229	Lambeth	SE1 7LL	22/01206/EIAFUL	Planning Portal		21/04/2022			Office		New Build				29022			29022								15	15				Arup					Project 115	100%	1
Royal Street Plot D	11628360	222	222	Lambeth	SE1 7LL	22/01206/EIAFUL	Planning Portal		21/04/2022			Office		New Build				52380			52380							

Site name	Assessment Type	A-C carbon	Borough	Postcode	Planning reference n	Data source	Description	Submission date	Decision date	Final decisior	Building typolog	Change	Classification	Existing	Listed statu	GIA existing	GIA new	GIA demoliti	GIA % incr	GIA added	Basement retc	Existing stru	New structi	Existing stat	New stabilit	Loading trea	Existing st	New sto	Above gr	Added st	Added s	Fire interven	LCA author / S	Structural	MEP Engineer	Architect	LCA Software	Project Ref	%demolish	Class Ref
1 Appold Street	Assessment 1 - no de	551	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building	12/12/2022		Pending	Office	Yes	Heavy Refurbis	1980s	Not listed	28992	51869	12718	79%	35595	No new baseme	Steel	Steel				10	16	14	6		Hilson Moran	AKT II	MTT	Piercy & Compan	One Click LCA	Project 1	44%	3
1 Exchange Square Lo	Assessment 1 - no de	1013	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurt	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbis	1990s	Not listed	49262	58903	0	20%	9641	No new baseme						15	15	14			Sweco	Heyne Tillet	Sweco	Fletcher Priest Ar	One Click LCA	Project 2	0%	3
1 Museum Street	Assessment 1 - no de	1051	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 H	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and retaii	Reinforced C	Reinforced				17	19	17	2		Scotch Partne	Heyne Tillet	Scotch Partner	DSDHA	One Click LCA	Project 4	100%	1
1 Southwark Bridge R	Assessment 1 - no de	968	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Existing building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	Light Refurbis	1980s	Not listed	18636	21363	0	15%	2727	No new baseme	Reinforced C					7	8	8	1		Hurley Palmer	Webb Yate	Hurley Palmer	BDG architecture	One Click LCA	Project 5	0%	4
100 And 108 Fetter La	Assessment 1 - no de	967	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and con	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced				9	14	13	5		Waterman Gro	Waterman	Waterman Gro	Fletcher Priest Ar	One Click LCA	Project 8	100%	1
100 Grays Inn Road	Assessment 1 - no de	870	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127 Clerkenwell Road and the erection of a mixed-use building a	11/10/2022		Pending	Office & Retail	No	Demolition and	1960s	Not listed	7893	12747	7893	61%	12747	No new baseme	Reinforced C	Timber				9	12	11	3		Max Fordham	Heyne Tillet	Max Fordham	Piercy & Compan	One Click LCA	Project 9	100%	2
101 Whitechapel High	Assessment 1 - no de	1388	Tower Hamlet	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High St	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbis	1900s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13		Buro Happold	Buro Happ	Buro Happold	Foster + Partners	One Click LCA	Project 11	64%	3
115 - 123 Houndsditch	Assessment 1 - no de	693	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and co	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22		Atelier Ten	AKT II	Norman, Disne	Allford Hall Mona	One Click LCA	Project 12	100%	1
120 Fleet Street	Assessment 1 - no de	1038	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court buil	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbis	1930s	Grade II*	58818	74065	54427	26%	69674	New and retaii	Reinforced C	Steel			Minimal inter	7	23	21	1	21	chapmanbdsp	AKT II	chapmanbdsp	Bjarke Ingels Gro	One Click LCA	Project 13	93%	3
14-21 Holborn Viaduc	Assessment 1 - no de	1070	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-2	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure a	1920s	Not listed	16944	35948		112%	19004							11	15	13	4		Hilson Moran	Heyne Tillet	Hilson Moran	PLP Architecture	eTool LCD	Project 14	0%	2
1-5 Lower Marsh	Assessment 1 - no de	742	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbis	1990s	Not listed	4927	6294	132	28%	1499	No new baseme	Reinforced C		RC Cores / sl			6	8	7	2		Sweco	Davis Mag	Sweco	Fathom	One Click LCA	Project 15	3%	3
15 Minories, 57-60 & 6	Assessment 1 - no de	1325	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and er	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New							14	13			Hoare Lea	WSP	Hoare Lea	ACME	One Click LCA	Project 16	100%	1
15-17 Eldon Street	Assessment 1 - no de	786	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldon	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbis	1980s	Not listed	4161	5890	1009	42%	2738	No new baseme	Reinforced C	Steel	RC Cores / sl	RC Cores / sl	Load balancir	7	11	9	4		Verte	Frankham	Butler and You	Gort Scott		Project 17	24%	3
166 High Holborn	Assessment 1 - no de	1071	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166 H	27/06/2023		Pending	Commercial & Re		New Build			0	493	0		493								6	6			Scotch Partne	Arup				Project 18	100%	1
16A-18 West Central S	Assessment 1 - no de	876	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave just the basement walls and slab (existing retaining wall to	27/06/2023		Pending	Residential (inc.	Yes	Substructure a	1900s	Not listed	2712	3247	1718	20%	2253	No new baseme	Brickwork an	Reinforced	None			3	6	6	3		Scotch Partne	Heyne Tillet	Scotch Partner	DSDHA		Project 19	63%	2
175 Bishopsgate/Exch	Assessment 1 - no de	1013	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exis	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbis	1980s	Not listed	55000	58903	5500	7%	9403	No new baseme	Steel				Minimal inter	12	12	12			Sweco			Fletcher Priest Ar		Project 20	10%	4
18 Blackfriars Road - C	Assessment 1 - no de	1037	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Impr	05/07/2023			Office		New Build				116381			116381								48	48				Arup					Project 21	100%	1
18 Blackfriars Road - F	Assessment 1 - no de	1170	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium comp				Residential (inc.		New Build				19384			19384								25	25				Arup					Project 22	100%	1
18 Blackfriars Road - S	Assessment 1 - no de	1226	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (inc.		New Build				39578			39578								42	40				Arup					Project 23	100%	1
181 Talgarth Road	Assessment 1 - no de	807	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bu	04/11/2021	11/08/2022		Residential (inc.		New Build				16943			16943								16	16				Stroma					Project 24	100%	1
18-20 Savile Row	Assessment 1 - no de	1040	Westminster	W1S 3PW	22/03276/FULL	Planning Portal	Demolition of all existing buildings, exc	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and retaii	Reinforced C	Steel	RC Cores / sl	RC Cores / sl		9	9	8	8		Norman, Disne	Elliot Woo	Norman, Disne	Fathom	One Click LCA		100%	1
19-35 Baker Street	Assessment 1 - no de	1095	Westminster	W1U 6DD	16/11376/FULL	Planning Portal	Demolition of the existing buildings at	29/11/2016	27/03/2019	Granted	Office, Retail & R		New Build	1970s		20087	49561		147%	29474	New							10	9				Arup	AKT II	Arup	Hopkins Architect		Project 25	100%	1
19-35 Sylvan Grove	Assessment 1 - no de	790	Southwark	SE15 1PD	23/AP/0582	Planning Portal	2 buildings of up to 7 storeys and 34 st	02/03/2023		Pending	Residential (inc.		Heavy Refurbis	1920s	Not listed	2154	27476	1720	1176%	27042	New	Masonry and	Reinforced	Moment fra	Cores and br	Load balancir	2	36	35		36	Introba	Civic Engin		TP Bennett		Project 26	80%	3
2 Trafalgar Way	Assessment 1 - no de		Tower Hamlet	E14 5SP	20/01402/A2	Planning Portal	Redevelopment of the site to provide a	02/07/2020	30/06/2022		Residential (inc.		New Build				0				0								48	46									Project 29	100%	1
20 Giltspur Street	Assessment 1 - no de	982	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	Heavy Refurbis	2000s	Not listed	8734	11184	2024	28%	4474	No new baseme	Steel	Steel	RC Cores / sl	RC Cores / sl	Load balancir	7	6	6		None require	Norman Disne	Elliot Woo	Norman, Disne	Buckley Gray Yeo		Project 30	23%	3
216-220 Blackfriars Rc	Assessment 1 - no de	1452	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 baseme	03/11/2020	20/07/2022		Commercial & Re		New Build				40097			40097								25	22				WSP					Project 31	100%	1
2-3 Finsbury Avenue	Assessment 1 - no de		City of London	EC2M 2PA	20/00869/FULEIA	Planning Portal	Demolition of existing buildings and ne	04/11/2020	19/08/2021		Office		New Build				105733			105733								40	37				Atelier Ten					Project 32	100%	1
25 Mandela Way	Assessment 1 - no de	906	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118								4	4				ADW Develop					Project 33	100%	1
257-283 Ilderton Roac	Assessment 1 - no de	708	Southwark	SE15 1EZ	23/AP/1317	Planning Portal	30-storey accommodation block and 1(	09/05/2023			Residential (inc.		New Build				29541			29541								30	30				Atelier Ten					Project 34	100%	1
26 To 46 Lisson Grove	Assessment 1 - no de	1248	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure a	1960s	Not listed	6192	10624	4404	72%	8836	No new baseme						5	8	7	3		Sweco					Project 35	71%	2
302-312 Stratford High	Assessment 1 - no de	910	London Legacy	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and re	16/03/2022	22/05/2023	Granted	Commercial & Re	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27		Elementa	Meinhardt	Meinhardt	Henley Halebrow	One Click LCA	Project 36	100%	1
330 Grays Inn Road	Assessment 1 - no de	1227	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with a	03/03/2023			Pending, Retail & R	Yes	Heavy Refurbis	1870s	Not listed	12811	35681	12097	179%	34967	New and retaii	Masonry and	Reinforced	RC Cores / sl	RC Cores / sl	Load balancir	3	2	5	2	15	XCO2	WSP		Allford Hall Mona	One Click LCA	Project 37	94%	3
334-348 Oxford Street	Assessment 1 - no de	1437	Westminster	W1C 1JG	21/05110/FULL	Planning Portal	Alterations and Refurbishments to, an	26/07/2021	01/03/2022	Granted	Office & Retail	No	Heavy Refurbis	1970s	Not listed	33632	43040	0	28%	9408	New and retaii						8	11	10	3		Atelier Ten	AKT II	Atelier Ten	Allford Hall Mona	One Click LCA	Project 38	0%	3
38-42 Southwark Brid	Assessment 1 - no de	1108	Southwark	SE1 9EJ	22/AP/4006	Planning Portal		23/11/2022			Office		New Build				16870			16870								7	7				Arup					Project 39	100%	1
38-70 Baker Street	Assessment 1 - no de	866	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & Re	No	Substructure a	1950s	Not listed	19618	33223	19618	69%	33223	No new baseme						7	10	9	3		Buro Happold					Project 40	100%	2
45 Hornsey Road	Assessment 1 - no de	1046	Islington	N7 7DD	P2022/1943/FUL	Planning Portal	Demolition of existing building and str	25/05/2022	18/07/2023		Residential (inc.		New Build				9983			9983								12	12				Energist					Project 41	100%	1
458 Oxford Street	Assessment 1 - no de	964	Westminster	W1C 1AP	21/04502/FULL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777								11	9				Arup	Arup	Arup	Pilbrow & Partne	One Click LCA	Project 42	100%	1
47-50 Mark Lane	Assessment 1 - no de	823	City of London	EC3R 7QQ	22/01245/FULMAJ	Planning Portal	Demolition of existing buildings and str	21/12/2022	22/03/2023		Office	No	Substructure a	1960s	Not listed	16523	30218	16523	83%	30218	No new baseme						11	11	11			GXN Innovatic	AKT II	Atelier Ten	Orms Designers a	One Click LCA	Project 43	100%	2
55 Gracechurch Stree	Assessment 1 - no de	1071	City of London	EC3V 0EE	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New b	24/08/2020	26/01/2021		Office		New Build				33202			33202								32	29				TFT					Project 47	100%	1
61 - 65 Holborn Viadu	Assessment 1 - no de	1134	City of London	EC1A 2DE	21/00781/FULMAJ	Planning Portal	Erection of new ground plus 12-storey	13/09/2021	01/02/2022		Residential (inc.		New Build				20463			20463								14	12				Hodkinson					Project 48	100%	1
6-12 Verney Road	Assessment 1 - no de	1015	Southwark	SE16 3FN	23/AP/0948	Planning Portal	Up to 4-storey building.	05/04/2023			Industrial		New Build				20864			20864								4	4				Insignis					Project 49	100%	1
63 - 66 Coleman Stree	Assessment 1 - no de	778	City of London	EC2R 5AN	21/00694/FULMAJ	Planning Portal	Front façade retention	09/08/2021	14/12/2022		Office & Retail	No	Substructure a	1870s	Not listed	3851	5220	3851	36%	5220							8	10	9	2		FLATT	Heyne Tillet	FLATT	Emrys Architects	One Click LCA	Project 50	100%	2
63 New Bond Street	Assessment 1 - no de	810	Westminster	W1S 1RJ	23/08027/FULL	Planning Portal	Alteration and extension of the existing	20/11/2023	02/03/2024	Granted	Office & Retail	No	Heavy Refurbis	1800s	Not listed	15079	18617		23%	3538	New and retaii	Masonry and	Reinforced	RC Cores / sl	RC Cores / sl	Capacity enh	7	4	6	4		Buro Happold	Buro Happ	Buro Happold	Foster + Partners	One Click LCA		0%	3
65 Gresham St	Assessment 1 - no de	552	City of London	EC2V 7NQ	22/00848/FULMAJ	Planning Portal	Horizontal Refurbishment at 8th and 9	07/09/2022		Pending	Office	No	Heavy Refurbis	2000s	Not listed	41136	54290	0	32%	13154	No new baseme						12	17	14	5	2	Longevity Part	Buro Happ	Atelier Ten	Squire and Partne	One Click LCA	Project 51	0%	3
7 Brannan Street	Assessment 1 - no de		Tower Hamlet	E14 9ZR													0			0															Project 52		0
7 Millbank	Assessment 1 - no de	1494	Westminster	SW1P 3JA	21/01508/FULL	Planning Portal		10/03/2021	08/02/2022		Office		New Build				19414			19414								10	8				Hilson Moran					Project 53	100%	1
70 Gracechurch Stree	Assessment 1 - no de	1374	City of London	EC3V 0XL	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New b	13/10/2020	29/09/2021		Office		New Build				60616			60616								37	33				TFT					Project 54	100%	1
747-759 & 765-775 Ol	Assessment 1 - no de	746	Southwark	SE15 1NZ	23/AP/1862	Planning Portal	Building A: 33 storeys + basement. B: 1	03/07/2023			Residential (inc.		New Build				51386			51386								35	33				Whitecode					Project 55	100%	1
76-78 Upper Ground	Assessment 1 - no de	829	Lambeth	SE1 9PZ	21/01142/FUL	Planning Portal	Refurbishment, partial demolition and	19/03/2021	23/12/2021		Office	No	Heavy Refurbis	1980s	Grade II	27790	38840	5060	40%	16110	No new baseme						6	7	6	1	4	Watkins Payne	Heyne Tillet	Watkins Payne	Allford Hall Mona	One Click LCA	Project 56	18%	3
79-87 Westminster Br	Assessment 1 - no de	923	Lambeth	SE1 7XT	20/03539/FUL	Planning Portal	Erection of ground plus 14-storey build	13/10/2020			Hotel		New Build				8529			8529								16	14				Meinhardt					Project 57	100%	1
8 - 12 New Bridge Stre	Assessment 1 - no de	1227	City of London	EC4V 6AL	22/00622/FULMAJ	Planning Portal	Part demolition of Fleet House, full der	07/07/2022	31/01/2023		Office	No	Heavy Refurbis	1950s	Not listed	5612	7810	1332	39%	3530	No new baseme	Reinforced C		RC Cores / sl	RC Cores / sl	Horizontal Re	8	11	10	1	11	Hoare Lea	AKT II	Hoare Lea	HOK Internationa	One Click LCA	Project 58	24%	3
80 Charlotte Street G	Assessment 1 - no de			W1T 4QS													0			0						Minimal inter										Project 60		0
81-103 King's Road	Assessment 1 - no de	1236	Kensington an	SW3 4NX	PP/23/00968	Planning Portal	Demolition of existing building and red	07/02/2023			Office	No	Substructure a	1980s	Not listed	9790	16138	5831	65%	12179	No new baseme						5	5	4			Ramboll	Robert Bird	Ramboll	Pilbrow & Partne	One Click LCA	Project 62	60%	2
85 Gracechurch Stree	Assessment 1 - no de	1306	City of London	EC3V 0AA	22/01155/FULEIA	Planning Portal	Partial demolition of existing building (	30/11/2022	11/10/2023	Granted	Office & Retail	No	Substructure a	1930s	Not listed	8035	37746	8035	370%	37746	New and retaii	Steel					10	37	33	27		Sweco	Robert Bird		Woods Bagot		Project 63	100%	2
88 Grays Inn Road	Assessment 1 - no de	509	Camden	WC1X 8AA	2022/4259/P	Planning Portal	Existing building is being retained and	11/10/2022			Commercial & Re	Yes	Retrofit	1960s	Not listed	1280	1149	0	-10%	0	No new baseme	Reinforced C					4	4	4	2		Max Fordham	Heyne Tillet	Max Fordham	Piercy & Compan	One Click LCA	Project 64	0%	5
90 Whitfield	Assessment 1 - no de			W1T 4EZ													0			0															Project 66		0
9-10 and 11 Angel Co	Assessment 1 - no de	1203	City of London	EC2R 7BH	22/00860/FULMAJ	Planning Portal	Demolition of the existing buildings exi	08/09/2022	22/02/2023		Hotel		New Build				4878			4878								12	9				Greengage					Project 67	100%	1
99 City Road	Assessment 1 - no de	1076	Islington	EC1Y 9DD	P2023/1070/FUL	Planning Portal	Majority of original foundations kept, r	17/04/2023			Office & Retail		Heavy Refurbis	1990s	Not listed	21667	64873	8017	199%	51223				RC Cores / sl			10	36	35		35	Twin and Earth					Project 68	37%	3
Apollo Business Centr	Assessment 1 - no de	851	Lewisham	SE8 5JE	DC/23/130258	Planning Portal	Mixed-use redevelopment of the site f	02/02/2023			Commercial & Re		New Build				23204			23204								27	26				Greengage					Project 69	100%	1
Borough Triangle Site	Assessment 1 - no de	764	Southwark	SE1 6BN	22/AP/3149	Planning Portal	Demolition of all existing buildings/str	05/09/2022			Office & Retail		New Build				93367			93367								46	46				Whitecode					Project 70	100%	1
Boundary House 7 - 1	Assessment 1 - no de	1391	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and the	30/09/2021	19/07/2022		Hotel		New Build				11158			11158								15	14				Hoare Lea					Project 71	100%	1
British Library Extensi	Assessment 1 - no de	1213	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and the	30/09/2021	19/07/2022		Hotel		New Build				11158			11158								15	14				Hoare Lea					Project 71	100%	1
Burgess Industrial Par	Assessment 1 - no de	678	Southwark	SE5 7TJ	21/AP/1342	Planning Portal	12 blocks of betweeen 2-13 storeys	19/04/2021			Commercial & Re		New Build				39696			39696								12	12				Waterman Bui					Project 73	100%	1
Bury House - 31 Bury	Assessment 1 - no de	1002	City of London	EC3A 5AR	20/00848/FULEIA	Planning Portal	The use of prefabricated structural and façade solutions present opportunities for material efficiency, which have been explored and incorporated into the proposed design. Further material efficiency opportunities have been explored by retionalising structural gris and assessing different foundation options to minimise material use.	23/12/2022			Office & Retail		New Build				30170			30170								50	46				Hoare Lea					Project 74	100%	1
Buspace Studios	Assessment 1 - no de	868	Kensington an	W10 5AP	PP/22/07709	Planning Portal	Erection of 2 buildings with groundfloc	23/11/2023			Commercial & Re		New Build				9450			9450								6	5				XCO2					Project 75	100%	1
Canada Water Dockside	Assessment 1 - no de	1244	Southwark	SE16 7PJ	21/AP/2655	Planning Portal	Plot A1 and A2 share basements. Grou	12/10/2022			Office		New Build				61551			61551								25	24				Atelier Ten					Project 76	100%	1
Canada Water Dockside	Assessment 1 - no de	1397	Southwark	SE16 7PJ	23/AP/0565	Planning Portal	Erection of 11-storey building with 1 ba	12/10/2022			Office		New Build				35196			35196								12	11				Arup					Project 77	100%	1
Castle & Fitzroy House	Assessment 1 - no de	1177	Islington	EC2A 4UY	P2022/2893/FUL	Planning Portal	commercial building of 9 storeys (incl.	31/08/2022	12/10/2023		Office		New Build				32541			32541								12	11				Hoare Lea					Project 78	100%	1
Church street residen	Assessment 1 - no de	1164	Westminster	NW8 8EX	21/08160/COOUT	Planning Portal		23/11/2021	30/06/2023		Commercial & Re		New Build				42683			42683								14	13				Max Fordham					Project 79	100%	1
Colechurch House	Assessment 1 - no de	1474	Southwark	SE1 2SX	20/AP/3013	Planning Portal	Erection of elevated 22-storey building	12/10/2020			Office & Retail		New Build				48178			48178								26	22				Sweco					Project 80	100%	1
Cripplegate House 1 G	Assessment 1 - no de	619	City of London	EC1Y 0RR	22/00202/FULMAJ	Planning Portal	Heritage building: retained. 90s Refurb	28/03/2022	01/11/2022		Office	No	Light Refurbis	1890s	Grade II	12989	15649	1443	20%	2588	No new baseme	Steel		RC Cores / sl	RC Cores / sl		9	13	12	3		Hawkins Brow	London Str		HawkinsBrown	One Click LCA	Project 81	11%	4
Dyne House	Assessment 1 - no de	1017	Haringey	N6 5EE	HGY/2023/0328	Planning Portal	Redevelopment of Dyne House, to incl	08/03/2023		Pending	School	No	Heavy Refurbis	1960s	Not listed	3019	6216	925	106%	4122	New and retaii	Reinforced C	Timber and		RC Cores / sl		6	6	5		4	AECOM	Expedition	AECOM	Hopkins Architect	One Click LCA	Project 82	31%	3
Edward Rudolph Hous	Assessment 1 - no de	409	Islington	WC1X 0JL	P2023/2059/FUL	Planning Portal	Demolition of existing building and ere	02/08/2023			Office		New Build				4960			4960								4	4				Verte					Project 83	100%	1
Elephant And Castle S	Assessment 1 - no de		Southwark	SE17 1EU	21/AP/1104	Planning Portal	Multiple buiulding development	29/03/2021	29/07/2021		Commercial & Re		New Build				7330			7330													Hoare Lea					Project 84	100%	1
Evelina Children's Hos	Assessment 1 - no de	1690	Lambeth	SE1 7EH	21/01869/FUL	Planning Portal	12 storey building plus 2 storey basem	26/01/2021			Hospital/Medica		New Build				27306			27306								14	12				AECOM					Project 85	100%	1
Former Blackfriars Cro	Assessment 1 - no de	1440	Southwark	SE1 0BT	22/AP/1347	Planning Portal	Minor material amendments to planni	04/04/2022	10/10/2022	Granted	Office & Retail	Yes	Heavy Refurbis	1960s	Not listed	14459	34264	7811	137%	27616	New and retaii						6	10	8	4		Atelier Ten	AKT II	Atelier Ten	Sheppard Robson	One Click LCA	Project 87	54%	3
Friars Close	Assessment 1 - no de	993	Southwark	SE1 0UL	22/AP/4376	Planning Portal	Erection of 9-storey building with 21-st	28/12/2022			Residential (inc.		New Build				15513			15513								21	21				Max Fordham					Project 88	100%	1
Friary Court 65 Crutch	Assessment 1 - no de	1207	City of London	EC3N 2AE	22/00882/FULMAJ	Planning Portal	Demolition of existing building and red	30/09/2022	27/06/2023		Residential (inc.		New Build				27844			27844								22	20				Waterman Bui					Project 89	100%	1
Gillingham House	Assessment 1 - no de	864	Westminster	SW1V 1HU	23/01690/FULL	Planning Portal	Intensive refurbishment and Refurbish	13/03/2023			Office		Heavy Refurbis			5458	9450	2183	73%	6176	No new baseme						4	8	8	4		Atelier Ten	Stantec				Project 90	40%	3
Hyatt Place	Assessment 1 - no de	800	Hillingdon	UB4 0JN	2385/APP/2022/295	Planning Portal	Partial demolition of the existing buildi	27/09/2022		Pending	Hotel	Yes	Heavy Refurbis	1960s	Not listed	9885	20372	1211	106%	11698							13	14	14	1		Love Design St	Engineeria	Woodcote Pow	Haptic	One Click LCA	Project 91	12%	3
Island Site Woolwich	Assessment 1 - no de	582	Greenwich	SE18 6PF	22/3162/F	Planning Portal	The redevelopment (together with der	22/08/2022		Pending	Office, Retail & R	Yes	Heavy Refurbis	1880s	Grade II	12544	28528	2509	127%	18493	No new baseme						5	8	7	3	6	Create				One Click LCA	Project 93	20%	3
Jubilee House	Assessment 1 - no de	966	London Legacy	E15 1AN	21/00483/FUL	Planning Portal	Application made under the provisions	13/10/2021	21/09/2022	Granted	Residential (inc.		Heavy Refurbis		Not listed	9586	32760	7570	242%	30744							6	39	38	33		eb7	Elliot Woo	DSA		Allford Hall Mona	One Click LCA	Project 95	79%	3
JVC Business Park	Assessment 1 - no de	31450	Brent	NW2 7AF	22/1849	Planning Portal	Full planning application for an Refurbi	19/05/2022	07/12/2022	Granted	Data Centre	No	Heavy Refurbis	2000s	Not listed	28470	47182	0	66%	18712	No new baseme						4	4	4		4	Hoare Lea			Scott Brownrigg	One Click LCA	Project 96	0%	3
Kensington Centre, 66	Assessment 1 - no de	1368	Hammersmith	W14 8UD	2023/00585/FUL	Planning Portal	Demolition of existing building and ere	03/03/2023			Office		New Build				24441			24441								12	11				LCD

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Site name	Assessment Type	0 year A-C	5 year A-C	10 year A-	15 year A-	20 year A	25 year A-	30 year A-	35 year A-	40 year A-	45 year /	50 year /	55 year /	60 year A	Borough	Postcode	Planning reference n	Data source	Description	Submission date	Decision date	Final decision	Building typolo	Change	Classification	Existing b	Listed status	GIA existir	GIA new	GIA demol	GIA % inc	GIA added n	Basement retentio	Existing struc	New structu	Existing sta	New stability	Loading treatr	Existing st	Sea	Iron	Above gro	Added st	Added st	Fire inten	LCA author / Sus	Structural eng	MEP Engin	Architect	LCA Software	Project Ref	%demolisl	Class Ref
1 Appold Street	Assessment 1 - no	449	483	517	551	585	619	654	688	722	756	790	824	858	City of London	EC2M 2QT	22/01200/FULMAJ	Planning Portal	Partial demolition of existing building.	12/12/2022		Pending	Office	Yes	Heavy Refurbish	1980s	Not listed	28992	51869	12718	79%	35595	No new basement	Steel	Steel				10	16	14	6				Hilson Moran	AKT II	MTT	Piercy & Company	One Click LCA	Project 1	44%	3
1 Exchange Square Lo	Assessment 1 - no	576	722	867	1013	1159	1304	1450	1596	1741	1887	2033	2178	2324	City of London	EC2A 2JN	21/00930/FULMAJ	Planning Portal	art demolition of the site for the refurl	27/10/2021	14/06/2023	Granted	Office & Retail	No	Heavy Refurbish	1990s	Not listed	49262	58903	0	20%	9641	No new basement						15	15	14				Sweco	Heyne Tillett S	Sweco	Fletcher Priest Ar	One Click LCA	Project 2	0%	3
1 Museum Street	Assessment 1 - no	802	885	968	1051	1134	1217	1300	1383	1466	1549	1632	1715	1798	Camden	WC1A 1JR	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Office & Retail	Yes	New Build	1960s	Not listed	18841	24791	18841	32%	24791	New and retained l	Reinforced Cc	Reinforced (				17	19	17	2				Scotch Partners	Heyne Tillett S	Scotch Part	DSDHA	One Click LCA	Project 4	100%	1
1 Southwark Bridge R	Assessment 1 - no	393	585	776	968	1159	1351	1543	1734	1926	2117	2309	2500	2692	Southwark	EC4R 1QS	21/AP/0599	Planning Portal	Existing building enhanced and re-clad.	22/02/2021	13/07/2022	Granted	Office	No	New Build	1980s	Not listed	18636	21363	0	15%	2727	No new basement	Reinforced Cc					7	8	8	1				Hurley Palmer Fl	Webb Yates	Hurley Palm	BDG architecture	One Click LCA	Project 5	0%	4
100 And 108 Fetter La	Assessment 1 - no	692	784	875	967	1059	1150	1242	1334	1425	1517	1609	1700	1792	City of London	EC4A 1ES	21/00534/FULMAJ	Planning Portal	Demolition of 100 Fetter Lane and con	18/06/2021	29/09/2021	Granted	Office	No	New Build	1950s	Not listed	6392	13553	6392	112%	13553	New	Steel	Reinforced (				9	14	13	5				Waterman Group	Waterman Gr	Waterman	Fletcher Priest Arc	One Click LCA	Project 8	100%	1
100 Grays Inn Road	Assessment 1 - no	609	696	783	870	957	1044	1131	1218	1305	1392	1479	1566	1653	Camden	WC1X 8AL	2022/4259/P	Planning Portal	Demolition of 100 Gray's Inn Road and 127	14/10/2022		Granted	Office & Retail	Yes	Heavy Refurbish	1960s	Not listed	7893	12747	7893	61%	12747	No new basement	Reinforced Cc	Timber				9	12	11	3				Max Fordham	Heyne Tillett S	Max Fordhe	Piercy & Company	One Click LCA	Project 9	100%	2
101 Whitechapel High	Assessment 1 - no	1035	1153	1270	1388	1505	1623	1741	1858	1976	2093	2211	2328	2446	Tower Hamlets	E1 7RA	PA/20/02726/R	Planning Portal	Demolition of 101 Whitechapel High S	12/01/2021	22/02/2022	Not granted	Office	Yes	Heavy Refurbish	1930s	Not listed	7366	40772	4693	454%	38099	New						5	18	15	13				Buro Happold	Buro Happol	Foster + Partners	One Click LCA	Project 11	64%	3
115 - 123 Houndsditc	Assessment 1 - no	427	516	604	693	781	870	958	1047	1135	1224	1312	1401	1489	City of London	EC3A 7BR	21/00622/FULEIA	Planning Portal	Demolition of existing buildings and co	19/07/2021	01/02/2022	Granted	Office & Retail	No	New Build	1980s	Not listed	14326	66881	14326	367%	66881	New						7	28	24	22				Atelier Ten	AKT II	Norman, Di	Allford Hall Monag	One Click LCA	Project 12	100%	1
120 Fleet Street	Assessment 1 - no	692	807	922	1038	1153	1268	1383	1498	1613	1729	1844	1959	2074	City of London	EC4A 2BE	21/00538/FULEIA	Planning Portal	Demolition of existing River Court build	26/10/2021	26/10/2021		Office	Yes	Heavy Refurbish	1930s	Grade II*	58818	74065	54427	26%	69674	New and retained l	Reinforced Cc	Steel		Minimal interv		7	23	21	1	21	chapmanbdsp	AKT II	chapmanbc	Bjarke Ingels Grou	One Click LCA	Project 13	93%	3
14-21 Holborn Viaduc	Assessment 1 - no	697	821	946	1070	1194	1318	1443	1567	1691	1815	1940	2064	2188	City of London	EC1A 2DE	21/00755/FULMAJ	Planning Portal	Demolition of existing buildings at 14-	03/09/2021	07/02/2022	Granted	Office & Retail	No	Substructure ar	1920s	Not listed	16944	35948		112%	19004							11	15	13	4				Hilson Moran	Heyne Tillett S	Hilson Mor	PLP Architecture	eTool LCD	Project 14	0%	2
1-5 Lower Marsh	Assessment 1 - no	514	590	666	742	817	893	969	1045	1121	1197	1272	1348	1424	Lambeth	SE1 7NT	23/00357/FUL	Planning Portal	2 storeys added supported by existing	02/02/2023		Pending	Office	No	Heavy Refurbish	1990s	Not listed	4927	6294	132	28%	1499	No new basement	Reinforced Cc	RC Cores / s				6	8	7	2				Sweco	Davis Maguire	Sweco	Fathom	One Click LCA	Project 15	3%	3
15 Minories, 57-60 &	62 Aldgate High Street And 2 Castle	1060	1293	1525	1758	1990	2223	2455	2687	2920	3152	3385	3617	City of London	EC3N 1BJ	16/00406/FULMAJ	Planning Portal	Demolition of existing buildings and er	15/04/2016		Pending	Office	No	New Build	1970s	Not listed	20231	32613	20231	61%	32613	New						14	13						Hoare Lea	WSP	Hoare Lea	ACME	One Click LCA	Project 16	100%	1
15-17 Eldon Street	Assessment 1 - no	391	523	654	786	918	1049	1181	1313	1444	1576	1708	1839	1971	City of London	EC2M 7LD	21/00282/FULMAJ	Planning Portal	Demolition of 5th floor level and Eldor	09/04/2021	14/02/2023	Granted	Office	No	Heavy Refurbish	1980s	Not listed	4161	5890	1009	42%	2738	No new basement	Reinforced Cc	Steel	RC Cores / s	RC Cores / st	Load balancing	7	11	9	4				Verte	Frankham Co	Butler and '	Gort Scott		Project 17	24%	3
166 High Holborn	Assessment 1 - no	864	933	1002	1071	1140	1209	1278	1346	1415	1484	1553	1622	1691	Camden	WC1V 6PB	2023/2510/P	Planning Portal	Redevelopment of Selkirk House, 166	27/06/2023		Pending	Commercial & P		New Build			0	493	0		493							6	6				Scotch Partners	Arup				Project 18	100%	1
16A-18 West Central	Assessment 1 - no	631	713	795	876	958	1040	1122	1203	1285	1367	1449	1530	1612	Camden	WC1A 1JJ	2023/2510/P	Planning Portal	Demolition of the existing building to leave just the basement walls and shell (existing retaining walls to	27/06/2023		Pending	Office	Yes	Substructure ar	1900s	Not listed	2712	3247	1718	20%	2253	No new basement	Brickwork anc	Reinforced (	None			3	6	6	3				Scotch Partners	Heyne Tillett S	Scotch Part	DSDHA		Project 19	63%	2
175 Bishopsgate/Exch	Assessment 1 - no	576	722	867	1013	1159	1304	1450	1596	1741	1887	2033	2178	2324	City of London	EC2M 3WA	21/00930/FULMAJ	Planning Portal	Part demolition, Refurbishment to exis	04/04/2022	14/06/2023	Granted	Office & Retail	No	Light Refurbish	1980s	Not listed	55000	58903	5500	7%	9403	No new basement	Reinforced Cc	Steel		Minimal interv		12	12	12					Sweco			Fletcher Priest Arc		Project 20	10%	4
18 Blackfriars Road - (	Assessment 1 - no	787	870	953	1037	1120	1203	1286	1369	1452	1536	1619	1702	1785	Southwark	SE1 9JU	23/AP/1854	Planning Portal	45-storey building above podium. Imp	05/07/2023			Office		New Build				116381			116381							48	48				Arup					Project 21	100%	1
18 Blackfriars Road - I	Assessment 1 - no	861	964	1067	1170	1272	1375	1478	1581	1684	1787	1889	1992	2095	Southwark	SE1 9JU	23/AP/1854	Planning Portal	22 storey building above podium com				Residential (inc.		New Build				19384			19384							25	25				Arup					Project 22	100%	1
18 Blackfriars Road - I	Assessment 1 - no	908	1014	1120	1226	1331	1437	1543	1649	1755	1861	1966	2072	2178	Southwark	SE1 9JU	23/AP/1854	Planning Portal	Erection of ground plus 3-storey podiu	04/07/2023			Residential (inc.		New Build				39578			39578							42	40				Arup					Project 23	100%	1
181 Talgarth Road	Assessment 1 - no	473	584	695	807	918	1029	1140	1251	1362	1474	1585	1696	1807	Hammersmith	W6 8DN	2021/03561/FUL	Planning Portal	Currently clear site, erection of two bu	04/11/2021	11/08/2022		Residential (inc.		New Build				16943			16943							16	16				Stroma					Project 24	100%	1
18-20 Savile Row	Assessment 1 - no	907	951	996	1040	1085	1129	1174	1218	1262	1307	1351	1396	1440	Westminster	W1S 3PW	22/03276/FUL	Planning Portal	Demolition of all existing buildings, exc	16/05/2022	02/03/2024	Not granted	Office & Retail	No	New Build	1950s	Not listed	7684	8724	7684	14%	8724	New and retained l	Reinforced Cc	Steel	RC Cores / s	RC Cores / st		9	9	8	8				Norman, Disney	Elliot Wood	Norman, Di	Fathom	One Click LCA			
19-35 Baker Street	Assessment 1 - no	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	1095	Westminster	W1U 6DD	16/11376/FUL	Planning Portal	Demolition of the existing buildings at	29/11/2016	27/03/2019	Granted	Office, Retail &	No	New Build	1970s		20087	49561		147%	29474	New						10	9				Arup	Hopkins Architect				Project 25	100%	1
19-35 Sylvan Grove	Assessment 1 - no	577	648	719	790	861	932	1003	1074	1145	1216	1287	1358	1429	Southwark	SE15 1PD	20/AP/3252	Planning Portal	Redevelopment of up to 7 storeys and 34 st			Pending	Residential (inc.		New Build				32786			32786							36	35		36		Peroba	Civic Engineer	TP Bennett		Project 26	83%	3
20 Giltspur Street	Assessment 1 - no	523	676	829	982	1134	1287	1440	1593	1746	1899	2051	2204	2357	City of London	EC1A 9DD	22/00867/FULMAJ	Planning Portal	Alteration and Refurbishment of existi	12/09/2022	12/12/2022		Office	No	Heavy Refurbish	2000s	Not listed	8734	11184	2024	28%	4474	No new basement	Steel	Steel	RC Cores / s	RC Cores / st	Load balancing	7	6	6		None req	Norman Disney	Elliot Wood	Norman, Di	Buckley Gray Yeor		Project 30	23%	3
216-220 Blackfriars Ra	Assessment 1 - no	614	893	1173	1452	1732	2011	2291	2570	2849	3129	3408	3688	3967	Southwark	SE1 9JU	20/AP/3250	Planning Portal	Part 22 and part15 storeys + 3 baseme	03/11/2020	20/07/2022		Commercial & P		New Build				40097			40097							25	22				WSP					Project 31	100%	1
25 Mandela Way	Assessment 1 - no	775	819	863	906	950	994	1038	1081	1125	1169	1213	1256	1300	Southwark	SE1 5SZ	23/AP/0950	Planning Portal	Up to 4-storey building.	04/04/2023			Industrial		New Build				15118			15118							4	4				ADW Developme					Project 33	100%	1
257-283 Iderton Road	Assessment 1 - no	562	613	660	708	757	806	855	903	952	1001	1050	1098	1147	Southwark	SE15 1EZ	23/AP/3317	Planning Portal	30-storey accommodation block and 1	09/05/2023			Residential (inc.		New Build				29541			29541							30	30				Atelier Ten					Project 34	100%	1
26 To 46 Lisson Grove	Assessment 1 - no	921	1030	1139	1248	1357	1466	1576	1685	1794	1903	2012	2121	2230	Westminster	NW1 6TT	22/05145/FULL	Planning Portal	Reuse part of existing basement	28/07/2022	06/01/2023		Office & Retail	No	Substructure ar	1960s	Not listed	6192	10624	4404	72%	8836	No new basement						5	8	7	3				Sweco					Project 35	71%	2
302-312 Stratford Hig	Assessment 1 - no	539	663	787	910	1034	1158	1282	1405	1529	1653	1777	1900	2024	London Legacy	E15 1AJ	22/00098/FUL	Planning Portal	Demolition of existing buildings and re	16/03/2022	22/05/2023	Granted	Commercial & P	No	New Build	1930s	Not listed	1337	16203	1337	1112%	16203	New						3	27	25	27				Elementa	Meinhardt	Meinhardt	Henley Halebrow	One Click LCA	Project 36	100%	1
330 Grays Inn Road	Assessment 1 - no	821	956	1092	1227	1362	1498	1633	1768	1904	2039	2174	2310	2445	Camden	WC1X 8DA	2023/0904/P	Planning Portal	Retention of an existing building with	03/03/2023		Pending	Office, Retail &	Yes	Heavy Refurbish	1870s	Not listed	12811	35681	12097	179%	34967	New and retained l	Reinforced Cc	RC Cores / s	RC Cores / st	Load balancing		3	2	5	2	15	XCO2	WSP		Allford Hall Monag	One Click LCA	Project 37	94%	3
334-348 Oxford Stree	Assessment 1 - no	644	908	1173	1437	1702	1966	2231	2495	2759	3024	3288	3553	3817	Westminster	W1C 1JG	21/05110/FUL	Planning Portal	Alterations and Refurbishments to, ar	26/07/2021	01/03/2022	Granted	Office & Retail	No	New Build	1970s	Not listed	33632	43040	0	28%	9408	New and retained l						8	11	10	3				Atelier Ten	AKT II	Atelier Ten	Allford Hall Monag	One Click LCA	Project 38	0%	3
38-42 Southwark Brid	Assessment 1 - no	863	945	1026	1108	1189	1271	1353	1434	1516	1597	1679	1760	1842	Southwark	SE1 9EJ	22/AP/0006	Planning Portal		23/11/2022			Office		New Build				16870			16870							7	7				Arup					Project 39	100%	1
38-70 Baker Street	Assessment 1 - no	572	670	768	866	964	1062	1160	1258	1356	1454	1552	1650	1748	Westminster	W1U 7BT	22/08200/FULL	Planning Portal	Reuse of existing basement	01/12/2022			Commercial & P	No	Substructure ar	1950s	Not listed	19618	33223	19618	69%	33223	No new basement						7	10	9	3		Buro Happold					Project 40	100%	2
45 Hornsey Road	Assessment 1 - no	848	914	980	1046	1111	1177	1243	1309	1375	1441	1506	1572	1638	Islington	N7 7DD	P2022/1943/FUL	Planning Portal	Demolition of existing building and str	25/05/2022	18/07/2023		Residential (inc.		New Build				9983			9983							12	12				Energist					Project 41	100%	1
458 Oxford Street	Assessment 1 - no	578	707	835	964	1093	1221	1350	1479	1607	1736	1865	1993	2122	Westminster	W1C 1AP	21/04502/FUL	Planning Portal		02/07/2021	07/03/2022		Office		New Build				60777			60777							11	11				Arup	Arup	Pilbrow & Partner	One Click LCA	Project 42	100%	1
47-50 Mark Lane	Assessment 1 - no	701	742	783	823	864	905	946	986	1027	1068	1109	1149	1190	City of London	EC3R 7QQ	20/01245/FULMAJ	Planning Portal	Demolition of existing buildings and st	21/12/2022	22/03/2023		Office	No	Substructure ar	1960s	Not listed	16523	30218	16523	83%	30218	No new basement						11	11	11			GXN Innovation	AKT II	Atelier Ten	Orms Designers a	One Click LCA	Project 43	100%	1
55 Gracechurch Stree	Assessment 1 - no	920	970	1020	1071	1121	1171	1221	1271	1321	1372	1422	1472	1522	City of London	EC3V 0EE	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New l	24/08/2020	26/01/2021		Office		New Build				33202			33202							32	29				TFT					Project 47	100%	1
61 - 65 Holborn Viadu	Assessment 1 - no	771	892	1013	1134	1255	1376	1497	1617	1738	1859	1980	2101	2222	City of London	EC1A 2DE	21/00781/FULMAJ	Planning Portal	Erection of new ground plus 12-storey	13/09/2021	01/02/2022		Residential (inc.		New Build				20463			20463							14	12				Hodkinson					Project 48	100%	1
6-12 Verney Road	Assessment 1 - no	877	923	969	1015	1061	1107	1153	1199	1245	1291	1337	1383	1429	Southwark	SE16 3FN	23/AP/0948	Planning Portal	Up to 4-storey building.	05/04/2023			Industrial		New Build				20864			20864							4	4				Insignis					Project 49	100%	1
63 - 66 Coleman Stre	Assessment 1 - no	665	703	740	778	816	853	891	929	966	1004	1042	1079	1117	City of London	EC2R 5AN	21/00694/FULMAJ	Planning Portal	Front façade retention	09/08/2021	14/12/2022		Office & Retail	No	Substructure ar	1870s	Not listed	3851	5220	3851	36%	5220							8	10	9	2		FLATT	Heyne Tillett S	FLATT	Emrys Architects	One Click LCA	Project 50	100%	2
63 New Bond Street	Assessment 1 - no	538	629	719	810	901	991	1082	1173	1263	1354	1445	1535	1626	Westminster	W1S 1RJ	18/07/2022	02/03/2024	Granted	Office & Retail	No	Heavy Refurbish	1920s	Not listed	15079	16524	15079	10%	16524	New and retained l	Reinforced Cc	RC Cores / s	RC Cores / st	Capacity enha		7	4	6	4		Buro Happold	Buro Happo	Foster + Partners	One Click LCA		0%	3
65 Gresham St	Assessment 1 - no	392	445	499	552	606	659	713	766	819	873	926	980	1033	City of London	EC2V 7NQ	22/00848/FULMAJ	Planning Portal	Horizontal Refurbishment at 8th and 9	07/09/2022		Pending	Office	No	New Build	2000s	Not listed	41136	54290	0	32%	13154	No new basement						12	17	14	5	2	Longevity Partne	Buro Happold	Atelier Ten	Squire and Partne	One Click LCA	Project 51	0%	3
7 Millbank	Assessment 1 - no	1154	1267	1380	1494	1607	1720	1833	1946	2059	2173	2286	2399	2512	Westminster	SW1P 3JA	21/01508/FULL	Planning Portal		10/03/2021	08/02/2022		Office		New Build				19414			19414							10	8				Hilson Moran					Project 53	100%	1
70 Gracechurch Stree	Assessment 1 - no	1013	1133	1254	1374	1495	1615	1736	1856	1976	2097	2217	2338	2458	City of London	EC3V 0XL	20/00671/FULEIA	Planning Portal	Demolition of existing buildings. New l	13/10/2020	29/09/2021		Office		New Build				60616			60616							37	33				TFT					Project 54	100%	1
747-759 & 765-775 O	Assessment 1 - no	650	682	714	746	778	810	842	873	905	937	969	1001	1033	Southwark	SE15 1NZ	23/AP/1862	Planning Portal	Partial demolition of existing building	03/07/2023			Residential (inc.		New Build				51386			51386							35	33				Whitecode					Project 55	100%	1
76-78 Upper Ground	Assessment 1 - no	511	617	723	829	935	1041	1147	1253	1359	1465	1571	1677	1783	Lambeth	SE1 9PZ	21/01142/FUL	Planning Portal	Refurbishment, partial demolition and	19/03/2021	23/12/2021		Office	No	New Build	1980s	Grade II	27790	38840	5060	40%	16110	No new basement						6	7	6	1	4	Watkins Payne	Heyne Tillett S	Watkins Pa	Allford Hall Monag	One Click LCA	Project 56	18%	3
79-87 Westminster Br	Assessment 1 - no	598	706	814	923	1031	1139	1247	1355	1463	1572	1680	1788	1896	Lambeth	SE1 7XT	20/03539/FUL	Planning Portal	Erection of ground plus 14-storey buil	13/10/2020			Hotel		New Build				8529			8529							16	14				Meinhardt					Project 57	100%	1
8 - 12 New Bridge Str	Assessment 1 - no	858	981	1104	1227	1350	1473	1596	1718	1841	1964	2087	2210	2333	City of London	EC4V 6AL	20/00622/FULMAJ	Planning Portal	Part demolition of Fleet House, full de	07/02/2022	31/05/2023		Office & Retail	No	Substructure ar	1950s	Not listed	5612	7810	1332	39%	3530	No new basement	Reinforced Cc	RC Cores / s	RC Cores / st	Horizontal Ref		5	11	10	1	11	Hoare Lea	AKT II	Hoare Lea	HOK International	One Click LCA	Project 58	24%	3
81-103 King's Road	Assessment 1 - no	852	980	1108	1236	1364	1492	1620	1747	1875	2003	2131	2259	2387	Kensington anc	SW3 4NX	PP/23/00968	Planning Portal	Demolition of existing building and rec	07/02/2023			Office & Retail	No	Substructure ar	1980s	Not listed	9790	16138	5831	65%	12179	No new basement						5	5	4			Ramboll	Robert Bird G	Ramboll	Pilbrow & Partner	One Click LCA	Project 62	60%	2
85 Gracechurch Stree	Assessment 1 - no	1122	1183	1245	1306	1367	1428	1490	1551	1612	1673	1735	1796	1857	City of London	EC3V 0AA	22/00155/FULEIA	Planning Portal	Partial demolition of existing building	30/11/2022	11/10/2023	Granted	Office & Retail	No	Substructure ar	1930s	Not listed	8035	33746	8035	370%	37746	New and retained l	Steel					10	37	33	27		Sweco	Robert Bird G		Woods Bagot		Project 63	100%	1
88 Grays Inn Road	Assessment 1 - no	277	354	432	509	586	664	741	818	896	973	1050	1128	1205	Camden	WC1X 8AA	2022/4259/P	Planning Portal	Existing building is being retained and	11/10/2022			Commercial & P	Yes	Retrofit	1960s	Not listed	1280	1149	0	-1%	0	No new basement	Reinforced Cc					4	4	4	2		Max Fordham	Heyne Tillett S	Max Fordhe	Piercy & Company	One Click LCA	Project 64	0%	5
9-10 and 11 Angel Co	Assessment 1 - no	776	918	1061	1203	1346	1488	1631	1773	1915	2058	2200	2343	2485	City of London	EC2R 7BH	22/00860/FULMAJ	Planning Portal	Demolition of the existing buildings ex	08/09/2022	22/02/2023		Hotel		New Build				4878			4878							12	9				Greengage					Project 67	100%	1
99 City Road	Assessment 1 - no	705	829	953	1076	1200	1324	1448	1571	1695	1819	1943	2066	2190	Islington	EC1Y 9DD	P2023/1070/FUL	Planning Portal	Majority of original foundations kept,	17/04/2023			Office & Retail		New Build	1990s	Not listed	21667	64873	8017	199%	51223		RC Cores / st					10	36	35	35	Twin and Earth					Project 68	37%	3
Apollo Business Cent	Assessment 1 - no	462	592	721	851	980	1110	1240	1369	1499	1628	1758	1887	2017	Lewisham	SE8 5JE	22/DC/130258	Planning Portal	Mixed-use redevelopment of the site t	01/02/2023			Commercial & P		Retrofit		Grade II		23204			23204							27	26				Greengage					Project 69	100%	1
Borough Triangle Site	Assessment 1 - no	650	688	726	764	802	840	879	917	955	993	1031	1069	1107	Southwark	SE1 6BN	22/AP/3149	Planning Portal	Demolition of all existing buildings/str	05/09/2022			Office & Retail		New Build				93367			93367							46	46				Whitecode					Project 70	100%	1
Boundary House 7 - 1	Assessment 1 - no	804	1000	1195	1391	1586	1782	1978	2173	2369	2564	2760	2955	3151	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and th	30/09/2021	19/07/2022		Hotel		New Build				11158			11158							15	14				Hoare Lea					Project 71	100%	1
British Library Extensi	Assessment 1 - no	840	964	1088	1213	1337	1461	1585	1709	1833	1958	2082	2206	2330	City of London	EC3N 2AF	21/00826/FULMAJ	Planning Portal	Demolition of existing building and th	30/09/2021	19/07/2022		Hotel		New Build				11158			11158							15	14				Hoare Lea					Project 71	100%	1
Burgess Industrial Par	Assessment 1 - no	456	530	604	678	752	826	900	974	1048	1122	1196	1270	1344	Southwark	SE5 7TJ	21/AP/1342	Planning Portal	12 blocks of between 2-13 storeys	19/04/2021			Commercial & P		New Build				39696			39696							12	12				Waterman Buildi					Project 73	100%	1
Bury House - 31 Bury	Assessment 1 - no	695	797	900	1002	1105	1207	1310	1412	1515	1617	1719	1822	1924	City of London	EC3A 5AR	20/00848/FULEIA	Planning Portal	The use of prefabricated structural and facade elements which have been considered and incorporated into the proposed design. Further material efficiency opportunities have been explored by retionalising structural gris and assessing different foundation options to minimise material use.	31/10/2022			Office		Retrofit		Grade II		41294			41294							41	40				Hoare Lea					Project 74	100%	1
Buspace Studios	Assessment 1 - no	667	734	801	868	935	1002	1069	1135	1202	1269	1336	1403	1470	Kensington anc	W10 5AP	PP/22/07709	Planning Portal	Erection of 2 buildings with groundflo	23/11/2023			Commercial & P		New Build				9450			9450							6	5				XCO2					Project 75	100%	1
Canada Water Docksi	Assessment 1 - no	842	976	1110	1244	1378	1512	1647	1781	1915	2049	2183	2317	2451	Southwark	SE16 7PJ	21/AP/2655	Planning Portal	Plot A1 and A2 share basements. Gros	12/10/2022			Office		New Build				61551			61551							25	24				Atelier Ten					Project 76	100%	1
Canada Water Docksi	Assessment 1 - no	953	1101	1249	1397	1545	1693	1842	1990	2138	2286	2434	2582	2730	Southwark	SE16 7PJ	23/AP/0565	Planning Portal	Erection of 11-storey building with 1 b	12/10/2022			Office		New Build				35196			35196							12	11				Arup					Project 77	100%	1
Castle & Fitzroy Hous	Assessment 1 - no	802	927	1052	1177	1301	1426	1551	1676	1801	1926	2050	2175	2300	Islington	EC2A 4UY	P2022/2893/FUL	Planning Portal	commercial building of 9 storeys (incl.	31/08/2022	12/10/2023		Office		New Build				32541			32541							12	11				Hoare Lea					Project 78	100%	1
Church street reside	Assessment 1 - no

Classification	Assumed lifetime	Average A-C Emissions per GIA
Retrofit	0	367
Retrofit	5	510
Retrofit	10	653
Retrofit	15	797
Retrofit	20	940
Retrofit	25	1083
Retrofit	30	1226
Retrofit	35	1369
Retrofit	40	1513
Retrofit	45	1656
Retrofit	50	1799
Retrofit	55	1942
Retrofit	60	2085
Light Extension	0	515
Light Extension	5	663
Light Extension	10	810
Light Extension	15	958
Light Extension	20	1105
Light Extension	25	1253
Light Extension	30	1401
Light Extension	35	1548
Light Extension	40	1696
Light Extension	45	1844
Light Extension	50	1992
Light Extension	55	2139
Light Extension	60	2287
Heavy Extension	0	615
Heavy Extension	5	732
Heavy Extension	10	849
Heavy Extension	15	966
Heavy Extension	20	1082
Heavy Extension	25	1199
Heavy Extension	30	1316
Heavy Extension	35	1433
Heavy Extension	40	1550
Heavy Extension	45	1667
Heavy Extension	50	1784
Heavy Extension	55	1900
Heavy Extension	60	2017
Basement and/or Façade Retained	0	706
Basement and/or Façade Retained	5	801
Basement and/or Façade Retained	10	897
Basement and/or Façade Retained	15	992
Basement and/or Façade Retained	20	1087
Basement and/or Façade Retained	25	1183
Basement and/or Façade Retained	30	1279
Basement and/or Façade Retained	35	1374
Basement and/or Façade Retained	40	1469
Basement and/or Façade Retained	45	1565
Basement and/or Façade Retained	50	1660
Basement and/or Façade Retained	55	1756
Basement and/or Façade Retained	60	1851
New Build	0	779
New Build	5	887
New Build	10	994
New Build	15	1102
New Build	20	1209
New Build	25	1316
New Build	30	1424
New Build	35	1531
New Build	40	1639
New Build	45	1746
New Build	50	1853
New Build	55	1961
New Build	60	2068

November

Potential new project	Borough	Ref	Class			RP Notes
The Yard Theatre	LLDC	23/00283/FUL	Light extension			
Meridian Steps	LLDC	22/00178/FUL	New build			
57 Berkshire Rd	LLDC	23/00009/FUL	New build			info ready to populate Done
East Village Plot N16	LLDC	23/00101/FUL	New build			GLA Spreadsheet in pd WIP
6-7 Park Lane	LLDC	23/00229/FUL	New build			No carbon numbers/ r Data not good enough
Vittoria Wharf	LLDC	23/00248/FUL	New build			results in carbon repo Data not good enough
The Wick Hotel	LLDC	23/00300/FUL	New build			info only in WLCA repc WIP
90 White Post Lane	LLDC	23/00333/FUL	New build			info only in WLCA repc WIP
Stratford International	LLDC	19/00391/FUL	New build			info only in WLCA repc WIP
Vulcan Wharf	LLDC	20/00307/FUL	New build			info only in WLCA repc WIP
Legacy Wharf Phase 2	LLDC	21/00395/FUL	New build			info only in WLCA repc WIP
34-38 Wallis Road	LLDC	23/00234/FUL	New build			GLA Spreadsheet in pd WIP
Jubilee House	LLDC	21/00483/FUL	Heavy extension			info only in WLCA repc WIP
45 Hornsey Road	Islington	P2022/2063/FUL		New build + Refurbishment of existing listed building (including internal and external alterations) alongside proposed single storey courtyard infill extension, four storey rear addition and single storey roof extension to provide Class E(g) floorspace		
Liverpool Street Station	City of London	23/00453/FULEIA		Mix of new build and refurbishment		
The Rex	Kingston	21/02313/FUL	Heavy extension			
Victoria House	Greenwich	23/2747/F	Façade retained			23/00009/FUL
Island Site, Woolwich	Greenwich	22/3162/F		Mix of new build and refurbishment		23/00248/FUL
Hyatt Place	Hillingdon	2385/APP/202	Heavy extension			23/00300/FUL
Dyne House	Haringey	HGY/2023/032	Heavy extension			23/00333/FUL
JVC Business Park	Brent	22/1849	Heavy extension			19/00391/FUL
65 Gresham St	City of London	22/00848/FUL	Heavy extension			20/00307/FUL
Former Blackfriars Crow	Southwark	22/AP/1347	Heavy extension			21/00395/FUL
South Molton Triangle	Westminster	22/04610/FUL	Multiple: separated as different properties. North Block & South Block new builds. All others refurbishments.			23/00234/FUL
SMT North Block			Façade retained			
SMT South Block			Façade retained			
SMT 40-46 Brook St			Retrofit			
SMT Running Horse Pub			Retrofit			
SMT SMS and Browns			Retrofit			
334-348 Oxford Street	Westminster	21/05110/FUL	Heavy extension			
Leconfield House	Westminster	23/02111/FUL	Heavy extension			
101 Whitechapel High St	Tower Hamlets	PA/20/02726/I	Multiple: partial retention of existing and new builds			
1 Exchange Square Lond	City of London	21/00930/FUL	Heavy extension	Part demolition of the site for the refurbishment and extension to the existing facade		
The Parcels building	Westminster	18/10493/FUL	Heavy extension	No WLCA	GIA = 5450m2	

April

63 New Bond Street	Westminster	23/08027/FUL	Heavy extension	Accepted		
18-20 Savile Row	Westminster	22/03276/FUL	New build	Rejected		

Appendix D – AECOM Westminster City Plan Review Note

Draft Westminster City Plan 2019-2040 Review

Introduction

We have reviewed the proposed "New Policy 43: Retrofit First" within the Draft Westminster City Plan 2019-2040, available via: https://www.westminster.gov.uk/planning-building-and-environmental-regulations/planning-policy/westminsters-planning-policies. We have provided comments on the stated targets (see extract below) and additional policy wording set out in pages 174 to 178.

This review has been prepared for London Property Alliance and Gerald Eve at their request. We are not responsible for how London Property Alliance or Gerald Eve may use the information as part of a wider review of Regulation 19: the Westminster City Plan or for other purposes including work with their clients.

Building type	LETI band equivalent
Non-residential buildings	Target A Minimum B
Residential (including mixed-use) under 18 metres in height	Target B Minimum C
Residential (including mixed-use) over 18 metres in height	Target C Minimum D
Exceptions (site constraints, fast track affordable housing schemes, custom-build and self-build homes)	Lowest deliverable embodied carbon without affecting provision of affordable housing

Figure 1: Extract from the draft City Plan summarising the proposed stretch and minimum targets by building type

The document further states:

Use of targets and absolute minimums

43.9 / The use of LETI Band A is the current stretch target for non-residential schemes. The use of LETI Band B is the current stretch target for residential and mixed-use schemes below 18 metres. LETI Band C is the current stretch target for residential and mixed-use schemes above 18 metres. The targets differentiate heights buildings which include residential development to reflect the wider range of low-carbon materials that are available for use in residential buildings below 18 metres.

> 43.10 / / It is expected that these benchmarks will likely become business as usual during the City Plan period as building standards improve and the push for sustainable development gains greater momentum. The Whole Life-Cycle Carbon assessment should provide detail on the measures taken to lower embodied carbon, including an assessment of the design performance against the target benchmarks.

And, for both of the housing targets:

> "C". Where development is proposing the delivery of policy compliant levels of affordable housing (35% for private sector land, and 50% for public sector land), applicants should demonstrate the maximum embodied carbon reductions deliverable without affecting the viability of affordable housing delivery.

Key Challenges

We are fully supportive of addressing embodied carbon emissions in light of the climate change emergency and ensuring the impacts from both new development and refurbishment are minimised, adopting a retrofit first approach. However, we believe there may be some challenges associated with meeting New Policy 43. This may result in the payment of carbon offsets to Westminster City Council (WCC) in the early years of its adoption. Currently, they do not apply to embodied carbon emissions.

The proposed upfront embodied carbon LETI-based target values for non-residential development are challenging to achieve.

The Targets

The proposed target for new non-residential buildings is LETI band A for upfront embodied carbon emissions, with an absolute minimum rating of B, as shown above in Figure 2. The bands are shown as $kgCO_2e/m^2$ values by sector in Figure 2.

Upfront Embodied Carbon, A1-5 (exc. sequestration)

	Band	Office	Residential (6+ storeys)	Education	Retail
	A++	<100	<100	<100	<100
	A+	<225	<200	<200	<200
LETI 2030 Design Target	A	<350	<300	<300	<300
	B	<475	<400	<400	<425
LETI 2020 Design Target	C	<600	<500	<500	<550
	D	<775	<675	<625	<700
	E	<950	<850	<750	<850
	F	<1100	<1000	<875	<1000
	G	<1300	<1200	<1100	<1200

Figure 2. Current LETI Targets (units $kgCO_2e/m^2$)

The LETI targets do not differentiate between new-build and retrofits and it is acknowledged by LETI that to achieve the higher bands an element of retrofit is required.

In relation to the Westminster City Plan, the Embodied Carbon Evidence Base for the City Plan also notes a combination of new build and retrofit will be required, see section below.

Embodied Carbon Evidence Base for the City Plan[1]

It is noted within the Embodied Carbon Evidence Base for the City Plan that to achieve LETI band A or lower *"would require higher levels of timber or recycled materials not currently available on the market at scale"*. The executive summary of this document goes on to state that:

"Even adopting good practice design and high levels of material substitution, each of the buildings still will not achieve carbon reductions in line with UK Net Zero Target, 1.5 degrees and The Paris Agreement (LETI Band A or below). Achieving further reductions is much more likely to be made possible by re-using structure and materials from existing buildings, by promoting retrofit and the circular economy."

The Embodied Carbon Evidence Base for the City Plan does however state that LETI band B would be achievable for the common building archetypes modelled, based on *"a moderate 2-8% uplift in cost for office and mixed use buildings"*. This said, the measures listed against non-residential buildings such as offices include the use of mass timber structures and Ground Granulated Blast-furnace Slag (GGBS). The use of mass timber for larger buildings is very challenging due to the additional fire and insurance limitations, in addition to challenges in procurement and constructability. Furthermore, utilising GGBS as a carbon reduction measure is advised against because the supply of GGBS is limited, meaning that any increase in GGBS use in one location, would result in a decrease elsewhere, balancing out global emissions. In addition, the local supply of GGBS is anticipated to become more constrained due to the closure of UK-based blast furnaces. It is therefore recommended, as per IStructE guidance[2], that GGBS is only utilised whereby there is a technical requirement for its use, rather than as a mechanism for lowering carbon emissions.

City Plan Topic Paper: Retrofit First and Reducing Embodied Carbon

A second document has been prepared, *"City Plan Topic Paper: Retrofit First and Reducing Embodied Carbon"*[1].

This document shows that none of the current new-build developments within Westminster have an upfront embodied carbon of LETI band B or better, see Figure 3, highlighting the challenge of achieving these targets.

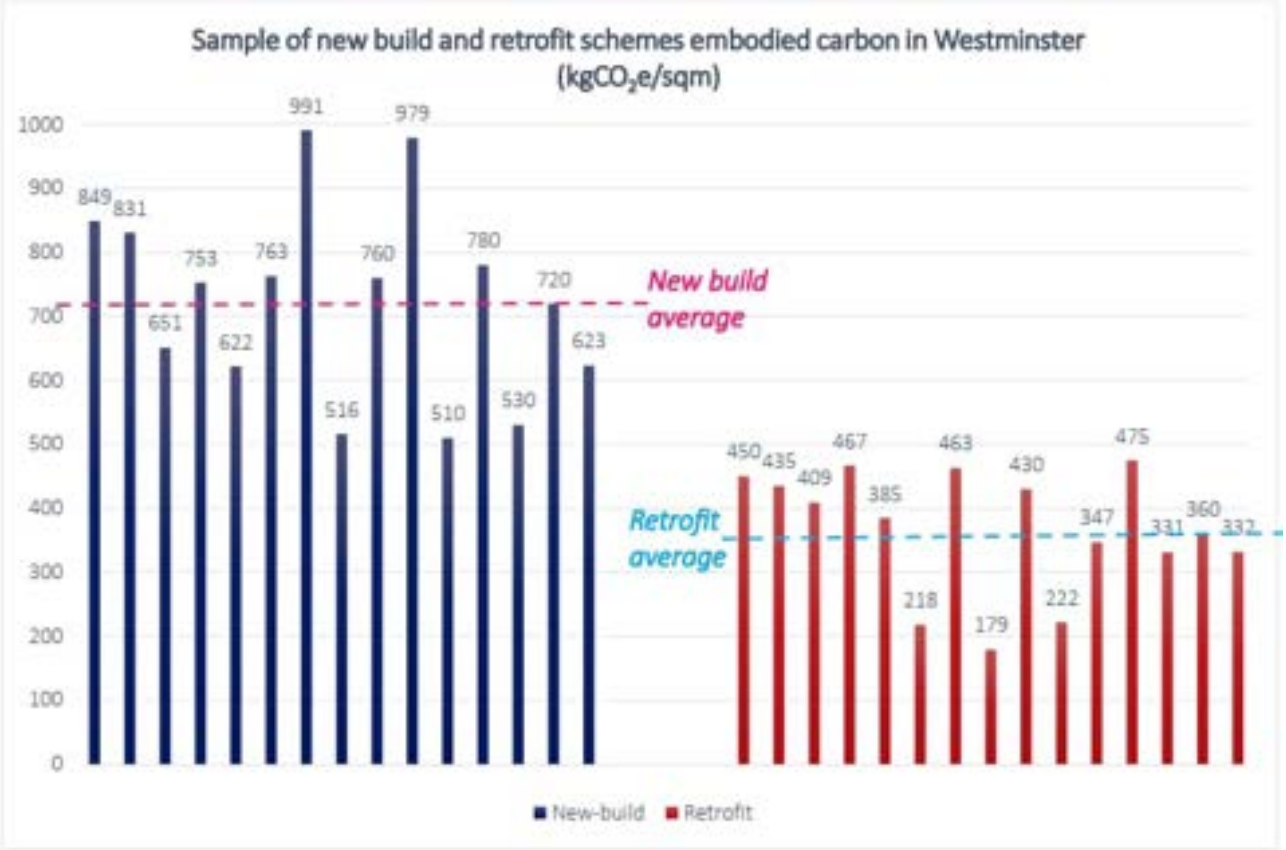

Figure 3. Screenshot from WCC Topic Paper: Retrofit First and Reducing Embodied Carbon Showing Current Trends in Westminster

[1] Available from: https://www.westminster.gov.uk/planning-building-control-and-environmental-regulations/planning-policy/city-plan-partial-review
[2] Available from: https://www.istructe.org/resources/guidance/efficient-use-of-ggbs-in-reducing-global-emissions/

Evidence of achieved embodied carbon levels is also available via the UK Net Zero Carbon Building Standard (NZCBS) development work. As part of this project, upfront embodied carbon data was collected for a large number of buildings across the UK.

The current proposed Westminster City Plan target of LETI band A is *lower than the 25th percentile of all data collected for non-domestic buildings as part of the Net Zero Carbon Building Standard (NZCBS), as per the screenshot below. The 'absolute minimum rating of B', which is equal to 475 kgCO2e/m2 for offices, 400 kgCO2e/m2 for education, and 425 kgCO2e/m2 for retail, is also not achieved for the 25th percentile of data collated for any these building types.*

Sector	All	Offices	Homes*	Commercial residential	Logistics / warehouses	Healthcare	Schools	Higher education	Culture and entertainment	Science and technology
Number of projects	499	81	204	78	20	9	82	10	21	18
Min	179	179	228	250	333	409	363	409	330	446
25th %ile	468	481	493	419	371	512	480	520	517	491
50th %ile (median)	561	592	566	464	400	589	579	616	600	569
Mean	568	618	574*	511	455	611	574	594	627	582
75th %ile	639	732	632	580	491	687	633	674	760	642
Max	1344	1344	1101	972	852	927	866	739	866	866

Figure 4. Screenshot of Upfront Embodied Carbon Data Collated as Part of the Net Zero Carbon Building Standard (units kgCO2e/m2)

Based on the above (Figures 3 and 4), the draft policy targeting LETI band A ratings for non-residential buildings is not achievable through solely new construction activities without at least some level of reuse (for example reuse of foundations). Reuse will likely support the minimum rating of 'B' being achieved but it will still be challenging to achieve the 'A' rating. Furthermore, it is noted that re-use of foundations is dependent on the site. As such it is likely to effectively mean that development is comprised of retrofits rather than new buildings until building technology advances sufficiently to be able to meet these targets for new buildings. However, the timescales for this are uncertain and based on myriad of factors. New builds may be possible if carbon offsets are paid.

Residential and Mixed-Use Targets

The proposed residential embodied carbon targets are less onerous than the non-residential targets. The draft City Plan states that new residential buildings, including mixed-use, over 18 metres in height should target an upfront embodied carbon equivalent of LETI band C (less than 500 kgCO2e/m2) with an absolute minimum rating of band D (less than 675 kgCO2e/m2), see Figure 1.

For residential buildings, including mixed-use below 18 metres in height, a target of LETI band B (less than 400 kgCO2e/m2) and an absolute minimum rating of band C (less than 500 kgCO2e/m2) should be achieved.

Analysis from the Future Homes Hub (FHH) demonstrates that these values are likely to be achievable for new-build residential development, as shown below in Figure 5.

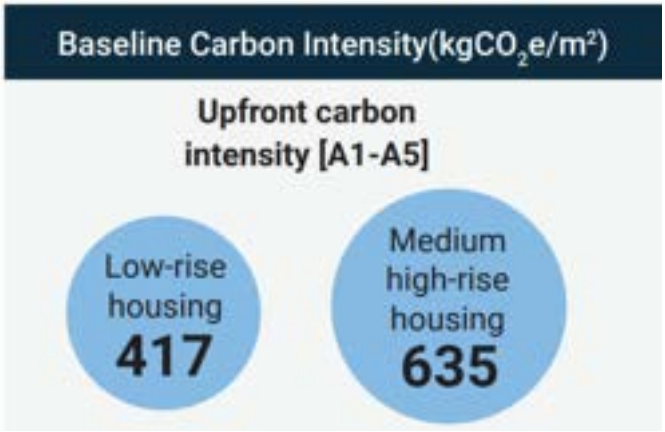

Figure 5. Future Homes Hub Upfront Carbon Intensity Baselines for Residential Development

It is noted that the targets within the draft City Plan are for residential and mixed-use development. This means that by combining retail or office with residential, these less onerous residential targets could be used. Therefore, this encourages developers to build mixed-use residential developments within Westminster, rather than solely non-domestic buildings.

LETI Targets Only Address 4 Sectors

The LETI Targets only exist for four sectors: office, residential (6+ storeys), education, and retail. To address this, the draft City Plan states that:

"For developments involving the construction of bespoke buildings which do not have a recognised LETI benchmark, or self-build or custom-build homes, applicants should achieve the maximum reductions in upfront embodied carbon deliverable, and these should be fully justified."

It is noted that this provides a level of ambiguity for developments that do not align with the LETI sectors. There is no guidance on how to evidence maximum reductions have been achieved, or from what baseline.

Stage of Assessment

There is no clear guidance on the stage of assessment or recognition of how this may affect the upfront embodied carbon calculated values and therefore the LETI band. At early stages of assessment, although there is the largest potential to reduce emissions, the results are the most inaccurate due to the number of assumptions required, and generic rather than "low carbon variants" of materials are typically modelled . Furthermore, the RICS 2nd Edition Guidance[3] includes a new methodology for adding contingency factors to results. Following the RICS approach could lead to adding contingency to upfront embodied carbon results of up to 26% depending on the stage of design, basis of information, and carbon data uncertainty. This will have implications for demonstrating achievement of targets and highlights the importance of the stage of assessment.

Carbon Offset Payments

The Draft City Plan states that:

"In exceptional circumstances where there are site specific constraints that make the benchmarks undeliverable, any shortfall against the minimum embodied carbon targets will be offset through financial contribution towards the council's offset fund."

and

" 43.11 /…. Where applicants fully demonstrate the embodied carbon benchmark is undeliverable due to site specific constraints or justified bespoke design parameters, payments are to be made to the carbon offset fund in lieu of meeting embodied carbon targets on site…"

It is noted by AECOM that the Council's offset fund has an **offset cost of £880 per tonne of carbon**, meaning that this could be a significant cost impact for developments.

On the other hand, New Policy 43 notes:

"43.11 / …Applicants will also be able to credit embodied carbon reductions below the minimum benchmarks to the total carbon offset payment calculated in their energy statement. Further details are provided in Policy 40 (Energy). Further details on how this is to be calculated will be provided in the Planning Obligations and Affordable Housing Supplementary Planning Document (2024)….."

This is also discussed within the Topic Paper. Here it is noted that there is the potential for embodied carbon reductions below the minimal benchmark set to be credited to the total amount of carbon to be offset in an applicant's energy statement. An example of how this would work is displayed within the Topic Paper as below.

[3] Available from: https://www.rics.org/profession-standards/rics-standards-and-guidance/sector-standards/construction-standards/whole-life-carbon-assessment

Example 10,000sqm building – powered entirely by electricity	
Energy Statement total carbon (t/CO_2e)	80t X offset period (30 years) = 2,400t
Price (including electricity discount)	£792,000
Target total embodied carbon: 475kg/sqm (t/CO_2e)	4,750t
Embodied carbon actual: 430kg/sqm	4,300t (difference: 450t)
Discount from offset payment	450t X £880 £396,000
Total carbon offset payment	**£396,000**

Figure 6. Example of Calculation for Offset Payment Based on Introduction of Draft Policy

Demolition and new construction is possible

The draft City Plan notes the following:

"43.6 / …..Where the demolition of an existing building occurs and where the development is a major scheme, development should aim to meet the relevant target embodied carbon benchmark. Where the target benchmark is not possible, a minimum embodied carbon benchmark will still apply to limit the overall carbon footprint of the development…."

We have noted above challenges with the minimum embodied carbon benchmark for new build non-domestic buildings.

"43.7 / Where there are site specific constraints that make a benchmark unachievable, applicants should provide robust justification of the building design, and should include a breakdown of the embodied carbon in the structure, façade and MEP, demonstrating how these align with the relevant benchmark, and providing justification for features which cannot meet the benchmark."

The LETI Embodied Carbon Primer[4] and the GLA both contain assumed percentages for building element impact, although it is noted that the percentages given within the Embodied Carbon Primer are for cradle to gate carbon emissions (EN 19578 life cycle modules A1-A3) only, opposed to upfront carbon emissions (EN 19578 life cycle modules A1-A5) as per the LETI targets referred to within the Draft Policy. Based on AECOM experience, these percentages can vary greatly by development depending on the form and function of the building.

The City Plan notes the following:

"43.3 / Where whole-life carbon assessments are relied upon to justify demolition and construction of a new building, these must follow the most up to date RICS methodology and the Mayor of London's Whole Life Carbon London Plan Guidance (LPG) and be presented as an appraisal of the construction options for reuse, refurbishment, retrofit, deep retrofit and demolition. When presenting comparisons between retrofit and newbuild options, a realistic whole life cycle for a retrofit scheme should be used which accounts for the extended life of a building resulting from a high-quality retrofit; and how the material choices for a retrofit option and a newbuild both aim to deliver the lowest embodied carbon achievable."

The use of RICS guidance has implications for developers. The latest RICS guidance is the 2nd Edition WLCA Professional Statement (PS), which includes the requirement to account for:

*"**Emissions from any demolition that has already occurred via a previous site owner** or event must still be considered within the scope of the WLCA and be reported in A5.1**, if demolition occurs within three years of the sale or new proposal**."*

This means that for a developer buying a recently demolished 'virgin' site, they would still be required to account for the impacts from the demolition despite not owning the site at that time.

[4] Accessed from: https://www.leti.uk/ecp

Points to Note

Use of LETI Targets for Residential Buildings Under 18m

The LETI targets for residential are buildings are solely in reference to developments above 6 storeys. This means that although they are applicable for the proposed policy for buildings above 18 metres, they are less applicable for the full range of residential buildings under 18 metres. The proposed WCC policy is currently targeting a LETI band 'B' (or minimum 'C') for these developments, which is the equivalent of <400 or <500 $kgCO_2e/m^2$ for upfront embodied carbon, respectively. Based on findings from the Future Homes Hub, this should be achievable for these building types, assuming buildings over 18 metres are "medium rise".

The Basis of LETI Targets is Limited

With regards to general use of LETI targets, these targets are currently based on a limited amount of data, as displayed below[5]. In addition, large quantities of this data pertains to structural only embodied carbon emissions, thereby creating uncertainty within how these figures have been scaled up to create targets covering the whole building. This is particularly of note for residential developments, where there are only 7 no. "whole" projects underpinning these benchmarks, and education, where there are only 4 no. projects underpinning these benchmarks (since the Arup and Price and Myers benchmarks shown below reflect only emissions from structures).

UK building data only

Removed data that does not declare of assessment

153 data set of project data used for the benchmark update

Data sets	Cundall/ Targeting Zero	Arup	Price and Myers	Hilson Moran
Office	48	8	7	6
Residential	7	3	32	0
Education	3	0	28	1
Retail	6	0	6	2

*Arup and Price and Myers only provided emission from structures

Figure 7. Basis of Data for LETI Targets[5]

Alignment with LETI and UKGBC

The City Plan guidance states that

"where subsequent benchmarks are established by other bodies, for example the UKGBC, these may be used where they have been aligned to LETI benchmarks".

It should be noted that LETI are involved in the development of the Net Zero Carbon Building Standard (NZCBS) referenced above, an industry initiative to align on net zero carbon targets and scope. Therefore, it is anticipated that LETI may align to this standard, rather than others aligning with LETI. It is also noted that the BREEAM guidance is updating and the new version 7 New Construction guidance anticipated to be launched in Summer 2024 will include embodied carbon targets, however it is unclear if or how these will relate to LETI.

Format for Submission of Carbon Results

The format for submission of carbon results is not clear. LETI is referenced throughout, however it is not stated that LETI's Embodied Carbon Reporting Template should be utilised. RICS 2nd Edition WLCA guidance is also noted and has its own reporting template which is more onerous to complete than the LETI reporting template. This is because the RICS 2nd Edition WLCA guidance reporting template separates results in much more detail than both LETI and the GLA's WLCA reporting template.

[5] Extracted from the launch webinar: *https://www.leti.uk/carbonalignment*

Scope Differences Between LETI and GLA

An applicant preparing embodied carbon calculations in support of a planning application will need to prepare a different summary for WCC (who reference LETI bands) and for the GLA because there are some scope differences between LETI and GLA. GLA request that all building elements are included within the scope of the assessment, whereas LETI targets do not require the reporting of renewable electricity generation (e.g. photovoltaics), external works, or non-fixed fittings, furnishing and equipment (FF&E). This said, there is still functionality to incorporate these within the LETI results tool.

Public Display of Total Embodied Carbon

It is noted that:

"43.8 / Following completion, major schemes will be required to publicly display the total embodied carbon associated with the development, ensuring the information is visible to visitors and occupants of a building."

Further details of the format are not provided. It is not clear whether this will be secured via a planning condition.

A new planning deliverable will be required.

The draft City Plan states:

"43.14 / ….A Retrofit Plan will be required in line with the Sustainable Design Statement to summarise how the retrofit policy has been complied with and any issues relevant to the proposal….."

Prepared by: Kallum Desai, Senior Sustainability Consultant, AECOM

Reviewed by: Nathan Shelley, Principal Sustainability Consultant, AECOM & Alison Crompton, Regional Director, AECOM

Issued: 19 April 2024

Appendix E – UKNZCBS Technical Update and Consultation Final v3

UK Net Zero Carbon Buildings Standard

Technical Update & Consultation

14 June 2023

[redacted]

BBP BETTER BUILDINGS PARTNERSHIP · bre · CARBON TRUST · CIBSE · The Institution of Structural Engineers · LETI · RIBA Architecture.com · RICS · UKGBC · PIA · RIAS · ice

Hello!

Through the determination and hard work of members of our task groups, sectors groups, and data providers we have been able to meet our next important milestone. On behalf of the team, I am delighted to report that we are now at the stage where we can provide you with a Technical Update & Consultation, which forms our second Quarterly Update.

This consultation document describes the technical fundamentals behind the Standard, sharing the metrics that buildings will be assessed against to demonstrate that they are aligned with what is required for the UK built environment to achieve Net Zero Carbon.

It then describes the work that has been undertaken to gain an understanding of the current operational energy and embodied carbon performance levels that will provide the context of technical feasibility for various sectors. This is the main focus of the consultation.

Finally, the consultation outlines the approach being taken to determine relevant budgets for carbon and energy, which inform the limits that will follow in later stages of work.

I also wanted to take the time to thank you for being involved in our consultation – and helping to shape the future definition of a Net Zero Carbon building.

This is an extremely important initiative that I am hugely passionate about. We have a lot of people giving up their time on this and I am grateful for all their hard work.

By completing our questionnaire, you can make a real difference to sustainability across the built environment, so I ask that you take the time to do so.

Thank you again for being a part of our consultation and I hope you find our Technical Update useful.

Clara Bagenal George

Chair, Technical Steering Group

UK Net Zero Carbon Buildings Standard

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UK Net Zero Carbon Buildings Standard

Purpose of this Technical Update & Consultation

We want your views on:

- **The overall technical proposals for the Standard**
- **The achievability of the new build performance levels**
  - These levels will be used to inform the final NZC limits

Aims

The team developing the Standard have spent the last 9 months developing its **technical basis**, and establishing **new build performance levels** for a wide range of sectors.

We are sharing this Technical Update & Consultation document to allow the wider industry to review the proposals and performance levels, and provide us with feedback.

The performance levels do not represent the energy and embodied carbon limits that buildings would have to meet. They provide the context of technical feasibility for the various sectors and provide a summary of the data received in the call for evidence.

Who should respond?

We are interested in the views from across all built environment stakeholders, and interested we have broken the consultation into various themes.

Glossary: *Performance levels: These levels provide the technical evidence on what can be achieved by the individual sectors, based on benchmarking, case studies and modelling. They are not limits or targets, but will be used to inform the NZC limits and targets in the next stage of work.*

How to engage with the consultation

Responding to the consultation

There are a series of talking points raised within this document which are posed as questions in our online survey. Please submit your responses to these for our consultation.

Given the technical nature of certain sections of the consultation document, it is expected that not all stakeholders will want to respond to all sections.

We are expecting a high volume of responses to this consultation. Please ensure you use the online survey for your comments to ensure we are able to process and incorporate your feedback.

The team will also be conducting a webinar at **12pm on Monday 10 July 2023** to provide industry with answers to pertinent issues raised throughout the consultation. You can sign up here.

Consultation period

Please submit your views on the consultation between

Wednesday 14 June - Thursday 31 August 2023.

Data and performance levels

We are particularly interested to get your feedback on the performance levels which have been provided in answer to our Call for Evidence, for both operational energy and embodied carbon, and we encourage responses from those who have an understanding of technical achievability for these levels.

Please also note that we are collecting more embodied carbon data – please refer to **6. New Build Embodied Carbon Performance Levels** for more information.

These levels provide technical evidence for what is currently being achieved by individual sectors within the built environment, based on benchmarking, case studies and modelling.

They are not intended to be limits or targets, but will be used to inform the NZC limits and targets in the next stage of our work.

1. Background

Origin, principles, and progress

Origins of the Standard

In May 2022 a cross-industry Steering Group, representing stakeholders across the built environment, joined together to develop a Standard for verifying UK buildings as Net Zero Carbon (NZC).

The UK Net Zero Carbon Buildings Standard, or "The Standard", will enable our industry to robustly verify that our built assets are Net Zero Carbon, and in line with our nation's climate targets.

What will the Standard cover?

The Standard will set out metrics by which net zero carbon performance is evaluated, and provide performance targets and limits.

The Standard will be science-based, aligned with delivering a Net Zero Carbon UK by 2050 and a 78% reduction by 2035 in the UK in order to limit global warming to 1.5°C.

The Standard will incorporate targets and limits that have been derived from an analysis of the UK's Sixth Carbon Budget and from data gathered across different sectors within the built environment.

Who is it for?

The Standard is for developers, contractors, asset owners and managers, occupiers, investors, financiers and funders, consultants, building industry professionals, building managers and product/material manufacturers, suppliers, and distributors.

It is for anyone who wants to either fund, procure, design, or specify a Net Zero Carbon building and anyone wanting to demonstrate that their building is Net Zero Carbon in accordance with an industry-agreed Standard.

Principles of the Standard

Overall principles

- Providing clear, consistent definitions and trajectories for Net Zero Carbon (NZC) buildings and the built environment. This will make it simpler to specify and deliver NZC, and also prevent unfounded “NZC” claims
- Driving market transformation through industry engagement, uptake and support
- Ensuring that the Standard is easy to understand and use, with achievable but stretching requirements
- Aligning asset-level requirements with the system-level changes needed for a NZC UK.

Technical Principles

- Creating a Standard which is science-based
- Including both operational and embodied carbon
- Prioritising energy efficiency and eliminating the performance gap
- Prioritising the reuse of existing buildings and assets
- Adopting a whole life carbon approach
- Enhancing renewable energy generation
- Ensuring that buildings are responsive to electricity grid fluctuations

More detailed explanations of these principles can be found in our April Quarterly Update.

Application of the Standard

The approach will be applicable to both existing and new buildings.

To start with, the focus will be on the most common building typologies, especially those for which industry stakeholders have already robust performance data available to inform the setting of performance targets.

The Standard is seeking to develop performance targets and limits for the following typologies.

Homes	Sport and Leisure	Hotels
Offices	Retail	Commercial Residential
Schools and Further Education	Culture and Entertainment	Logistics / Warehouses
Healthcare	Heritage	Datacentres
	Science and Technology	

The people behind the Standard

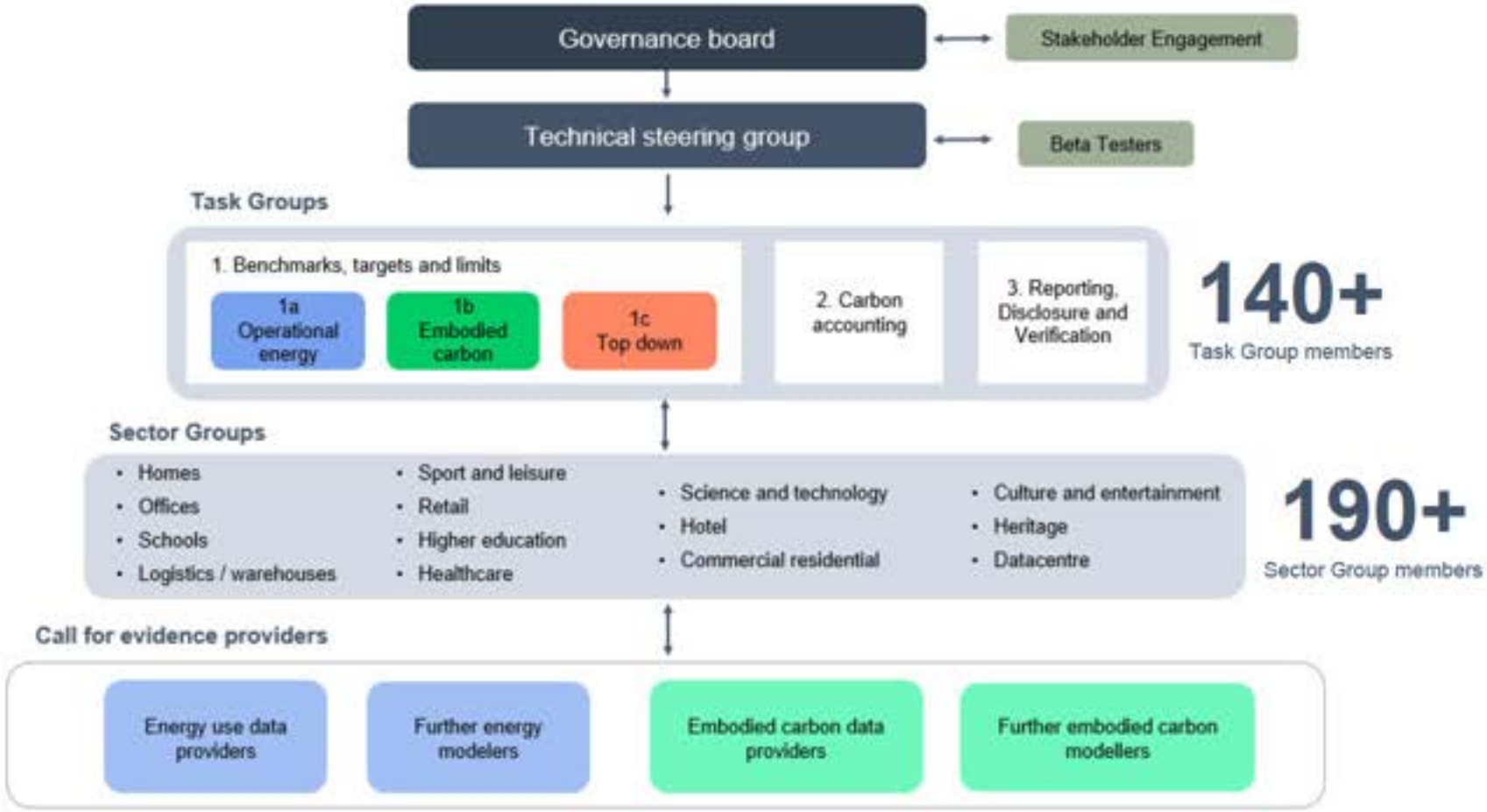
The Standard's project team is made up of more than 350 voluntary experts from all parts of the built environment industry.

The **Governance Board** oversees the development of the Standard, leads on stakeholder engagement, and secures resources for the Standard.

The **Technical Steering Group** (TSG) oversees the specification, design and development of the Standard. The TSG is supported by a series of Task Groups and Sector Groups.

The **Task Groups** develop the technical basis for the Standard alongside the TSG, and will draft parts of the Standard.

The **Sector Groups** provides expertise on the decarbonisation of that sector, by identifying sources of data, processing data from the call for evidence, producing sector-specific information such as metrics and benchmarks, and supporting the development of performance levels.



More information on these groups can be found in our April Quarterly Update.

Developing Net Zero Carbon Limits

Two key principles for the Standard are that it should be stretching but achievable, and also that is should be science-based.

To reconcile these aims, two workstreams have been established to develop the Net Zero Carbon limits.

The **bottom-up workstream** will use benchmarking, case studies and modelling to create Levels of Performance.

The **top-down workstream** will establish the relevant national carbon 'budgets' which show what the industry needs to achieve to play its part in a NZC UK.

The outputs from these workstreams will then be combined to create NZC limits and targets for the Standard.

This consultation issue relates to the New Build Performance Levels, which are not the final NZC limits. More information on the development of limits can be found in our April Quarterly Update.

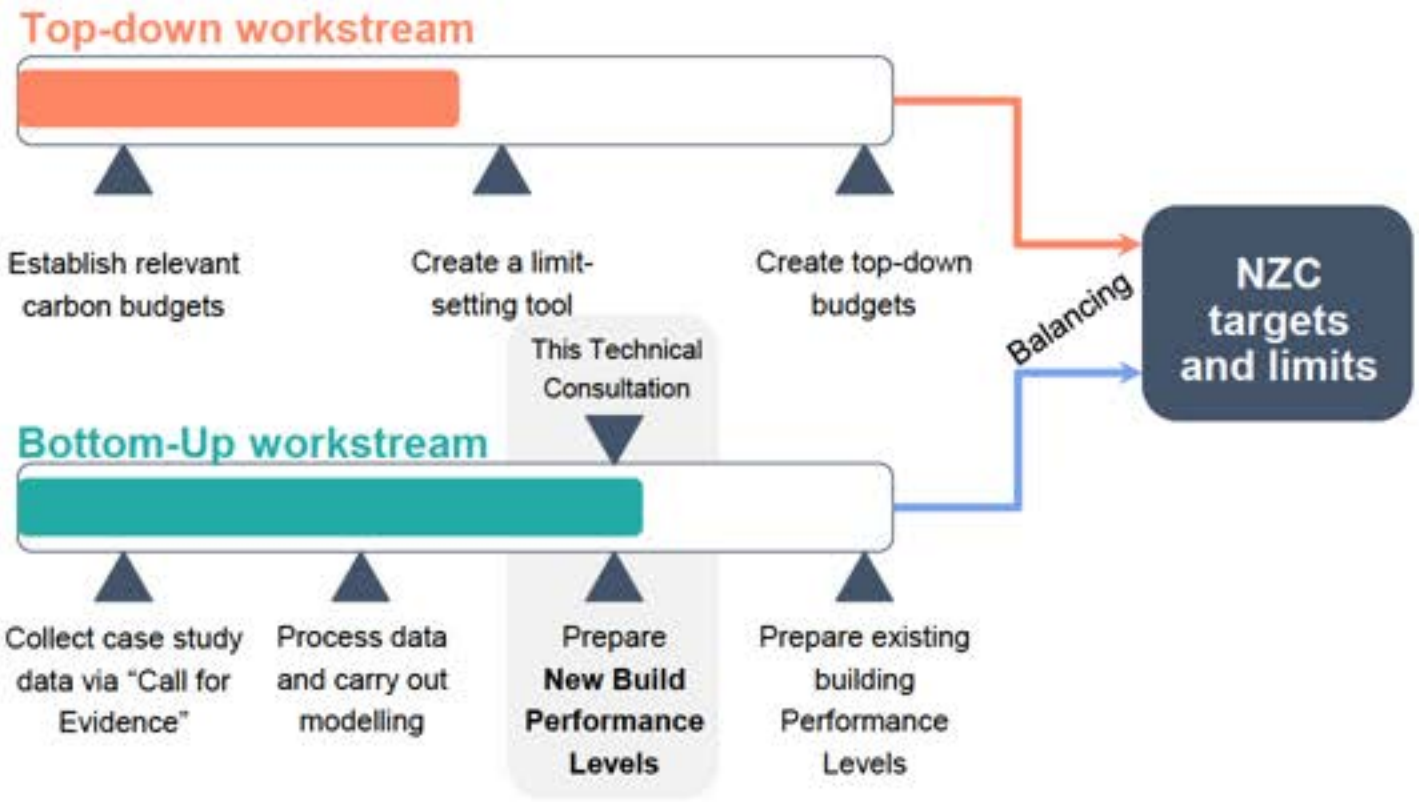
Glossary: *Performance levels: These levels provide the technical evidence on what can be achieved by the individual sectors, based on benchmarking, case studies and modelling. They are not limits or targets, but will be used to inform the NZC limits and targets in the next stage of work.*

Progress towards NZC Limits

The major milestone reached at the time of publication of this document is the development of bottom-up **New Build Performance Levels** for operational energy and embodied carbon.

Alongside technical fundamentals for the Standard, these New Build Performance Levels are a key focus of this consultation.

The Performance Levels represent what can be achieved at an individual building level. They are not the final NZCBS limits, which will be produced once the top-down budgets are available



Glossary: *Performance levels: These levels provide the technical evidence on what can be achieved by the individual sectors, based on benchmarking, case studies and modelling. They are not limits or targets, but will be used to inform the NZC limits and targets in the next stage of work.*

Call For Evidence - Thank You!

The Standard issued a Call for Evidence to obtain case study data from the real estate and built environment industry. This data is critical to ensure that the Standard is inclusive, and reflective of the best available evidence.

Metered energy data from individual project submissions from best-in-class buildings for over 200 projects has bene combined with data from predictive energy models to inform the performance levels.

Embodied carbon modelled data was submitted from 836 projects. Over half of the assessments were carried out between RIBA Design Stage 4-6, which provides a suitably robust assessment.

836
Projects embodied carbon data

3,200
Projects metered operational energy data
- from large data sets

200+
Projects metered operational energy data
- from individual projects

A huge thank you to everyone who responded to the Call for Evidence and contributed data:

AECOM
AEW
AHMM
AHR
Anne Thorne Architects LLP
Architype Ltd.
Argent LLP
Arup
Atkins
Bam
BDP
BE Design
Big Yellow Group
Bouygues
Bruntwood
Bryden Wood
Buro Happold
BWB Consulting
Certified
Chapman bdsp
City of London
Commercial Services Group
Cundall
Curtins
Cushman and Wakefield
Davies Maguire
dRMM
DEFRA
Eckersley O'Callaghan Engineers
Fiera Real Estate
Focus Consultants
Galliford Try
Glenn Howells Architects
Hawkins Brown
Haworth Tompkins
Hilson Moran
Hoare Lea
Introba (formerly Elementa Consulting)
ISG Ltd.
JLL
Kirsty Maguire Architect
Knight Frank Investment Management
Lamington Group
Landsec
LEAP
Legal & General Investment Management
Lendlease
London Legacy
Longevity Partners
Mace Group
Martin Ingham
Max Fordham LLP
Method Consulting
New River
Nigel Dutt
Nottingham Trent University
Pilbrow and Partners
Price & Myers
Purcell
QODA Consulting
Ramboll
Renaissance Associates Ltd
Ridge
RPS
Savills
SD Structures
Sir Robert McAlpine
Smith and Wallwork
Staffordshire University
Sustainable Construction Services
Swansea Council
Swansea University
Timber Development
Tooley Forster
Treveth Holdings LLP
Turley
Turner & Townsend
University of Liverpool
University of Reading
Walsh
Wates Group
Welsh School of Architecture
Whitby Wood
Wilkinson Eyre
Willmott Dixon Holdings Ltd.
Woolgar Hunter
Workman
WSP
XCO2

2. Technical Fundamentals

Definitions

UK Net Zero Carbon
Buildings Standard

Fundamentals - Introduction

Net zero carbon - what do we mean?

This section defines how the Standard will be applying for buildings to demonstrate that they are Net Zero Carbon in line with Climate Science to mitigate global average temperature increase within 1.5°C.

Limits and other requirements

This section identifies the specific carbon sources that needs to be limited and outlines other requirements that need to be met in order to demonstrate that a building meets the Standard

New build, retrofit and existing buildings

The standard will apply to new build, retrofit and existing buildings. Targets and limits will be treated differently depending on which category the building sits. A retrofit is defined as where more than 25% of the building envelope undergoes renovation, or a substantial replacement of building services occurs. For or intensive refurb projects where more than 50% of the existing slab area is demolished, the building will be classed as new build.

Heritage

We have assembled a working group looking specifically at the challenge of applying a net zero Standard to historic buildings or those with heritage aspects. It is our intention that heritage buildings will form part of the Standard, but that they will need a parallel approach that takes routine account of conservation principles, as well as energy and carbon. This approach will be developed by the Heritage sector group.

We are exploring an approach that involves incorporating energy and carbon issues routinely into the scope of Conservation Management Plans used for buildings of special significance. The limits and targets developed within the Standard may need to be applied with some flexibility to heritage buildings, with a consideration of listed status and an ‘Assessment of Significance’.

As this work is ongoing, this consultation does not explicitly focus on these buildings.

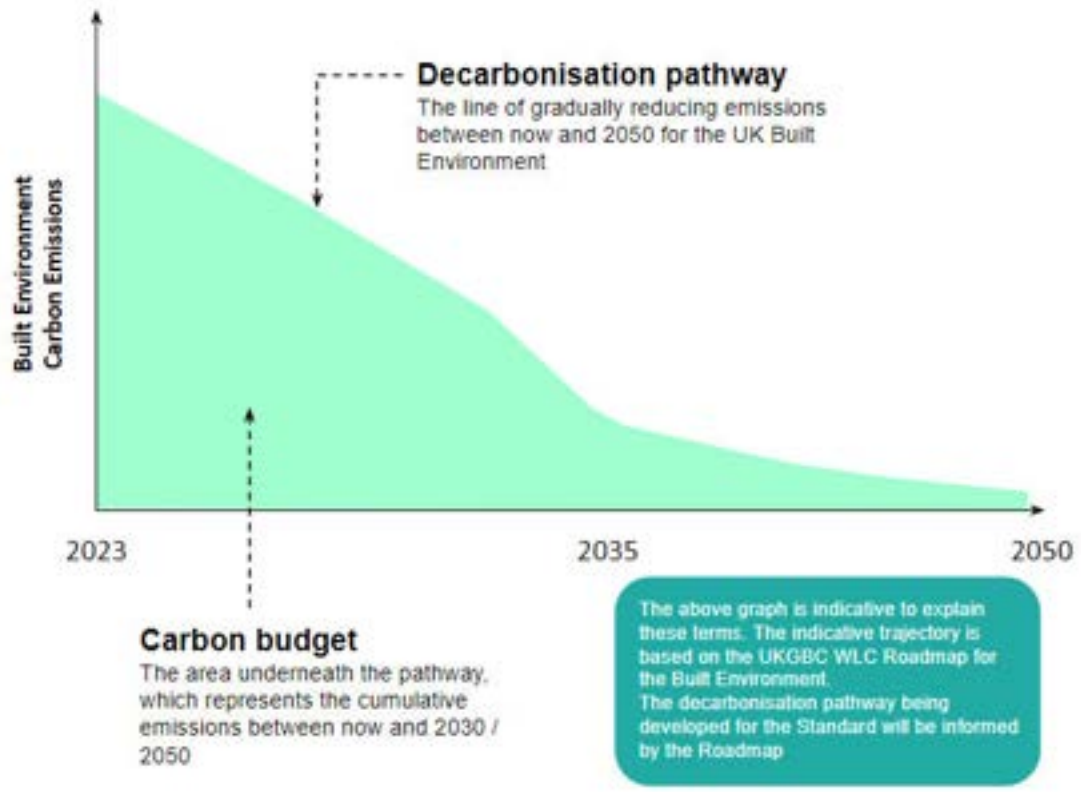
Net Zero Carbon - What do we mean?

Net zero carbon means achieving a balance between the greenhouse gases emitted into and removed from the atmosphere. In order to mitigate the worth impacts of climate change on humanity and natural ecosystems, climate science has shown that we need to **limit global heating to 1.5°C** over pre-industrial levels. In order to stand a reasonable chance of doing so, we need to **achieve net zero carbon globally by 2050 and limit cumulative emissions between now and then to within the remaining 'carbon budget'.** To achieve net zero carbon, all sectors in all countries must reduce their emissions as far as possible, and any 'residual' emissions will need to be removed (refer next page).

Accordingly, for the Standard we propose to **limit emissions** including both embodied carbon emissions and the emissions associated with energy use. Limits will be based on what is necessary to enable the cumulative emissions from the UK built environment between now and 2050 to stay within its share of the UK's **carbon budget.** The method to determine this proportion is currently being developed. Energy use intensity limits will be set, and targets for other metrics associated with supporting the full decarbonisation of the UK energy system are being considered. The Standard will therefore be geographically bound to the UK.

A "**decarbonisation pathway**", is being developed to show how the UK built environment's emissions could reduce, limiting them to within the remaining carbon budget. The shape of the decarbonisation pathway will be informed by what is anticipated to be possible and by when, based on data and modelling for each sector, and will ultimately be aligned to the budget identified.

The decarbonisation pathways will be delineated between operational carbon/energy and embodied carbon to show their separate trajectories.



The role of offsetting

The Standard will include embodied carbon and operational energy limits that support the decarbonisation of the built environment in a manner consistent with not breaching the limit of 1.5°C.

In addition to achieving these limits, Net Zero Carbon at an asset level is typically taken to involve the balancing of emissions through some form of offsetting. This is often talked about as either removal offsets (taking carbon out of the atmosphere), or reduction/avoidance offsets (reducing someone else's emissions).

An important discussion during the development of the Standard has been around whether or not the Standard should mandate the offsetting of emissions. There are reasons for and against requiring this, which are summarised to the right.

We are exploring whether offsetting should be mandated, optional (as a separate route to compliance), or excluded from the Standard due to the reasons "against" given on the right. It is acknowledged that excluding offsetting from the Standard entirely would be a shift in focus away from asset-level net zero.

The argument <u>for</u> including offsetting
"we must 'net' our emissions!"

- **Resilience.** If assumptions behind the Standard's limits and targets change at a later date, buildings that comply with the Standard will have still contributed to decarbonisation by offsetting their own emissions.
- **Language.** An asset is not "Net Zero" unless its emissions have been balanced with offsets, and therefore this would not be a Net Zero Carbon Building Standard without offsets. An alternative naming for the Standard may need considering if offsetting is not included.
- **Something is better than nothing.** Offsetting will always lead to greater decarbonisation progress when compared with not investing at all in carbon removals, reductions or avoidance. Mechanisms could be explored such as setting a carbon price and investing into a portfolio of measures to drive emissions reduction.
- **Convention.** Many developers are already offsetting their emissions to claim "net zero", and some existing standards require this.

The argument <u>against</u> including offsetting
"offsetting isn't necessary at an asset level!"

- **Systemic net zero.** Research by the CCC shows that Net Zero is a systemic issue, with no need for individual assets to 'net' their own emissions, provided these are aligned with a 1.5°C trajectory.
- **Removals availability.** The UN, IPCC and SBTi only specify removal offsets (and not reductions or renewables) in their definitions of Net Zero Carbon– but it is unlikely that there will be enough removal credits available to meet demand.
- **Integrity concerns.** Carbon offsets are market transactions where you are buying the right to claim carbon savings that were made in other industries. It is inherently difficult to demonstrate that offsetting claims are additional, permanent and robustly quantified with no double counting, and the market for doing this is still immature and poorly regulated.
- **Costs.** Offsetting introduces costs that don't directly benefit building owners/users, and may dissuade people from wanting to meet the Standard. It could be argued that this money would be better spent on reducing the assets' emissions.

Survey Talking Points

Complete the survey

Throughout the document, there will be a number of talking points (as below), which are questions in the consultation survey. Please provide responses to our talking points by completing the survey here or look out for the following icon to submit your thoughts.

Talking Points - The Role of Offsetting

7. Which of the following approaches to offsetting do you think the Standard should take?

A) **Offsetting mandatory:** The Standard should only recognise assets that have met carbon and energy limits, and then purchased offsets to 'net' these emissions

B) **Offsetting optional:** The Standard should not mandate the purchasing of offsets, but should recognise when a project has purchased offsets to 'net' the asset's emissions

C) **Offsetting not required:** The Standard should recognise assets that have met carbon and energy requirements without mandating the requirement to purchase offsets

A Note on Energy Procurement

The way in which buildings procure energy can help accelerate the decarbonisation of the energy system. Whether the Standard considers a building's energy procurement strategy when accounting for emissions associated with operational energy consumption is currently being discussed.

Whole Building Approach

We recognise that *building* is most commonly used to refer to a single structure, but in the case of multi-tenanted buildings there are also single 'demises' or 'hereditaments' within a structure. We recognise that in tenanted buildings, it will be necessary for owners and occupiers to collaborate in order to achieve a net zero carbon building.

We are proposing that the Standard **adopts a 'whole building' approach; to support emissions reductions across scope 1, 2 and 3; align with investor reporting tools/mechanisms; and drive owner-occupier engagement.**

We recognise there are good reasons for being able to delineate and assess different parts of a building:

- **Data**: enabling more granular data that owners/occupiers can use to drive improvements in performance.
- **Practicality**: enabling owners and occupiers to allocate the costs of achieving net zero appropriately.
- **Reporting:** the ability separate Scope 1,2 and 3 emissions for reporting purposes.
- **Accountability:** to ensure that clear accountability for emissions can be established and that owners/occupiers of buildings are neither unfairly rewarded or penalised for emissions that they do not control.

At this stage of the development of the Standard, delineating and creating a Standard for different parts of tenanted buildings across a range of different asset types introduces significant complexities. The Standard also needs to consider whether this complexity should be incorporated within the Standard, or left to the market to resolve.

We propose that the the Standard will require addressing all energy uses and embodied carbon for the whole building. We welcome views on this approach. We understand that separation based on accountability may be important for some sectors such as offices or retail, hence we are seeking views on this in this consultation and will take these views into consideration to inform the next stages of the Standard's development.

Talking Points overleaf

Whole Building Approach

Talking points

Accountability for delivering a net zero carbon building is an important consideration when developing the Standard. Some sectors have indicated that they would like the Standard to consider separating out the building according to accountability, making it possible to verify different parts of the building as net zero carbon (e.g. owner-controlled or tenant spaces). We are seeking views on this through this consultation.

8. Do you agree with the working assumption that the Standard will apply only to a whole building, with no separation of landlord and tenant activities and no ability to verify part of a building (e.g. base build only, or a single tenant demise)?

9. Alternatively, do you think the Standard should seek to explore owner/occupier accountability and building delineation?
If so, please indicate for which sectors or types of buildings this will be particularly important.

If you think the Standard should seek to delineate owner/occupier accountability for the net zero status of a building…

10. Should occupier controlled areas and/or the owner controlled areas within a building be able to attain net zero status independently of each other?

11. Should individual demises ((i.e. covering base build and tenant activities within a single demise) be able to attain/retain net zero status even if other demises in that same building cannot?

For the avoidance of doubt, "**attain**" applies to the first time a building seeks to become Net Zero Carbon (NZC) in line with the Standard, while "**retain**" applies to subsequent years once a building has already achieved NZC status and is submitting information to keep this status.

These questions have implications on a number of sectors. We are aware that these questions will have a particular impact on the proposed approach to performance levels for the Offices sector. For comments specifically related to the Offices sector and associated performance level proposals, see pages 95-100 and questions 53-56.

3. Technical Requirements

Metrics and Limits of the Standard

Technical Requirements

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Overview of Metrics

The Standard will set requirements within each of the following areas to define what is needed for a NZC building. The specific numerical targets and limits will vary by sector, and in some cases by sub-sector.

Operational Energy Limits will be set that define a building's required operational energy performance, to be demonstrated in operation.

Upfront Embodied Carbon (A1-A5)* limits will be set, defining a building's required embodied carbon performance in $kgCO_2e/m^2$ GIA.

Lifecycle embodied carbon emissions (A1-A5, B1-B5, C1-C4*) will be required to be reported, but will not be limited in this version of the Standard. The metric will be $kgCO_2e/m^2$ GIA over the building's Reference Study Period (default being 60 years, in according with the RICS Professional Statement).

Fossil fuel free New buildings with on-site plant will be required to be fossil fuel free, with certain exceptions. This will also be the end goal for existing buildings.

Demand management No limits or targets will be set with regards to demand management / flexibility, however the standard will require reporting of peak demand and time of peak. The embodied carbon of all demand management solutions, including batteries will be counted as part of the overall building's embodied carbon

Onsite renewables

All buildings will be required to report on renewable electricity generated by on-site systems, how much is used on site and how much is exported $kgCO_2e/kWp$. New buildings are required to meet a target for provision of on-site renewables, measured in kWh/m^2 of building footprint/yr. The embodied carbon of onsite renewables will not be counted within the A1-A5* total, but will be subject to separate limits, measured in $kgCO_2e/kWp$.

Renewable procurement & offsetting

If these form part of the Standard, acceptable forms of renewable procurement and offsetting will be defined. This will be steered by Industry guidance including the UKGBC's current update to their renewable procurement and offsetting guidance.

Refrigerant & Leakage Refrigerant emissions will be accounted for within embodied carbon. A limit will be set for Global Warming Potential (GWP), aligning with F gas regulations and EU taxonomy. In addition, the Standard will require refrigerant leak detection to be installed, and for refrigerant leakage to be reported

*lifecycle stages

Proposed Requirements

Carbon emission sources	Limits/ targets	Reporting and disclosure	Offsetting
Upfront carbon	Meet Embodied carbon limits	Measure and report emissions after PC	Offset EC after PC
Life cycle embodied carbon (A-C ex B6-7)		Measure and report emissions after PC	
Operational energy	Meet Operational Energy limits	Measure and report emissions annually	Offset OE annually
Operational water		Measure and report emissions annually	Offset annually
Fugitive refrigerant gases	Meet GWP limits	Measure and report emissions annually	Offset annually
Demand Management		Measure and report annually	
Onsite renewables	Meets minimum onsite target and embodied carbon limit	Measure and report annually	
Reportable (significant) in use embodied carbon		Measure and report emissions annually	Offset annually
Embodied Carbon of fit outs (offices, hotels and retail)	Meet EC limits for fit out (if data is available and provided to the standard))	Measure and report emissions annually	Offset annually

Talking points

12. In general do you agree with the proposals put forward for the metrics for the Standard?

Embodied Carbon Limits

Embodied carbon limits will be set, defining a building's required embodied carbon performance in $kgCO_2e/m^2$ GIA. These limits will be set based on both top-down budgets and bottom-up performance levels, the same approach as operational energy.

Upfront Embodied Carbon (A1-A5) limits will be set, defining a building's required embodied carbon performance in kgCO2e/m2 GIA.

Lifecycle embodied carbon emissions (A1-A5, B1-B5, C1-C4) will be required to be reported, but will not be limited in this version of the Standard. The metric will be kgCO2e/m2 GIA over the building's Reference Study Period (default being 60 years, in according with the RICS Professional Statement).

The reporting for A1-A5 will require measured, as-built quantities. Product-specific EPDs are to be used where available - where not, the standard will set out the hierarchy of other carbon factor options that can be used instead.

Both the material quantity and embodied carbon will need to be reported for each building element. Additional reporting on material efficiency will be required to be completed and published to encourage designs to meet A1-A5 limits through efficient use of material.

A1-A5 limits will decrease over time, as materials are expected to decarbonise and material efficiency will increase. The limit applied to a specific project will be that in place during the year the project was completed. Therefore, adherence with the standard will be based upon the submission year for the data and the current limits in place within the Standard.

No further requirements are to be placed on material flows or circularity for the first version of the Standard

Embodied Carbon Limits

Whilst the approach to reporting and limiting embodied carbon for a new-build project is clear (see previous page), the requirements on reporting and limiting embodied carbon in other circumstances will depend on the extent of the work. The following approach is proposed on reporting and limiting for different levels of intervention:

- **In existing buildings verified to the Standard:**
  - ❑ **Non-reportable works:** For the most minor works, (e.g. changing a single lightbulb), embodied carbon does not need to be measured, reported or limited.
  - ❑ **Reportable works (most sectors):** Where work is more substantial than the cut-off limit <level tbc>, embodied carbon is to be measured and reported, but is not limited.
  - ❑ **Reportable works (office, retail and hotels only):** For these sectors, the ambition is also to set embodied carbon limits if enough data can be found to substantiate these.
- **In retrofit or new-build projects looking to meet the Standard:**
  - ❑ **Retrofit:** If more than 25% of the building envelope undergoes renovation, or if a substantial replacement of building services occurs, then embodied carbon must be measured and reported, and '*Retrofit*' embodied carbon limits met.
  - ❑ **New-build:** For a building that is clearly a new-build, and for intensive reuse projects where more than 50% of the existing slab area is demolished, embodied carbon must be measured and reported, and '*New-build*' embodied carbon limits met.
  - ❑ **Mixed new/retrofit:** Where less than 50% of the existing slab area is demolished, and the building is extended, a floor area weighted average limit may be set based on the equation below, where GIA_{total} is the combined Gross Internal Area (GIA) of the completed building project including all retained areas and extensions.

$$[\ ((GIA_{total} - GIA_{existing}) \times limit_{EC,newbuild}) + (GIA_{existing} \times limit_{EC,retrofit})\ ] \ / \ GIA_{total}$$

Embodied Carbon Limits

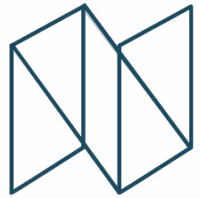
Talking points

13. What are your views on the approach to limiting embodied carbon?
Do you have any comments on the proposed approach?

14. We are only able to work on setting upfront embodied carbon (A1-A5) limits at this time, due to the data we received. What is your opinion on this?

15. The embodied carbon limits will be set for 2024 based on current levels of performance (before ratcheting down in the future). How would you expect to see the initial starting point for the limits set?

Embodied Carbon Retrofit Limits



Approach to limit-setting

Setting retrofit limits is complex as the level of intervention varies significantly between projects. The priority of the Standard is to encourage retrofitting where possible, whilst avoiding overly carbon-intensive works to take place.

Various options were considered for setting such limits. The options are shown here, with the middle (bold) option selected as the way in which limits will be set going forwards.

Final limits will be reviewed against the retrofit data submitted in the call for evidence, to check for achievability.

Approach considered	Advantages	Disadvantages
Limits are the same as new build.	Simplest option. Promotes retrofit-first approach.	Limits likely to be too easy to meet, so serve little purpose and thus doesn't incentivise efficient retrofit design.
Limits are sector-specific, based on a % of new-build, calculated for a reasonable allowance for typical replacements required by retrofit projects.	**More stringent than new build limits.** **Incentivise efficient design for larger retrofit schemes.** **Still simple for the user.**	**Very easy to meet for lighter-touch retrofit schemes.** **'Reasonable allowance' is subjective and must be well-reviewed.**
Bespoke limits for every project based on the nature of retrofit and elements replaced, developed using a formula provided.	If done well, creates stringent limits for all retrofits, so most effective way of minimising embodied carbon.	Most complicated option for the user. Open to manipulation, requires careful management / implementation. Limits may change as design progresses.

Embodied Carbon Retrofit Limits

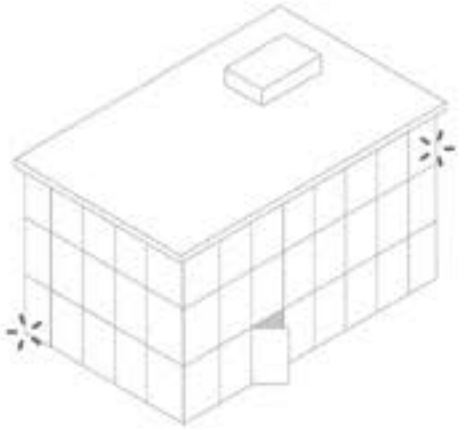
Applying the limit-setting approach

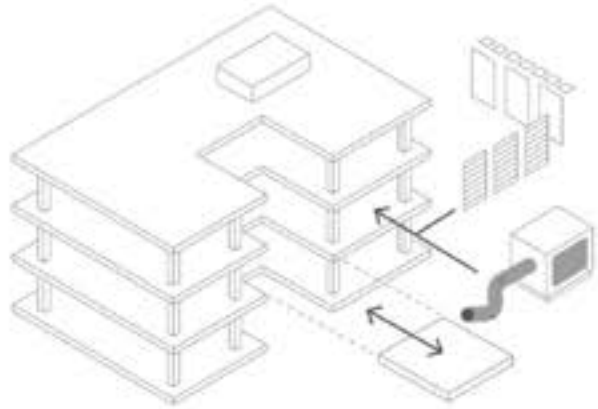
These figures demonstrate how the approach outlined on the previous page will be applied, once new-build limits have been set for each sector.

For each element (substructure, facade, etc) within each sector, a Retrofit Factor (RF) will be determined for that element, based on the typical replacement scenarios during retrofit works. The RF represents expected upper-bound emissions during retrofit, as a proportion of original emissions for an equivalent new-build.

For example, the RF for facades in the Office sector might be 1.0 (complete replacement) but for Single-Family Homes might be 0.5 to represent the addition of insulation and replacement of the doors and windows.

New-build limits are prorated down to give elemental limits based on typical % split between elements. RFs are applied to these, before summing the factored elemental limits, to give a total retrofit limit for each sector.





$$\text{New-build}_{\text{office}}$$

$$\text{Limit}_{EC} = \sum_{i}^{\text{Total}} \left[\text{Limit}_{\text{structure}} \; \text{Limit}_{MEP} \; \text{Limit}_{\text{etc...}} \right]$$

Individual limits based on element performance levels and sector embodied carbon budget

$$\text{Retrofit}_{\text{office}}$$

$$\text{Limit}_{EC} = \sum_{i}^{\text{Total}} \left[\text{RF} \times \text{Limit}_{\text{structure}} \; \text{RF} \times \text{Limit}_{MEP} \; \text{RF} \times \text{Limit}_{\text{etc...}} \right]$$

Retrofit Factors based on expected upper-bound emissions during retrofit, as a proportion of original emissions for an equivalent new-build

Refit Embodied Carbon

Need for consideration

Whilst the Standard is being created solely for setting out Net Zero requirements across whole buildings, it is recognised that the cumulative embodied carbon footprint of regularly refitting buildings can be significant.

The Office, Retail and Hotel sectors have been identified as having exceptionally high materials turnover and high wastage for fit-out (typically Cat B, in the case of offices).

As such, we wish to understand whether sufficient refit embodied carbon data exists, to enable a decision to be made as to whether this should be limited within buildings that have been verified against the Standard.

Talking Points

16. To set Embodied Carbon limits in retrofits, we intend to follow the process outlined in the consultation document, creating bespoke targets for each sector based on typical retrofit interventions. What is your opinion of this?

Do you have any other comments regarding the retrofit limit-setting process?

17. Whilst the Standard is being created solely for setting out Net Zero Carbon requirements across whole buildings, it is recognised that the cumulative embodied carbon footprint of regularly refitting buildings can be significant, particularly in the Office, Retail and Hotel sectors.

Do you believe that the Standard should include refit limits (for buildings already certified to the Standard) for these sectors?

Refit Embodied Carbon

Call for data

To help us make the decision as to whether or not refit embodied carbon limits should be set, we are researching to find existing data covering the refit of these sectors during a building's life.

If you have refit data from UK projects in the Office, Retail or Hotel sectors, please get in touch by emailing TG1b@NZCbuildings.co.uk.

Thank you!

Operational Energy Limits

The Standard will set limits for the operational energy use of buildings.

Rationale

The limits will be informed by both UK-wide carbon budgets (i.e. the Top Down modelling) and by an assessment of what is achievable (i.e. the Bottom-Up performance levels), aiming to strike a balance between both.

Performance levels have been produced for some sectors, on which we are inviting feedback. In other sectors, they are not yet available and their development is on-going. See details in Operational Energy Performance Levels section. Once performance levels and UK carbon budgets are available, a balancing exercise will be carried out to determine the limits.

Verification based on actual outcomes

Verification will require evidence of metered energy use and associated information (e.g. parameters such as occupancy hours or density of use, as relevant to each sector) , to demonstrate the Operational Energy limits have been met in operation. Other actions will be required for verification.

Talking Points

18. What are your views on the approach to verification of operational energy based on actual outcomes?

19. Do you have any comments on the rationale?

Scope of energy uses covered

In general, all electrical and thermal energy uses are covered by the Standard. However, a small number of exceptions apply:

Electric vehicle charging is excluded.

Heavy process loads may be excluded in some cases:

- By default, they will be included and covered by energy use limits (either as part of the overall energy use limit, or treated as an additional special end use with its dedicated limit)
- Some process loads may be excluded and not covered by energy use limits, **if** the carbon emissions from these processes are already managed as part of that industry's carbon emissions and do not come under the 'built environment' heading. It is not sufficient for carbon to be *counted* elsewhere in an industry: such exceptions will only apply where there is evidence that the relevant industry is actively managing and enforcing reduction limits.

Emissions from refrigerants use

These are considered in-use **embodied carbon** emissions for the purpose of carbon accounting. Refer to the section on refrigerant leakage for more information.

Operational Energy Limits

New build limits

New build limits will be set at an ambitious level. This will avoid the need for future re-works and provide more flexibility to the existing stock, where deep operational carbon savings are more costly, both financially and in embodied carbon terms.

Limits for new buildings applying for certification may be revised over time as part of the Standard's regular reviews, but on a given building they will not change over time: a building certified as "NZC New Build" will retain the same limit in future years (it will just need to regularly show it continues to meet that limit).

Existing building and retrofit limits

A number of considerations apply when setting limits for existing buildings and retrofit:

- Feasibility due to technical or other constraints e.g. heritage
- Whole life carbon impacts: energy use reduction is needed across the stock, and energy efficiency works will bring other important benefits (e.g. longevity, comfort for occupants), but a balance needs to be struck between operational carbon and other benefits (e.g. comfort), and the embodied carbon expenditure of the works.

The current proposals are that Operational Energy (OE) limits for existing buildings and for retrofits should be the same. Therefore if an OE limit can be met with more limited works, this should be encouraged. This does not apply to buildings already verified as NZC New Build - in that case, the limits will remain those of a new building. *A number of options are available for how these limits will be set, and we are seeking views on this - see consultation question.*

Talking Points

20. Should the end point (2050) limits be the same for new and existing buildings & retrofits?

21. Should the operational energy limits for existing buildings & retrofits tighten over time?

Fossil Fuel Free

New and existing buildings with on-site plant

Buildings with on-site plant (e.g. heating, cooking, generator) will be required to be **fossil fuel free**, with the exceptions of:

- Energy uses that are not covered by the Standard
- Emergency and back-up: see right.

This includes plant serving several users, but within a single owner site e.g. hospital campus, university campus, block of flats with communal heating, commercial centre with central heating or cooling.

Talking Points

22. Do you agree with the proposed exemptions for 'fossil- fuel free' requirements? Please select all that you agree with:

- **Emergency and life safety uses** i.e. back-up power in healthcare sector, or specific uses in other sectors where they are critical to health and safety (e.g. fire fighting and evacuation lifts)
- **Back-up to essential functions in buildings and sites "of vital importance for civil protection"** i.e. Class IV in BS EN 1998:2004+A1:2013 e.g. hospitals, fire stations, power plants"
- **Back-up power in datacentres**, on the condition that reliance on fossil fuels has been minimised.
- Other

Exceptions for emergency and back-up

Fossil fuel plant will only be allowed for the following uses:

- **Emergency and life safety uses** i.e. back-up power in healthcare sector, or specific uses in other sectors where they are critical to health and safety (e.g. fire fighting and evacuation lifts)
- **Back-up to essential functions in buildings and sites defined of critical importance.** For example, this could apply to Class IV buildings as defined in BS EN 1998:2004+A1:2013 ("buildings whose integrity during earthquakes is of vital importance for civil protection e.g. hospitals, fire stations, power plants etc").
- **Back-up power in datacentres**, on the condition that reliance on fossil fuels has been minimised. An approach to this is proposed in the Datacentre Sector Group report.

This is an area that will be regularly reviewed as part of the Standard development to incorporate opportunities for fossil fuel free solutions, while ensuring life safety and critical functions are maintained where satisfactory fossil fuel free alternatives do not exist.

Buildings connected to district heating or cooling

For information on this, go to Page 41.

Demand Management / Flexibility

Rationale

The Standard recognises that buildings cannot be viewed in isolation from the wider system, and that they must play their part to support grid decarbonisation. There are three ways in which buildings can do this:

- Reducing annual energy use: this is at the core of the approach to operational carbon. Measures that reduce annual energy use will also usually reduce peak demand.– see page 32 on operational energy limits.

- Contribution to the generation of zero carbon energy, through on site renewables (see pages 37-39) or offsite renewables.

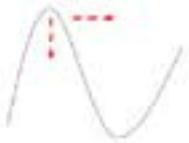
- Reduce the burden on the grid at times of high demand, which are also often times when grid electricity is higher carbon. This can be achieved through reducing peak demand both through passive and efficiency means, and through management, or flexibility, solutions e.g. smart controls, thermal storage, and electrical storage.

Performance metrics

The Standard team are developing a view on what the best metrics for demand management should be. Metrics considered include:

- Peak demand, and time of that peak; possibly differentiating between summer and winter
- Proportion of the peak that can be shifted
- Thermal or electrical storage, in absolute (e.g. kWh/m2) or relative terms (e.g. % thermal load)
- More qualitative approaches e.g. “smart readiness indicator”

Demand Management / Flexibility



The Standard team will continue to engage with built environment professionals and the industry, as well as consulting those in the wider system, including CCC and National Grid, to ensure the Standard best supports system-level decarbonisation. In the meantime, the following requirements are proposed:

Requirements – Operational energy and carbon

No limits or targets will be set with regards to demand management and/or flexibility but they may be proposed in some sectors.

Reporting against a range of metrics will be required, to support the ongoing review and future development of the Standard. As a minimum, this will require reporting of peak demand and time of peak. Other metrics may apply at least in some sectors.

Requirements – Embodied carbon

The embodied carbon of all demand management solutions, including batteries will be counted as part of the overall building's embodied carbon i.e. demand management solutions such as batteries will not be provided a dedicated allowance or limit, and instead be considered altogether as part of the building's overall embodied carbon limit.

Talking Points

23. What is your view on the approach to Demand Management / Flexibility?

Do you have any further comments on the proposed approach?

Onsite renewables

Rationale

Renewable electricity generation needs to be encouraged in order to support grid decarbonisation and ensure a sufficient supply of nationwide zero carbon electricity. However, the embodied carbon of creating such electricity must be considered, and so the standard must set embodied carbon limits on such electricity-generating equipment.

Renewable electricity generating systems

Operational Energy

Reporting requirements for all buildings

All buildings (new **and** existing / retrofits) will be required to annually report on renewable electricity generated by on-site systems, how much is used on site and how much is exported.

Provision of renewable electricity generation on new builds

In addition, the Standard proposes that **new buildings should be required to provide on-site renewable electricity systems**.

The renewable electricity generation requirement would be expressed as a target (i.e. minimum), in annual kWh/m^2 of building footprint/yr.

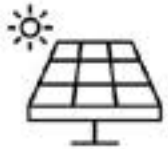
For indication, the target is currently proposed to be within the following range, to be confirmed with further analysis:

- at least 150-200 (tbc) kWh/m2 building footprint per year for 1- or 2-storey industrial buildings
- at least 80-120 (tbc) kWh/m2 building footprint per year for all other building types
- A smaller provision would be allowed, if this was sufficient to meet all the building's energy uses on an annual basis. This may be the case for houses and some low rise buildings.

Flexibility would be provided in the following conditions, with evidence:

- **Planning or legal constraint preventing on-site renewables e.g. heritage building or conservation area**: this would not be a blanket relaxation for all heritage buildings or all buildings in conservation, but would need to be evidenced as a constraint applying to that specific building or conservation area
- **Impractical to provide generation:** The available area has suitable solar exposure, but is very limited and only very small or impractical systems could be installed.
- **Target cannot be met due to practical constraint:** The area is suitable in its solar exposure, but limited so that even systems maximising the use of the available area cannot meet the target.
- **Poor conditions for generation**: The available area may be large, but is not optimum for PV generation (e.g. northern UK, overshadowed), so annual output from PVs would be small.

Onsite renewables



Renewable electricity generating systems

Alternative metrics for setting onsite renewable generation targets have been explored, but are not currently preferred:

- kWh/sqm of site footprint/yr: this would place unduly large requirements on sites with external areas used for valuable purposes such as sports and leisure, biodiversity etc
- % of annual energy use: this has the benefit of encouraging reductions in annual energy use (since the required renewable energy system is then smaller), but does not necessarily reflect a building's potential e.g. a low rise and high rise buildings with the same area of roofs would have different requirements, when in fact the rooftop area available for PVs is similar.

These proposals are based on an initial review of precedents (e.g. technical feasibility studies for local authorities including Greater Cambridge, Cornwall, and Newham).

Further work is required to finalise the approach and numerical targets.

Feedback is sought on this - see consultation question.

Please share with us any research about the embodied carbon implications of onsite PV, and the efficiency of PV over wind in Northern England and Scotland. We are currently reviewing if it is appropriate that any targets for on-site renewable energy generation be varied across geographical regions of the UK (to reflect the regional availability of solar and wind, for example), or should a single set of targets be applied?

Talking Points

24. Do you agree that a requirement for onsite renewables should be set for new builds?

25. For this renewable energy requirement, do you agree that kWh/sqm building footprint/yr is the right metric?

26. Do you think the proposed target ranges for onsite renewable generation are broadly right i.e. ambitious but reasonable?

27. Do you have comments on the proposed flexibility conditions for onsite renewable generation, where the target would not have to be met?

28. Do you have any other comments on the proposed approach to onsite renewable regeneration?

Onsite renewables

Renewable electricity generating systems

Embodied Carbon

The embodied carbon of renewable electricity-generating systems (including all additional structure / fixture / fittings / technology, but excluding batteries) will not be counted within the A1-A5 total when proving that a building meets embodied carbon limits, but will be subject to separate limits of their own.

The metric for these EC limits will be $kgCO_2e/kWp$, based on preventing the use of the poorest-performing electricity-generating systems out there. This metric is considered the simplest to use. Efficiency of installation is encouraged through the Standard's approach to operational energy limits.

The Standard hasn't yet determined whether on-site renewable heat-generating systems will be treated the same as electricity-generating ones, or as non-renewable heat-generating systems.

Renewable heat-generating systems

Operational carbon

They will be treated as other heat-generating systems.

Embodied carbon

The Standard hasn't yet determined whether on-site renewable heat-generating systems will be treated the same as electricity-generating ones, or as non-renewable heat-generating systems.

Electricity Storage

See page 35 on Demand Management / Flexibility.

Talking Points

29. What is your view on the approach to embodied carbon of renewables?

Do you have any further comments on the proposed approach?

Refrigerant & leakage

Rationale

As we move towards more refrigerant based systems, emissions from Module B1 grow in proportion to others. Poorly managed refrigerant systems can produce greater emissions than gas-based heating system. Therefore the Standard will place limits on refrigerants.

Refrigerants will be accounted for within embodied carbon calculations. This is because operational energy is being measured on EUI basis, and it is not possible to measure refrigerant-related emissions in this way.

The Standard will place a limit on the Global Warming Potential (GWP) of refrigerants. A GWP limit is universally applicable across system types and aligns with BREEAM. The F-gas regulations and EU taxonomy also refer to the GWP of refrigerants.

Limits will be selected based on their GWP, as well as their current availability on the market. It is not the intention to preclude VRF systems that could disadvantage smaller projects and budgets.

Performance metrics

The initial proposal for the GWP limit is based on R32: 675 GWP. The Standard will also require the GWP of refrigerants to match the most recently published IPCC publications, as per the RICS Professional Statement on Whole Life Carbon Assessment for the Built Environment.

In addition to a limit on the GWP of refrigerants, the Standard will also require the following:

- Refrigerant leak detection to be installed
- Refrigerant leakage to be reported

Talking Points

30. What is your view on this approach?

Do you have any further comments on the proposed approach?

District Heating & Cooling Networks

"District" network is used here to encompass schemes serving several buildings (e.g. a multi-block residential development, a mixed-use scheme), except if all buildings are within a site owned and occupied in large majority by a single party (e.g. university campus, hospital campus).

An "existing" network follows a similar definition to Building Regulations, i.e. a scheme that is either in operation or under construction, meaning any of: the building to house the energy centre has been constructed; there is a heat (or coolth) offtake agreement signed between the network and a third party; excavation for pipework has been completed.

Operational performance of the district networks

Operational emissions from district energy networks will need to be considered in the building's emissions (i.e. overall carbon content of heat or coolth, in kgCO2 / kWh of supplied heat or coolth measured at the user interface). *We are seeking views on this, and whether to set a limit to the carbon content of heat - see consultation question.*

There would not be performance requirements on individual elements, such as distribution losses (other than what may be required in the future through other means e.g. the government's upcoming Heat Networks Technical Assurance Scheme). This is consistent with the overall approach of the standard i.e. focusing on performance outcomes rather than individual design elements. *We are seeking views on this - see consultation question.*

Talking Points

31. Do you think there should be a limit on the carbon content of heat from district energy schemes?

- No: schemes should just report the carbon content of heat, and buildings would account for emissions as they would for on-site plant.
- Yes, there should be a limit, no worse than an on-site air source heat pump
- Yes, there should be a limit, no worse than a district scheme served by air source heat pump and with CP1 "Best Practice" distribution losses
- Yes, there should be a limit, but a different one than the options above: please specify what you think it should be

32. For the above, do you think the limit should be the same for new and existing schemes?

- Yes
- No
- Don't know / not sure

33. Do you think there should be performance requirements on the district energy scheme, beyond carbon content of heat?

- Yes, as per CP1 "Best Practice"
- Yes, other - please specify
- No

District Heating & Cooling Networks

Fossil Fuels

Buildings connected to a **new** district heating or cooling scheme will only be able to certify if the scheme is fossil fuel free.

Buildings connected to an **existing** district heating or cooling scheme using fossil fuels may be able to certify, ***if*** :

- The scheme has a decarbonisation plan in place, and
- There is a limit to the contribution from fossil fuels.

We are seeking views on this approach - see consultation question.

The scheme's **decarbonisation plan** should include :

- Future plant, distribution efficiencies, operating temperatures, storage plant requirements etc, and associated design implications.
- Calculations for the resulting carbon content of heat, showing that the network will then meet the limit carbon content of heat
- Commitment by the network or the building to cover renewable energy and offset requirements.
- Incorporation in the network's business model (including how capitals will be made available, future revenue streams, impacts on energy bills and other implications for energy consumers).
- Commitment to implementation.
- Timeline for implementation. At this stage, a deadline of 2030 is being considered i.e. no reliance on fossil fuels after 2030, but this will be reviewed as part of the balancing of carbon budgets.

Talking Points

34. Do you agree that buildings connected to an existing district network using fossil fuels could qualify as Net Zero, if the network has a decarbonisation plan compatible with UK Net Zero and there is a limit on fossil fuel contribution (you can comment on the detail of these conditions in the next questions) **?**

- No, if networks burn fossil fuels then buildings connected to them should not be able to qualify as Net Zero Carbon
- Yes, but only if connection to a network is a legal / planning requirement
- Yes, as proposed i.e. with decarbonisation plan and limit on fossil fuel contribution
- Yes, but only requiring a decarbonisation plan
- Yes, but only requiring a limit to fossil fuel contribution
- Yes, but with different conditions - please specify
- Don't know / Unsure

35. Do you have comments on the proposed decarbonisation plan conditions?

36. What should be the limit to fossil fuel contribution to the district scheme?

- No specific limit: this should simply be covered by the overall limit to carbon content of heat, as for all networks whether or not they use fossil fuels
- A limit on the proportion of heat (%) produced from fossil fuels, compared to the total heat produced by the network - if so, please specify that limit (%)
- Other - please specify.

District Heating & Cooling Networks

Energy-from-Waste

We are seeking views on how to approach Energy-from-Waste schemes (i.e. the burning of waste, where heat is used to feed into a network) - see consultation question.

Biomass

We are seeking views on how to approach networks burning biomass - see consultation question.

Energy sharing, and energy from waste heat

The carbon impacts will be allocated following standard accounting rules, to avoid double counting e.g. in the case of a district scheme utilising heat rejected by a datacentre or supermarket cooling plant:

- the energy use and associated emissions by the datacentre supermarket's cooling plant are allocated to the supermarket .
- That rejected heat is counted as "zero emissions" energy source by the district energy scheme - but energy use and associated emissions to utilise that heat (i.e. in a heat pump, in distribution etc) is allocated to the district scheme.

Talking Points

37. How do you think that heat networks that recover energy from waste should be treated from an energy and carbon perspective?

- They should be treated as networks using fossil fuels *(rationale: there is a lot of plastic, i.e. fossil fuel based materials, in the waste being burnt)*
- Their carbon content of heat should be accounted for, as for all networks, but they should not be treated as fossil fuel networks *(rationale: they make use of waste which may otherwise end in landfill or other detrimental routes).*
- Don't know / not sure

38. How do you think that heat networks that burn biomass should be treated from an energy and carbon perspective? Tick all that apply

- Their carbon content of heat should be accounted for, as for all networks
- There should be criteria on sustainable sourcing of the biomass fuel
- There should be criteria on air quality emissions
- Other - please specify
- Don't know / not sure

District Heating & Cooling Networks

Performance of buildings connected to district networks

Buildings connected to a district heating or cooling network will be subject to the same energy performance limits as buildings with on-site systems, accounting for all energy uses in generation, distribution and storage (as for buildings with on-site systems).

There are precedents for this accounting of the network's energy use within a building's energy performance limit, for example in NABERS and in options being explored by some local authorities.

This could be done by a simple apportionment of the network's energy use to each user on the basis of the heat delivered annually to that user, or in more sophisticated ways for example to account separately for secondary and primary losses, using metering at heat sub-stations.

An alternative would be to apply adjusted energy performance limits to the buildings (i.e. electrical uses + thermal energy demand), alongside a carbon content of heat requirement applying to the network. This is not the preferred option at this stage, as it is considered this would not be sufficient to encourage energy efficient networks.

The team developing the Standard will liaise with BEIS and the Department for Energy Security and Net Zero (DESNZ) on this issue, and particularly the Heat Network Technical Assurance Scheme, to provide guidance on compatibility of performance and reporting requirements.

Talking Points

39. Do you agree with this approach to energy performance limits?

- Yes, energy performance limits for buildings should be the same as with on-site systems, including energy used by the network
- No, the limits should be adjusted to stop "at the heat meter" (with separate requirements on the performance of the network)
- No, another approach should be taken - please specify
- Don't know / not sure

40. Do you have further comments, for example on how you think that network energy use should be apportioned across users (e.g. how metering arrangements could work, whether to apportion to something else than annual kWh, such as kWp or floor area)?

District Heating & Cooling Networks

Embodied carbon impacts of the network

The embodied carbon related to creating the district heating and cooling network will need to be reported as part of Standard.

However, it hasn't yet been concluded as to the format of this. The working assumption is that the approach of the Standard will align with the approach outlined in the consultation version of the updated RICS Professional Statement on Whole Life Carbon Assessments in the Built Environment whereby the embodied carbon of the district network is included in B6, with and embodied carbon factor/ kWh of heat.

Talking Points

41. Do you have an opinion on how district heating and cooling networks should be treated from an embodied carbon perspective?

- Yes, I think the Standard should follow whatever is agreed in the updated RICS PS
- Yes, but I think something else - Please specify
- No
- Don't know / Unsure

4. Carbon Accounting

UK Net Zero Carbon
Buildings Standard

Carbon Accounting

The following building related carbon emissions must be measured and reported:

Post Construction

applies to new construction and retrofit - **one off** measurement.

- **Embodied upfront carbon** - carbon emissions calculated from bills of quantities and LCA tools
- **Embodied life cycle carbon** - This includes upfront, in use and end of life carbon with operational energy use based on energy predictions. These embodied calculations take account of decarbonisation of the grid and construction products

Talking Points

42. Do you agree with the approach to carbon accounting?

Do you have any comments on the proposed approach?

In use

applies to all buildings - annual measurement.

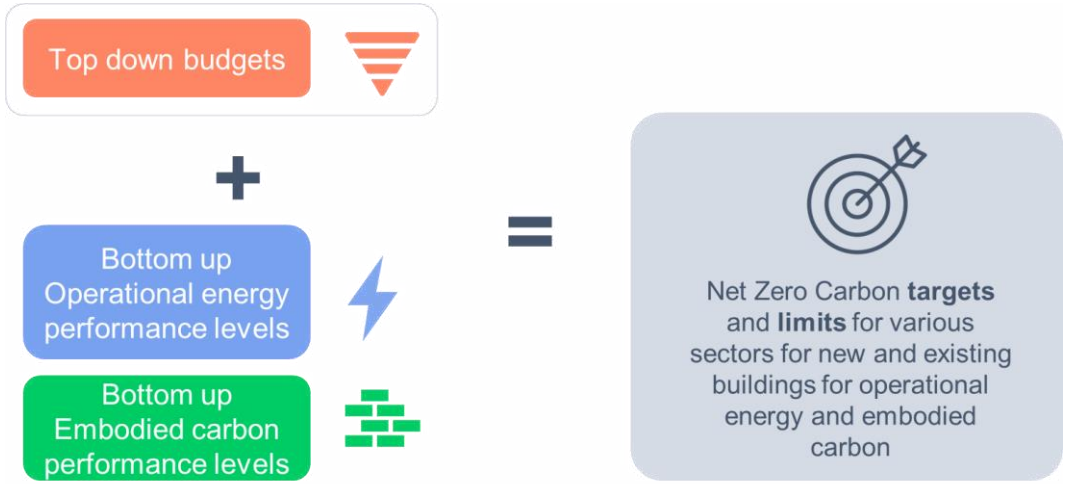
- **Operational energy** - calculated from measured consumption data and calculated using the most recent UK Government conversion factors for the relevant fuels for annual data
  - For electricity, where time of use metering data is available, national time of use emission factors may be used instead of annual factors
  - For district heating and cooling and cogeneration, system specific carbon emission factors should be used
- **Operational water** - calculated from measured consumption data and calculated using the most recent UK Government conversion factors for the relevant fuels for annual data.
- **Operational refrigerants** - calculated from refrigerant leakage and refrigerant GWP (global warming potential)
- **In-use embodied carbon** - This does not cover legacy embodied carbon, but is limited to reportable carbon impacts from in-use works and maintenance e.g., fit out, HVAC system replacement carbon emissions calculated from bills of quantities and LCA tools

5. Bottom Up Performance Levels

Bottom Up Performance Levels

Overview

The bottom-up workstream has been working over the last six months to use benchmarking, case studies and modelling to create Performance Levels that provide the context of technical feasibility for the various sectors. The next phase of work over the summer of 2023 will be for the top-down workstream to establish the relevant national carbon 'budgets' which show what the industry needs to achieve to play its part in a net zero carbon UK. The outputs from these workstreams will then be combined to create relevant limits and targets for the Standard.



The performance levels represent what can be achieved at the individual building level. **They do not represent the final NZCBS limits**, since these limits will be determined as part of the process of Bottom Up & Top Down analysis, to represent what is required to meet the UK's carbon budgets as well as what is expected to be achievable, taking account of:

- How much zero carbon energy is expected to be available
- How efforts are shared across sectors
- How efforts are shared between buildings in a sector e.g. to represent different types and levels of constraints on some buildings.

The performance levels are one part of the process for defining the net zero limits.

What the Performance Levels represent

Operational Energy

The operational energy performance levels result from the assessment of what can be achieved at the asset level in individual sectors and sub-sectors, based on benchmarking of the existing stock (median and best practice), metered data from case studies, and energy performance modelling. Two types of performance levels have been developed:

- Best Practice Today
- Future Exemplar.

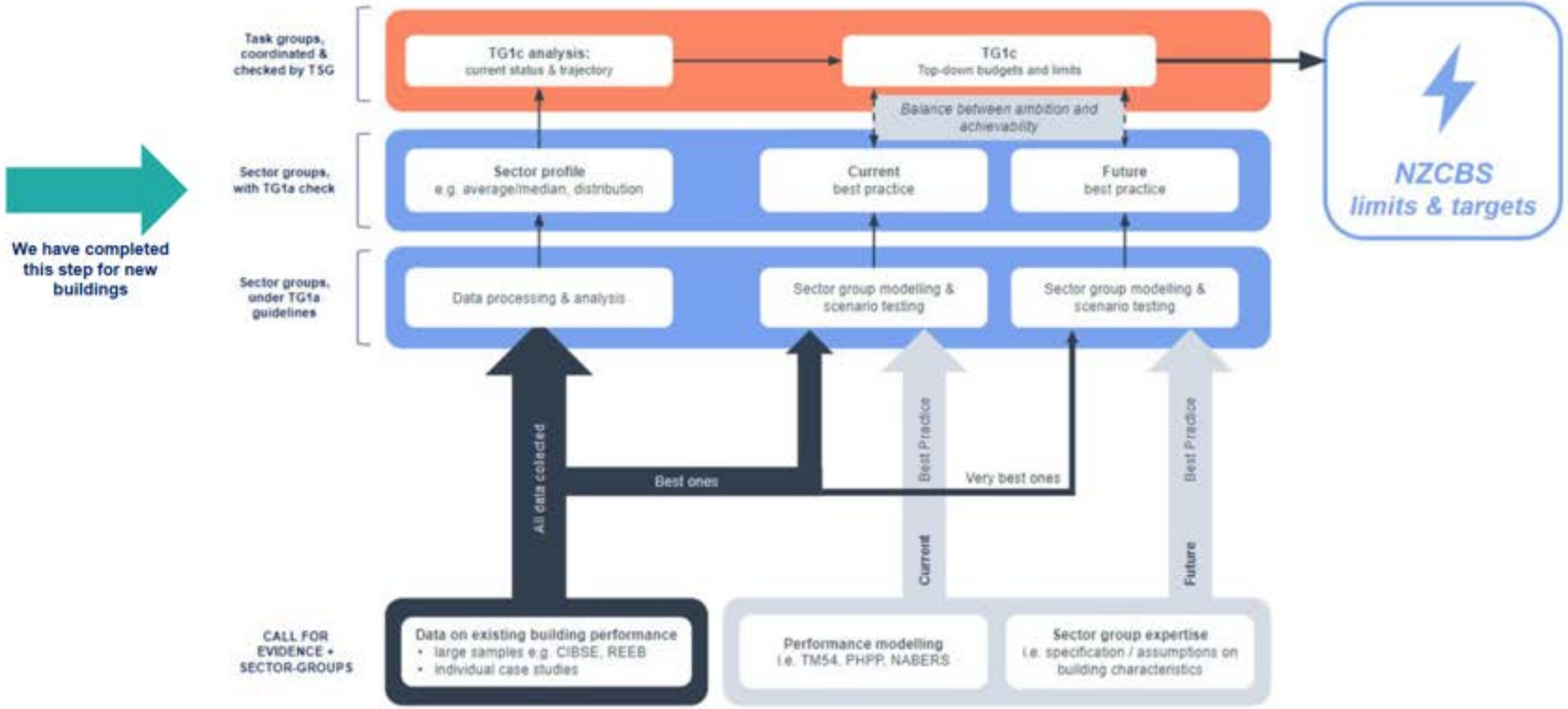
The purpose of these 2 levels is to assist the balancing of carbon budgets: depending on how much effort is required across sectors to meet UK-wide carbon budgets, the Net Zero limits will be set more closely towards Best Practice Today or, if more efforts are required, towards Future Exemplar.

Embodied Carbon

For the embodied carbon performance levels, we are assuming that the data submitted lies somewhere between mean performance and current best practice, as embodied carbon calculations have historically only been undertaken on projects with strong sustainability agendas. We have also not yet differentiated between best practice and future exemplars, the latter of which is based largely on material decarbonisation and can only be driven a little by today's design decisions.

For that reason, embodied carbon performance levels are articulated solely in terms of the range of data received today - percentiles and median/mean values.

Creation of the Performance Levels



5. Bottom Up Performance Levels

6. New Build Embodied Carbon Performance Levels

New Build Embodied Carbon Performance Levels

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New Build Embodied Carbon Performance Levels

Executive summary

The embodied carbon of nearly 500 UK-based new-build projects has been analysed for the Standard, to understand what levels of performance are currently achieved on our projects. This section of the report explains what data was received, how it was interpreted, and what performance levels were derived from it.

It should be noted that there was a lack of usable data in four sectors (retail, data centres, hotels and sports & leisure), and most sectors did not provide sufficient life-cycle embodied carbon data to allow analysis for modules A-C. This section therefore focuses on upfront embodied carbon (modules A1-A5) for the nine remaining sectors only.

We also comment on the next stages of work for embodied carbon: predicting future possible performance levels, and setting limits for new-build and retrofit projects.

The consultation questions for this section of the report focus on whether the consultees support the approaches taken to analysing data so far, and whether there is support for the proposed approaches to be taken as next steps.

New Build Data Collection and Analysis Processes

New Build Embodied Carbon Data Collection

Data format

Embodied carbon data was collected from several sources, including the beta version of the Built Environment Carbon Database (BECD). Project data was also submitted using the LETI proforma, and OneClick downloads.

Multi-project datasets were submitted by the Greater London Authority, Future Homes Hub, and both Price & Myers and Smith & Wallwork shared their in-house structural embodied carbon datasets.

Scope (modules)

All building lifecycle modules could be submitted, across modules A-C and D. Sequestered biogenic carbon could be reported, but was to be reported separately to the fossil emissions modules.

Scope (elements)

Using the element categories provided by the RICS Professional Statement on WLCA in the Built Environment, most submissions concentrated on elements 1 through 5, meaning that facilitating works and external works were omitted from submission.

This means that the Standard team focussed on the analysis of the data submitted for:

- Substructure (1)
- Superstructure (2.1-2.4)
- Facade (2.5-2.6)
- Cat A fitout (2.7-3)
- FF&E (4)
- Building services/MEP (5)

Very few datasets included all six elements shown on this page; many were structure-only (1-2.4).

For office submissions, it was assumed that all data provided was Shell & Core plus Cat A only, unless specified otherwise in the submission. This means that no embodied carbon allowances have been made for tenant installations and modifications.

We note that the forthcoming updates to the RICS Professional Statement increases the scope as to minimum reporting requirements, as referred in the RICS Professional Statement v2.

New Build Embodied Carbon Data Analysis

The primary role of the embodied carbon Task Group was to consolidate the various data sources, and ensure that they were comparable in scope to one another.

We removed data that was largely incomplete or appeared to be too high or low, and imported the remainder into PowerBI to allow the various sources of data to be compared alongside each other.

As most data submitted was only for some elements (e.g. structural-only, with no data for facades, MEP etc.), we backfilled the gaps using average values from where elements did have data submitted.

This ‘notionally complete’ dataset was then used to create embodied carbon histograms for different sectors, and derive percentiles.

This process is shown overleaf.

New Build Data Collection and Analysis Flowchart

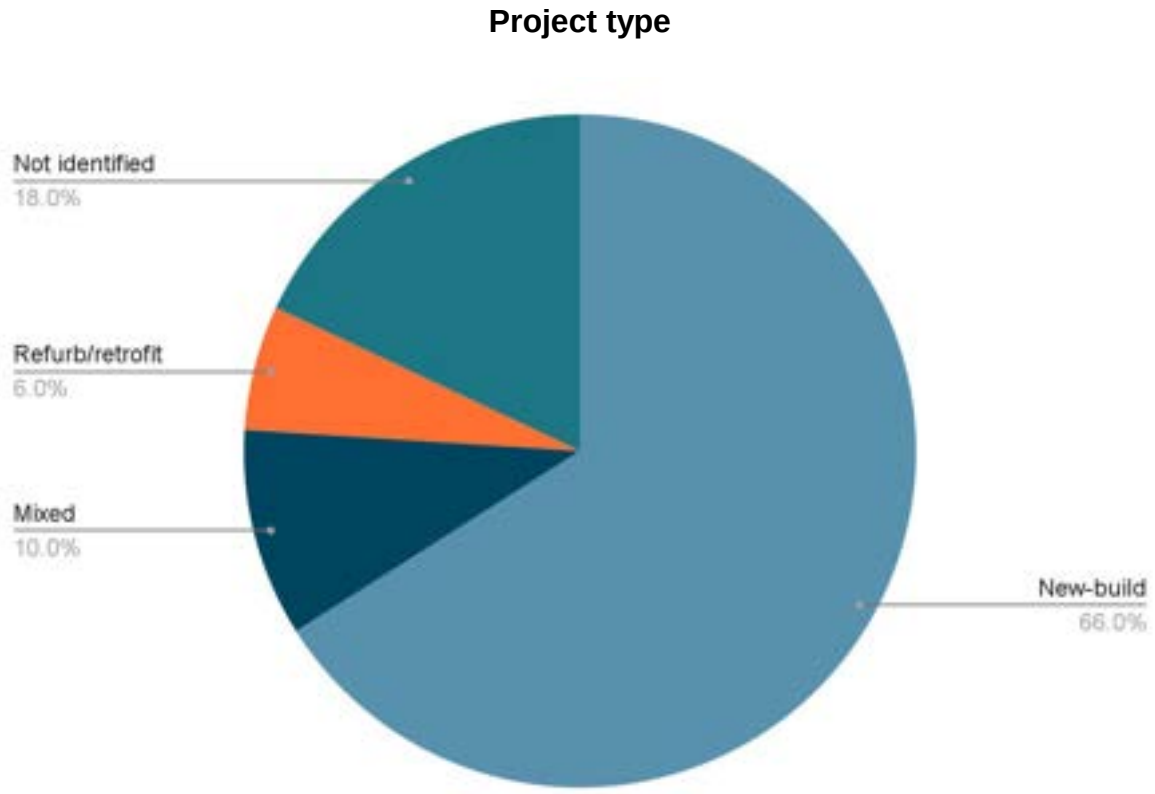
Overview of Submitted Data

Types of Project Submitted

The majority of projects submitted to the call for evidence were new-build, with only 16% containing elements of refurbishment or retrofit.

The work leading up to this consultation document has focussed on interpreting the new-build data only.

The proposed approach to setting retrofit limits (during the next stage of works) is outlined on page 28.



New Build Data Overview and Quality

The table overleaf shows the total extent of data within each sector, and level of scope covered.

Number of datapoints

Four sectors (retail, data centres, hotels, and sports & leisure) had insufficient data across all elements, and so the performance levels of those sectors is not currently understood. It will not be possible to set limits for these sectors without additional data.

The number of data points in the other nine sectors vary from 10 to 238 projects.

Project sizes

The average GIA for each sector is also shown in the table, ranging from less than 1000m^2 (healthcare and culture & entertainment), to more than 100,000m^2 (offices, commercial residential, logistics & warehouses).

It is noted that whilst the homes sector averages 5,900m^2, the majority of the data is from multi-family buildings. The single-family home data submitted by Future Homes Hub will be considered separately when setting limits for this subsector.

Scope of submissions

Many sectors only submitted enough data to understand the performance levels of the sub- and superstructure for that sector.

Most sectors also only submitted sufficient data for upfront embodied carbon (modules A1-A5), meaning that the life cycle embodied carbon performance levels are not understood.

This means that it will only be possible for the standard to set limits on upfront embodied carbon (modules A1-A5) for the nine sectors.

The Standard still intends that life cycle embodied carbon (modules A-C) data will be required to be reported, and the aim is to set limits on this in future versions of the Standard.

Backfilling data

Where projects had no data shared for non-structural elements, this is shown as ND overleaf. Here, the A1-A5 average figures from other sectors were backfilled into the gap, using the *Office* sector figures for the Facade elements, and *Commercial Residential* for all other elements.

New Build Data Overview and Quality

Sector		Offices	Homes*	Commercial residential	Logistics & warehouses	Healthcare	Schools	Higher education	Culture & entertainment	Science & technology	Retail	Data centres	Sports & leisure	Hotels
Number of projects		72	238*	78	20	10	94	10	33	16	1	1	3	0
Mean GIA of projects (m^2)		105,000	5,900*	186,000	159,000	500	2,900	12,300	900	48,000	N/A	N/A	N/A	N/A
Quality of upfront embodied carbon data (A1-A5)	**Substructure (1)**	Good	Good, but not split by element	Good	Good	Good	Good	Good, but not split by element	Good, but not split by element	Good	N/A	N/A	N/A	N/A
	Superstructure (2.1-2.4)	Good		Good	Good	Good	Good			Good	N/A	N/A	N/A	N/A
	Facade (2.5-2.6)	Good		Good	Good	ND	Good	ND	ND	ND	N/A	N/A	N/A	N/A
	Cat A fitout (2.7-3)	Good		Good	Good	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A
	FF&E (4)	Good		Good	Good	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A
	MEP (5)	Good		Good	Good	ND	Only 2 projects	ND	ND	ND	N/A	N/A	N/A	N/A
Quality of in-use embodied carbon data (B1-C4)		Poor quality	Poor quality	Good	Good	ND	Poor quality	ND	ND	ND	N/A	N/A	N/A	N/A

ND = no data. For A1-A5 elements, this was then backfilled with average figures (facade taken from *Offices* sector, all other elements from the *Commercial Residential* sector)
*note: 31 projects were Future Homes Hub submissions, analysing single-family homes. This sub-sector will be considered separately when setting limits.

New Build Data Overview and Quality

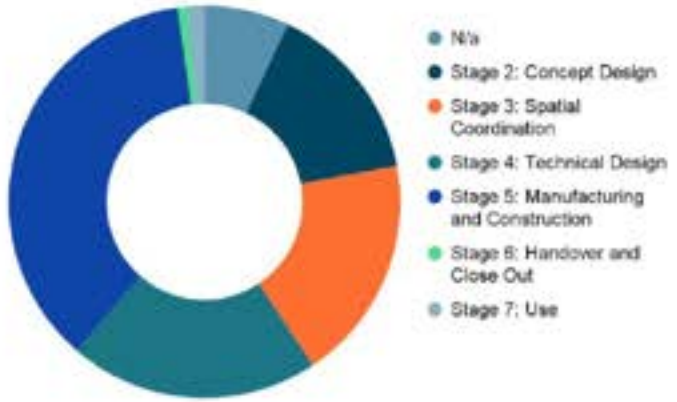
Most data submitted was for projects that were at least into RIBA Stage 4, and nearly 40% of projects were at least into Stage 5.

Over three-quarters of the embodied carbon data submitted was structures-only, in part due to the large amount of data that came from two structural consultancies, Price and Myers, and Smith and Wallwork.

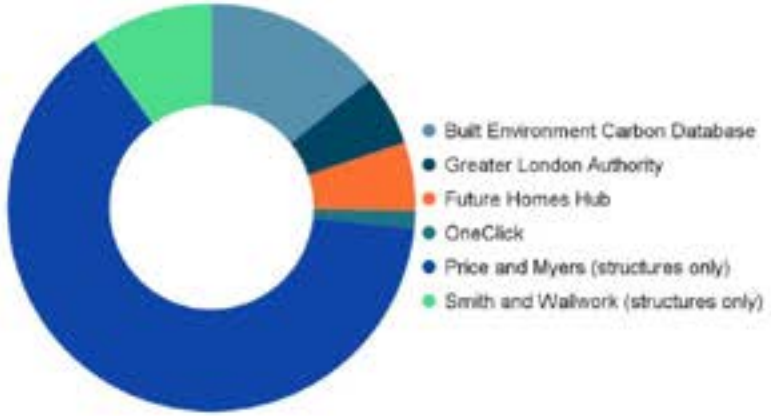
Where data submitted was not split up by element (e.g. where sub and superstructure had been combined) we disaggregated the data based on the percentage split taken from the whole dataset.

Most MEP data was not calculated using CIBSE TM65, and so separate modelling will be run later this year to understand whether a higher carbon intensity should be shown.

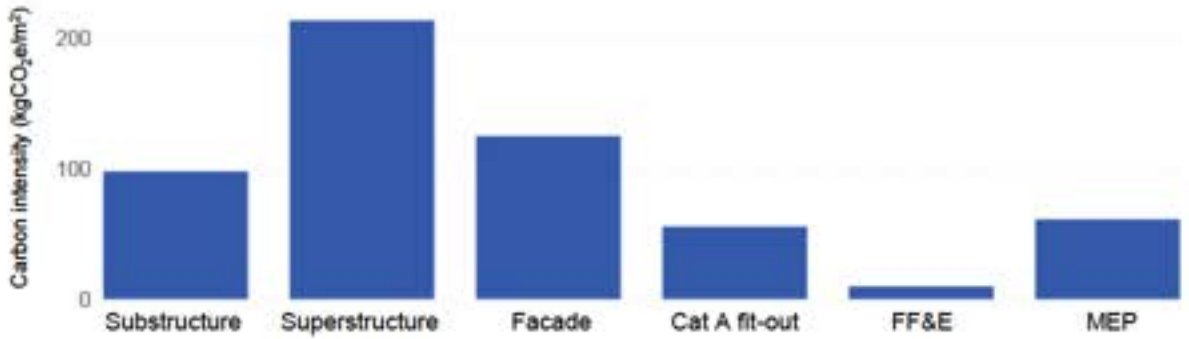
RIBA stages



Data sources



Average embodied carbon intensity per element, all buildings



New Build Data Distribution

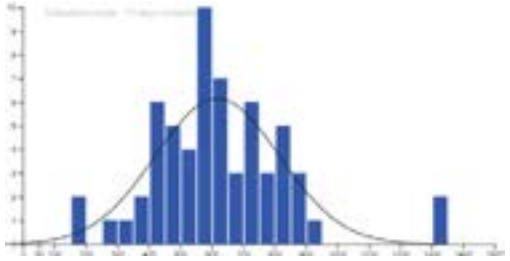
These histograms shown across these two pages demonstrate the range of data submitted for each sector.

Note that very high and very low datapoints were removed as part of the embodied carbon data analysis process.

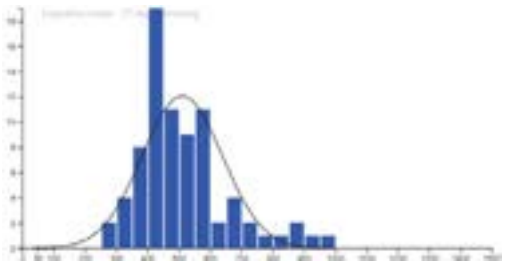
The x-axes on these graphs show upfront embodied carbon intensity ($kgCO_2e/m^2$) and are normalised to allow comparison of the distribution of carbon intensity between sectors.

The y-axes give the number of projects in each band, and are different on each graph as the number of projects submitted for each sector varies.

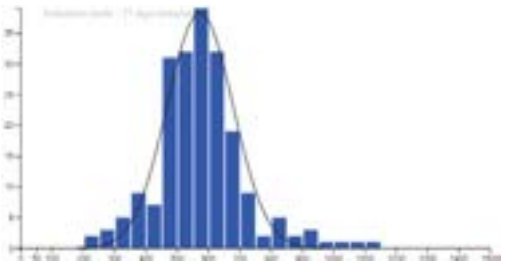
Offices



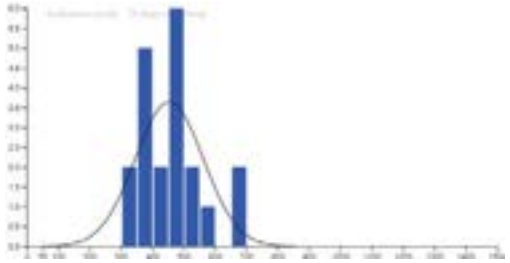
Commercial residential



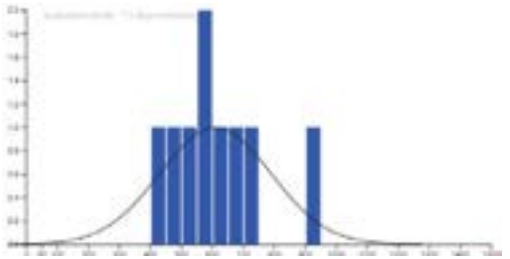
Homes



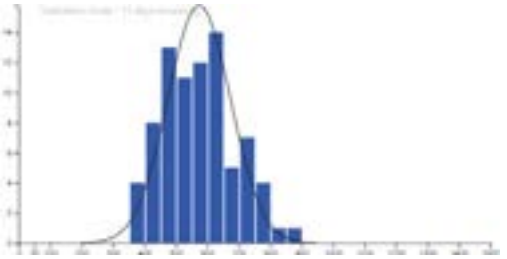
Logistics & warehouses



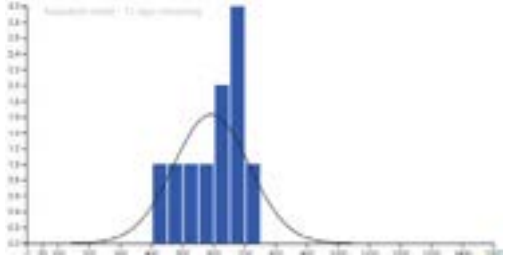
Healthcare



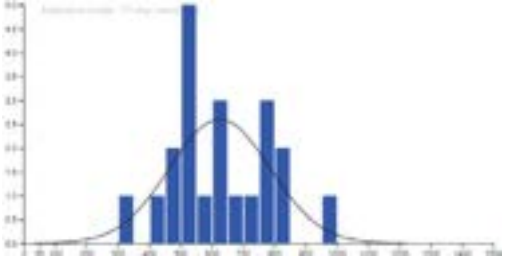
Schools



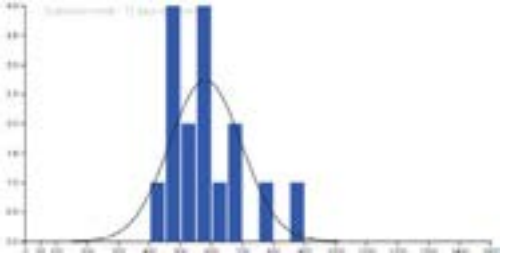
Higher education



Culture & Entertainment



Science & technology



New Build Embodied Carbon Data Gathering and Interpretation

Talking Points

43. What is your general opinion about the quality of data received?

- Highly unsatisfactory.
- Unsatisfactory.
- Neutral.
- Satisfactory.
- Highly satisfactory.

44. 75% of the data collected was structures-only. What is your opinion of this?

- I have no problem with this at all - the structure is the most impactful element for embodied carbon.
- I'm neutral about this situation.
- I would like to see more non-structural data gathered but it won't affect my support for the Standard.
- I won't be able to advocate for the Standard's use without more non-structural data being gathered.

45. Where we had incomplete projects (e.g. structure-only), we backfilled the gaps using average data from other projects in different sectors. What is your opinion of this?

- I have no problem with this approach.
- I'm neutral about this situation.
- I would like to see a different approach followed (explain your approach below under 'any other comments') but it won't affect my support for the Standard.
- I won't be able to advocate for the Standard's use without a different approach (explain your approach below under 'any other comments') being followed for this.

46. Do you have any other comments regarding data gathering and interpretation process?

Analysis Output: Performance Levels

New Build Embodied Carbon Performance Levels

Derived levels of performance

The table overleaf outlines the levels of performance demonstrated by the final 571 new-build projects that passed the QA process undertaken in early 2023.

The performance levels only cover upfront embodied carbon (modules A1-A5), due to the extent of data submitted only covering this.

A range of levels is shown, showing the 25th, 50th and 75th percentiles, along with the mean value of each sector.

This information will be used to inform the embodied carbon limits that will be set during the next stage of the works.

These are not limits

Note that the performance levels shown here do not represent the limits and targets for the Standard - just the findings of the evidence gathering exercise to understand embodied carbon performance of buildings today.

It is important to note that whilst a range of values are shown, the limits may not sit within this range.

We also acknowledge that the projects shown here are probably lower embodied carbon than 'business as usual', and this will be reflected when final limits are set.

New Build Embodied Carbon Performance Levels

Sector	All	Offices	Homes*	Commercial residential	Logistics / warehouses	Healthcare	Schools	Higher education	Culture and entertainment	Science and technology
Number of projects	***499***	*61*	*204*	*78*	*20*	*9*	*80*	*10*	*21*	*16*
Min	**179**	179	226	295	332	409	353	409	335	446
25th %ile	**468**	481	493	419	371	512	480	520	517	491
50th %ile (median)	**561**	592	566	464	460	589	579	616	600	569
Mean	**568**	618	574*	511	455	611	574	594	627	582
75th %ile	**639**	732	632	580	491	687	633	674	760	642
Max	**1344**	1344	1101	972	652	927	865	739	965	866

All figures shown are A1-A5 emissions, $kgCO_2e/m^2$
All numbers rounded to nearest 10kg.
*It is noted that the Future Homes Hub Implementation plan study gave a figure of 425 $kgCO_2e/m^2$ for single-family homes, which will be accounted for when setting limits
Data centres, sports & leisure, hotels, and retail sectors currently have insufficient data and so are not included here

Comparison with Existing Targets

This table outlines some of the carbon targets set by industry already, demonstrating that most of the performance levels shown in the previous table fall within expected ranges.

These numbers are only shown for information and do not necessarily reflect the limits that will be set in the Standard.

Sector	All	Offices	Homes	Commercial residential	Logistics / warehouses	Healthcare	Schools	Higher education	Culture and entertainment	Science and technology
LETI band A[1]	-	375	300	-	-	-	300	-	-	-
LETI band C[1]	-	600	500	-	-	-	500	-	-	-
GLA aspirational target[2]	-	600	500	-	-	-	500	-	-	-
GLA benchmark figures[2]	-	950	850	-	-	-	750	-	-	-
SBTi 2025 targets based on global emissions and GIA[3]	-	600	410	-	-	-	-	-	-	-

A1-A5 emissions, $kgCO_2e/m^2$
All numbers rounded to nearest 10kg.

[1] LETI, https://www.leti.uk/_files/ugd/252d09_25fc266f7fe44a24b55cce95a92a3878.pdf
[2] Greater London Authority, Appendix 2 of https://www.london.gov.uk/sites/default/files/lpg_-_wlca_guidance.pdf
[3] Science Based Targets initiative, Table 6.1 of https://sciencebasedtargets.org/resources/files/DRAFT_SBTi_Embodied-carbon-pathway-development-description.pdf

New Build Embodied Carbon Performance Levels

Talking Points

47. Do you think that the performance levels shown are in the right order of magnitude?

- Far too low
- A bit low
- About right
- A bit high
- Far too high

Do you have any comments on the performance levels shown for specific sectors? Please provide evidence to support any arguments of too high/low you might make.

48. Are you able to share data to support your comments?
If so, please share the data via the BECD (https://beta.becd.co.uk/) and write your Assessment ID, or IDs, (e.g.: *f024ff69-0ff6-4f8b-849a- 08daacf690a1*, found in the top-left corner of the embodied carbon page) in the text-box below:

Future Decarbonisation Predictions

Future Decarbonisation Predictions

To help inform the embodied carbon limits for future years, we must first predict the possible future levels of performance, based on today's levels but modified for our decarbonisation predictions. To do this, we researched the rates at which different sectors could reasonably be forecast to reduce their embodied carbon intensity by considering four main aspects:

Material decarbonisation
This is the forecast decarbonisation of materials used in the built environment. Figure 30 of the UKGBC "Net Zero Whole Life Carbon Roadmap" (2021) gives trajectories for each material. We researched whether any more recent reports or data would supersede this roadmap, including speaking to its original authors, and the only change accounted for is the 2023 Timber Development UK net zero roadmap.

Material consumption patterns
The sector groups were asked to advise as to which materials were used the most in their sectors, to feed into the next two aspects, efficiency gains and material selection. Steel and concrete were highlighted as the main sources of embodied carbon emissions in every sector.

Material efficiency gains
The sector groups were asked to advise as to how much more efficiently they thought that materials could be used in the design of their buildings. Very little quantitative data was found to exist on this, though in general most sectors expected that a 10-20% improvement was possible today. The UKGCB roadmap predicted an improvement of around 20% by 2050 compared to 2018 levels, but predicted a linear change between now and then.

Material selection
Finally, the sector groups advised on material selection, prioritising the use of the lowest carbon material for each building. Many sectors cited timber as an alternative to steel or concrete for small/medium sized projects including housing. Natural and/or reclaimed materials were highlighted as usable for structure, insulation and finishes. Lower-carbon concrete mixes were commonly seen as an option too. This use of lowest-carbon materials, where safe to do so and meeting the functional requirements of the building regulations, will be considered when setting limits during the next stage of work.

The information gathered from these four areas will be used to inform our predictions for the future decarbonisation of each sector, and the expected future performance levels.

From material efficiency gains and swapping, we assume that a 10% improvement over business as usual embodied carbon is possible today, and that this will increase to 20% by 2030. Material decarbonisation benefits will follow on top of this.

Future Decarbonisation Predictions

Talking Points

49. Our understanding of possible future performance levels across the sectors will be informed by the UKGBC Whole Life Roadmap for the Built Environment (2021), specifically the work done to understand predicted material decarbonisation. Do you agree with this approach?

50. Predicted material efficiency increases will also be used to inform limit setting. In your opinion, what percentage reduction in upfront embodied carbon (A1-A5) is possible TODAY purely from more efficient use of materials?

- no room for improvement
- at least 10% better
- at least 20% better
- at least 30% better
- at least 40% better
- at least 50% better

51. Predicted material efficiency increases will also be used to inform limit setting. In your opinion, what percentage reduction in upfront embodied carbon (A1-A5) will be possible BY 2030 purely from more efficient use of materials?

- no room for improvement
- at least 10% better
- at least 20% better
- at least 30% better
- at least 40% better
- at least 50% better

Further Embodied Carbon Considerations

RICS Professional Statement v2

The RICS Professional Statement (PS) on Whole Life Carbon Assessment for the Built Environment is in the process of being updated this year, to bring more consistency to the industry's approach to carbon accounting.

The following key changes will need to be considered as possible modifiers to the shown performance levels, in order to set embodied carbon limits aligned with the updated PS:

- The introduction of new life-cycle stages some of which are mandatory to report (e.g. A5.1, demolition).
- The need for all elements listed in the cost plan to also be included within the carbon assessment.
- Carbon offsets for materials must be excluded (e.g. "net zero carbon" building products must be reported without their offsets accounted for).
- Transport emissions to include return trips, calculated using DEFRA factors.
- Percentages of cement replacement and scrap steel must follow default figures until products are known.
- Upfront carbon should not include biogenic carbon (could be reported separately) but land use and land use change (LULUC) emissions must be reported.
- Biogenic carbon can only be claimed for sustainably sourced materials.

There are further related changes which will not affect the limit-setting process, but may need to be taken into account depending on how the development of the Standard progresses. These include:

- Grid decarbonisation to be reflected in modules B-C emissions. This will become relevant once sufficient data has been obtained for module B-C and limits are being set for the life-cycle embodied carbon emissions (A-C) of projects.
- Infrastructure emissions to be reported. This will become relevant if future revisions of the standard set limits on the infrastructure related to a building's construction.

Beyond new-build & whole buildings

Later in 2023, the embodied carbon performance levels shown in this document will be used to inform embodied carbon limits for new building projects.

Beyond this, we have also been considering the implications of setting embodied carbon limits for other aspects, including:

Retrofit

A new methodology has been devised for the approach to setting embodied carbon limits on retrofit projects. Refer to page 28.

Renewables

Renewable electricity generation needs to be encouraged in order to support grid decarbonisation, however this cannot come at the expense of excessive embodied carbon emissions. Refer to page 37.

Refit

We are considering developing targets for refit (repeated fit-out) works of office, retail and hotel buildings, due to the high cumulative embodied carbon impact of these refits. Refer to page 30.

Refrigerants

Poorly managed refrigerant-based systems can produce greater emissions than gas-based systems, and so limits on the embodied carbon due to refrigerant leakage will be set. Refer to page 40.

Next Steps and Call for Further Data

Next Steps

Embodied Carbon performance levels

Please do complete the technical testing **consultation** giving feedback on the embodied carbon performance levels.

If you feel that the performance levels shown are too high/low due to your experience, we would encourage you to share the data from your own projects (see below).

Embodied carbon further data

The NZCBS is also currently actively seeking further Embodied Carbon data, particularly:

- for the **Retail**, **Data Centre, Hotels, and Sports and Leisure** sectors
- for projects with high-quality data for **Modules A-C.**
- where the assessment has been completed for **all elements**, not only structure.

Higher education, Healthcare, and Science and Technology sectors were also relatively low in data and more would be welcomed.

This data should be uploaded to the **BECD** at https://beta.becd.co.uk.

Refit data

If you have **embodied carbon refit data** from UK-based projects in either the **Office**, **Retail** or **Hotel** sectors, please get in touch by emailing TG1b@NZCbuildings.co.uk.

580

$kgCO_2e/m^2$ GIA A1-A5 mean carbon footprint across all sectors

499

Total number of projects used to determine new-build performance levels

56%

Proportion of A1-A5 emissions due to structure

"A huge thank you to all those companies that have submitted embodied carbon data to develop our understanding of embodied carbon emissions in the UK.

Will Arnold,
Chair of Embodied Carbon Task Group

7. New Build Operational Energy Performance Levels

New Build Operational Energy Performance Levels

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Sectors with a medium level of completeness	**Page 117**
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New Build Operational Energy Performance Levels Principles and Development Process

Operational energy performance levels for **new buildings** have been developed by the Sector Groups using guidelines to ensure consistency in approach. The process was:

1. Understanding the sector

- **Determining which sub-sectors should have dedicated performance levels.** Sub-sectors are associated with genuinely different functions, not different servicing strategies (e.g. whether a building is air conditioned or not does not define a different sub-sector, as this would not necessarily encourage the best performance and design strategies).
- **Determining the core end uses** expected to be present in all buildings in that sub-sector, **and additional "special" energy uses*** e.g. in a hotel; bedrooms and general reception, circulation and back-of-house areas are core uses; but a restaurant or swimming pool are special end uses as they represent an additional function which may or may not be present in buildings in that sector. The special end uses would have an energy performance limit and therefore, if present in a building, would lead to an additional allowance.

2. Defining performance metrics for each sector and sub-sector All sectors include a metric for annual energy use. If the metric proposed is not Energy Use Intensity (EUI, in kWh/m^{2}GIA/yr) then an equivalent EUI is provided to allow comparison and balancing between sectors. In some sectors, additional metrics are also proposed e.g. related to thermal demand.

** Electric Vehicle charging is excluded in all*

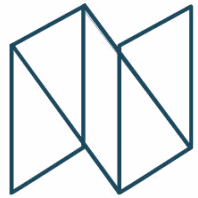
3. Analysis of energy performance in the existing stock using benchmarks, large datasets, and references to initiatives such as NABERS, Passivhaus, LETI. This provides an understanding in each sector of current median and best practice energy use.

4. Identification of individual best practice projects with metered energy use, to refine the understanding of best practice energy use in the existing stock. This relied on the projects submitted through the Call for Evidence, and others identified separately.

5. Energy performance modelling (NOT compliance modelling) e.g. using CIBSE TM54, PHPP or Design for Performance. Where possible, modelling was done under a range of scenarios e.g. occupancy patterns, climate, geographical locations, to provide a level of confidence in the performance levels. Available modelling e.g. from LETI or Design for Performance, could be used instead of or to complement the work.

6. **Combining all the work into performance levels, taking account of the performance gap**. Two levels are considered: **Best practice today, and Future exemplar,** for projects really stretching performance both in terms of the project's ambition and through possible advancements in technology and practice. These 2 levels intend to provide a range to assist the development of NZC limits and targets, by balancing these with the top-down carbon budgets when available.

New Build Operational Energy Performance Levels: Development Process Steps



1 – Preparation

- Produce List of sub-sectors
- Produce List of “core” and “special” end uses

2 – Develop Sector-specific performance metrics

3 – Determine the sector profile of the existing stock

- Use Call for Evidence data, Sector Group expertise & additional resources
- Define the sector median & best practice zone

4 – Analyse projects from the Call for Evidence

- Integrate with sector profile, refine best practice
- Review and confirm metrics and special end uses
- Identify useful performance characteristics from these projects, if relevant

5 – Prepare the modelling

- Use Task Group 1A (Operational Energy) guidelines
- Identify resources
- Identify key assumptions
- Identify key performance inputs
- Liaise with other Sector Groups where relevant

6 – Determine the current best practice and future exemplar new build performance levels

- Determine Current best practice and Future exemplar modelling inputs
- Carry out modelling, including scenario testing
- Check consistency across the whole sector and whole building
- Carry out Quality Assurance at all steps
- Report the outcomes

New Build Operational Energy Performance Levels

Status of this Technical Update & Consultation issue

The following pages provide:

- An overview on proposals for all sectors
- For each of the 13 sectors, a summary of proposals. The 14th sector is Heritage – this group are not in charge of producing performance levels, instead they are developing guidance for all groups on how to address heritage buildings.

- The performance levels proposed here apply to new buildings only
- The performance levels are open for comments through this consultation.
- As noted earlier, they are NOT the limits which will be set by the Standard, as these will also be informed by the UK carbon budgets ("Top Down modelling") and balancing of efforts across all sectors.

The 13 sectors groups have been divided into three categories:

- Sectors with a reasonably high level of completeness and confidence on performance level
- Sectors with a medium level of completeness and confidence on performance levels
- Sectors at early stage of development for the performance levels.

Acronyms used in this section:

BP – Best practice

FE – Future exemplar

SG – Sector Group

Where annual energy use performance levels are proposed in a different metric than kWh/m^{2}GIA/yr, then an indicative equivalent EUI in kWh/m^{2}GIA/yr is also provided, for information. This does not apply at asset-level, but is provided at the sub-sector or sector level, to help comparisons.

Additional information is available for all sectors to explain how the information presented here was arrived at. This is provided as separate reports and is also open for comments as part of the consultation.

In the following tables, performance levels marked "tbc" indicate that either there is no value yet available, or the value shown is indicative only and still being developed.

New Build Operational Energy Performance Levels: Overview of Proposals

The following slides provide an overview of the development of performance levels in each sector, including benchmarking of the existing stock and comparison with existing in-use projects. Where performance levels are proposed, they are shown here as Energy Use Intensity (EUI) in kWh/m2GIA/yr for comparison purposes. Note that in some sectors, different metrics are proposed to be used at the asset level, and the EUI here is just indicative as sector-wide equivalent - see details on individual sector slides. Where a range is provided rather than a single value, this indicates the range between Future Exemplar and Best Practice Today (as explained in the background on development of performance levels: see page 81).

Sector	**Existing stock benchmarking**	**Proposed performance levels**			**In-use projects achieving Performance Levels?**
		Available ?		**Equivalent kWh/m^{2}GIA/yr ***	
Schools	Yes - for 2 out of 4 sub-sectors	Sectors with reasonably high level of completeness and confidence on performance levels, at least for some sub-sectors	Yes - for 2 out of 4 sub-sectors (Best Practice Today & Future Exemplar)	Primary schools: 30 - 38 Secondary: 43 - 58	Yes - for 2 out of 4 sub-sectors
Homes	Yes - for 4 sub-sectors		Yes - for 2 out of 4 sub-sectors (Best Practice Today)	Flats: 35 Detached houses: 40 tbc	Yes - for 2 out of 4 sub-sectors
Offices	Yes		Yes (Best Practice Today & Future Exemplar)	30-60 (EUI route; varying if following NABERS Rating route)	See details in Offices slides, depending on EUI and NABERS Rating route
Healthcare	Yes		Yes	Varying depending on space types provided	Not yet identified

New Build Operational Energy Performance Levels Overview

Sector	Existing stock benchmarking	Proposed performance levels			In-use projects achieving Performance Levels?
		Available ?		Equivalent kWh/m^{2}GIA/yr	
Datacentres	Yes, partial (median)	Sectors with medium level of completeness and confidence on performance levels: drafts available at least for some sub-sectors, but still being developed	Yes, in draft	tbc	Not yet identified
Higher Education	Yes		Being developed - draft provided on illustrative building	tbc	Tbc once performance levels are available
Science and Tech	Yes		Draft for one sub-sector	tbc	Tbc once performance levels are finalised
Logistics and Warehouses	Yes for some sub-sectors		Draft for two sub-sectors	tbc	Tbc once performance levels are available
Retail	Yes		Draft for three sub-sectors	tbc	Tbc once performance levels are available

New Build Operational Energy Performance Levels Overview

Sector	Existing stock benchmarking	Proposed performance levels			In-use projects achieving Performance Levels?
		Available ?		Equivalent kWh/m^{2}GIA/yr	
Hotels	Yes	Sectors with low level of completeness and confidence on performance levels: drafts not available, but proposals include sub-sectors, performance levels, and benchmarking of the existing stock	no	Not available yet	Tbc once performance levels are available
Sports & Leisure	Yes for 2 sub-sectors				
Commercial residential	Yes for 1 sub-sector				
Culture & Entertainment	Yes				

Sectors with a reasonably high level of completeness and confidence on performance levels

New Build Operational Energy Performance Levels

Typically, these are sectors where:

- performance levels are proposed for most or all of the sub-sectors, informed by modelling, in-use projects, analysis of industry benchmarks, and consideration of the performance gap.
- There are available industry references to compare the proposed performance levels with.

Schools – Performance Levels

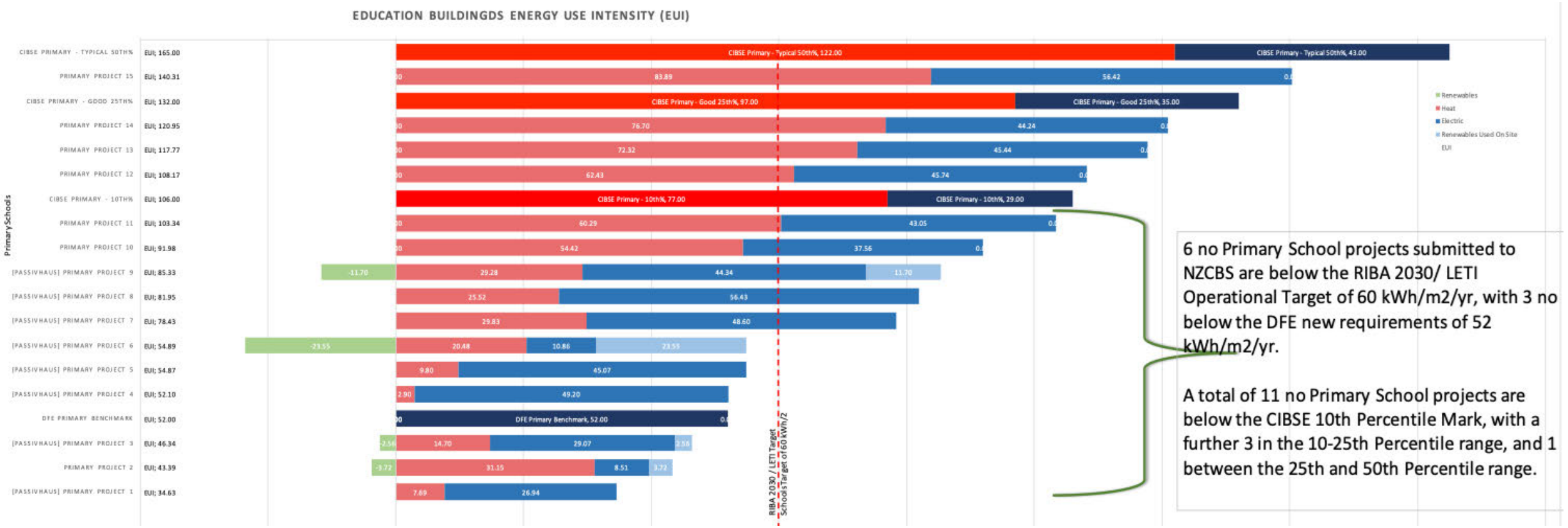
	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)			
					Best Practice today		Future exemplar	
	Core	Additional	Median	Best practice	Annual energy use	Space heating & cooling	Annual energy use	Space heating & cooling
Metrics **Sub-sectors**			kWh/m²GIA/yr	kWh/m²GIA/yr	EUI, kWh/m²GIA/yr	Peak demand (W/m²)	EUI, kWh/m²GIA/yr	Peak demand (W/m²)
Early-years or pre-school	General functions plus curriculum delivery & support, incl. specialist curriculum spaces in secondary schools	Swimming pool Flood lights Large specialist uses e.g. CDT equipment, multiple kilns	tbc	tbc	tbc	-	tbc	tbc
Primary (incl. SEN)			122 (CIBSE 50th)	77 (CIBSE 10th)	38	15 (SH) 15 (SC)	30	12 (SH) 12 (SC)
Secondary (incl. SEN)			113 (CIBSE 50th)	66 (CIBSE 10th)	58	15 (SH) 15 (SC)	43	12 (SH) 12 (SC)
6th form			tbc	tbc	tbc	tbc	tbc	tbc

Schools – Background and Next Steps

	End uses	Existing stock benchmarking	New build Performance levels (for core end uses)	
			Best Practice today	**Future exemplar**
Other schemes		Benchmarks: CIBSE, as used above	Targets and limits: • Primary: DfE (52) and LETI (65) and RIBA Challenge (60) • Secondary: DfE (67), LETI (65) and RIBA Challenge (60) • Primary and secondary: Scottish Futures Trust: expectation to be below 100kWh/m2/yr	
Existing buildings meeting PL?			Yes – see approach described below	Yes, but fewer than meeting the Best Practice today – see approach described below
Modelling			No dedicated modelling: the proposed performance levels are based on the analysis of in-use projects (modified to convert the fossil fuel gas elements into electric ASHP). The Best Practice Today levels are based on the average of the top 5 schools (i.e. approximately half of the data points submitted below the CIBSE 10th Percentile 11no Primary & 9no Secondary) .	No dedicated modelling. The same process was used as for Best Practice Today, based on in-use operational data of existing buildings, but assuming technological performance would improve over time: • Primary: performance was clustered closely. The second highest performing school data point was used i.e. 30 kWh/m2.a. • Secondary: less data was available, and it was less clustered. The average of the top three performing schools was used. A review was also carried out of the reductions on an elemental breakdown, to ensure the targets improvements seemed reasonable.
Performance gap			The performance levels are based on existing buildings, so inherently incorporate a performance gap: see details above	The performance levels are based on existing buildings, so inherently incorporate a performance gap, but reduced due to the more onerous levels: see details above
Further development	Profile for remaining 2 sub-sectors		• Review whether equivalent performance levels could be developed in kWh/pupil/yr (e.g. to relate to funding requirements) • Develop approach to special uses e.g. CDT equipment, multiple kilns. For example, this could be approached with an additional allowance of 10kWh/m2/yr (from Schools with standard areas based on BB98 and BB99) • Develop Performance Levels for remaining 2 sub-sectors i.e. Early years / Pre-schools, and 6th Form • Review how to address out of hours community use : they are currently included in Performance Levels but may be provided a separate allowance, subject to metering & monitoring	

Schools

This shows analysis for Primary Schools. Similar analysis for Secondary Schools is included in the Performance Level report.



Homes – Performance Levels

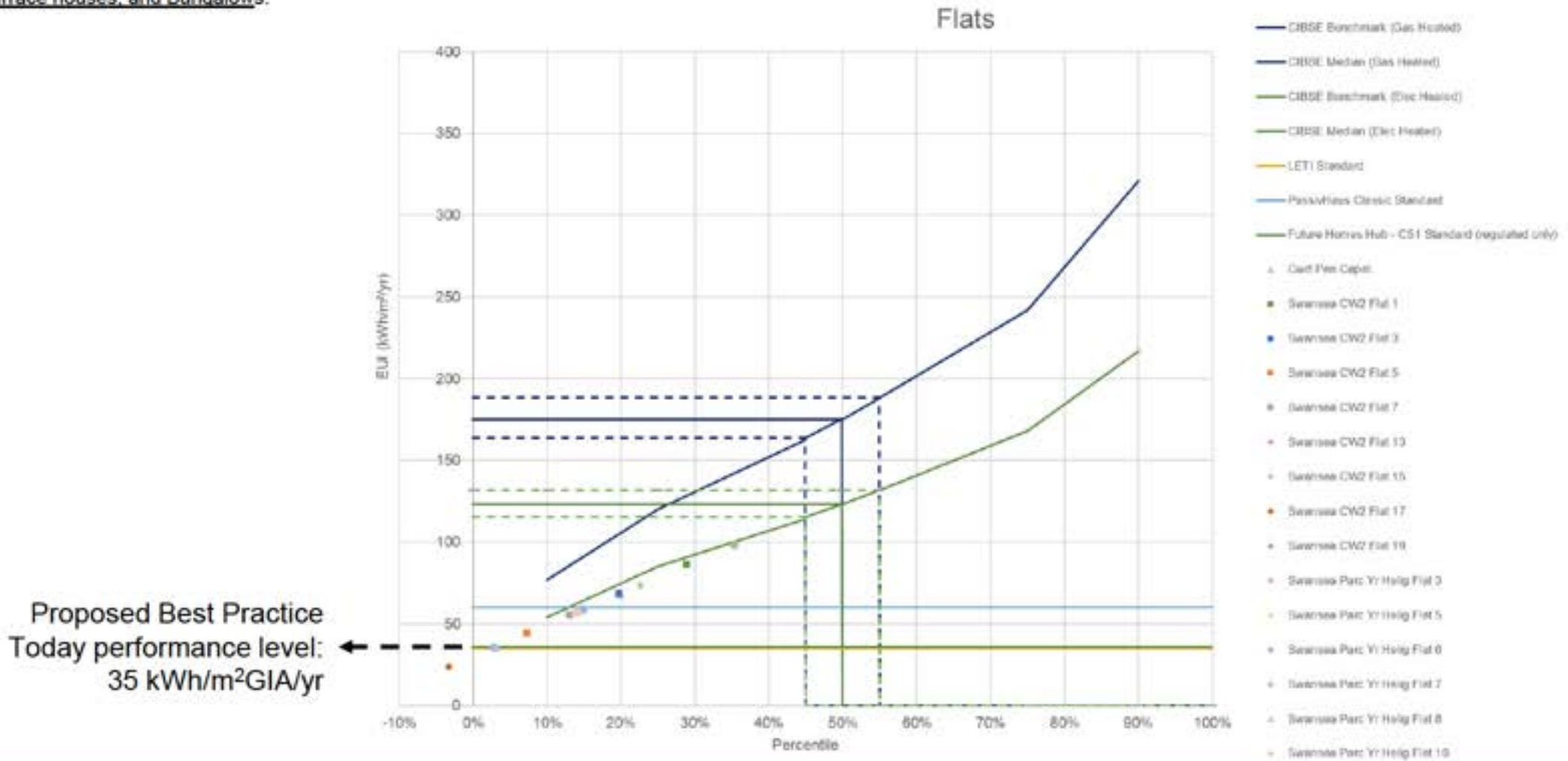
	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)					
					Best Practice today			Future exemplar		
	Core	Additional	Median	Best practice	Annual energy use	Space heating & cooling		Annual energy use	Space heating & cooling	
Metrics **Sub-sectors**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)
Flats	All internal to demises (i.e. excl. internal communal areas	None	123 (all-elec) 175 (gas + elec)	85 (all-elec) 120 (gas + elec)	35 (tbc)	15 (SH) (tbc)	10 (SH) (tbc)	tbc	tbc	tbc
Detached			118 (all-elec) 199 (gas + elec)	58 (all-elec) 148 (gas + elec)	40	20 (SH)	10 (SH)	tbc	tbc	tbc
Semi-detached and End terrace			127 -141(all-elec) 196-203 (gas + elec)	79-95 (all-elec) 145-152 (gas + elec)	tbc	tbc	tbc	tbc	tbc	tbc
Bungalow			158 (all-elec) 225 (gas + elec)	106 (all-elec) 165 (gas + elec)	tbc	tbc	tbc	tbc	tbc	tbc

Homes – Background and Next Steps

	End uses	Existing stock benchmarking	New build Performance levels (<u>for core end uses</u>)	
			Best Practice today	**Future exemplar**
Other schemes		Benchmarks: CIBSE (large database, QAed): used above	Targets and limits: • LETI: EUI of 35, SH demand of 15: PL are aligned for flats, a bit less ambitious for detached houses • RIBA Challenge - as per LETI • Passivhaus: broadly as per LETI, with a heat pump • Future Homes Hub: several levels: see informative paper in SG report, and levels plotted on sector profile analysis in SG report	
Existing buildings meeting PL?			<u>Flats:</u> 15 flats across 3 projects in Swansea: median 57.4kWh/m^2/yr (23.7-98.3); 3 of them meeting or close to proposed PL <u>Detached houses:</u> 14 houses across 6 projects: median 69kWh/m^2/yr (32.5-123.7); 3 of them meeting the proposed <u>Semi-detached and End terrace:</u> 2 houses across 2 projects: 50-80kWh/m^2/yr <u>Bungalow:</u> 2 bungalows across 2 projects : 25-50kWh/m^2/yr	
Modelling			Energy performance modelling (PHPP), including testing of space heating demand in different climates (London, Swindon, Birmingham and Glasgow) • Complete: detached houses (1 model); flats (2 models, preliminary results) • Modelling not yet complete for semi-detached / end terraces, and for bungalow Use of industry performance modelling, through comparison against LETI levels	
Performance gap			The Performance Levels are not directly the modelling results: they also take account of analysis of in-use projects, which inherently incorporate a performance gap	
Further development	-		• Complete PL for missing sub-sectors and for Future Exemplar PL • In this sector, a renewable energy generation target may be applied (using the Passivhaus methodology) rather than just a reporting requirement <u>– see question in main section of the Technical Issue on this</u> • Develop verification rules for each sub-sector, in different market segments: see proposals in SG report	

Homes

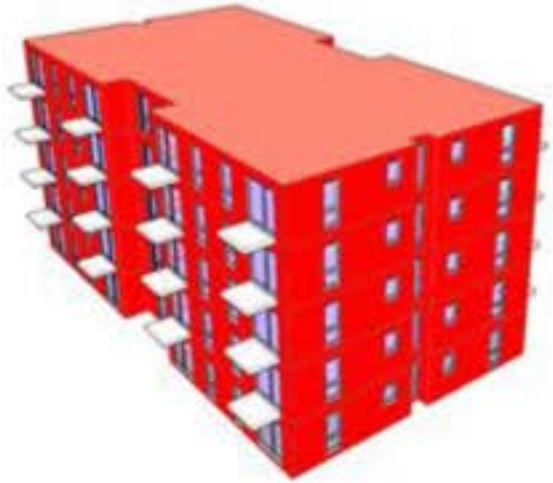
This combines data from the CIBSE database, from projects made available to the UKNZCBS through the call for evidence, and industry targets such as LETI and the Future Homes Hub. This is for Flats. Similar analysis is available in the SG profile report for the other sub-sectors i.e. Detached Houses, Semi-detached and End terrace houses, and Bungalows.

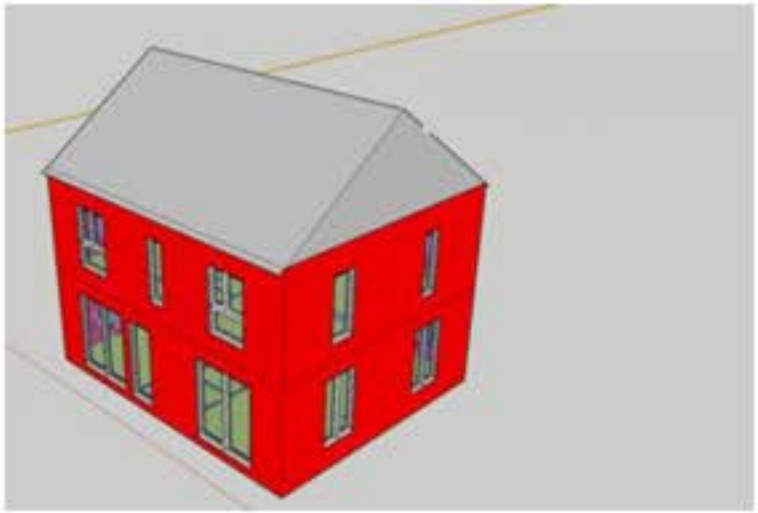


Proposed Best Practice
Today performance level:
35 kWh/m²GIA/yr

Homes

Below are illustrations of models used to inform the performance levels: flats (left, middle) and detached house (right).





Offices – Performance Levels

	End uses		Existing stock benchmarks		New build performance levels							
					Best Practice today				Future exemplar			
	Core	Additional	Median	Best practice	Whole building Annual energy use	Base building Annual energy use	Space heating & cooling	Demand flexibility	Whole building Annual energy use	Base building Annual energy use	Space heating & cooling	Demand flexibility
Metrics			kWhe/m2NIA/yr (gas@0.4)		NABERS stars or kWhe/m2NIA/yr (gas@0.4)		N/A		NABERS stars or kWhe/m2NIA/yr (gas@0.4)		N/A	
Route A: NABERS rating	Same in principle as Route B but NABERS Rules must be followed and these provide more detailed requirements so there may be some differences for very specific circumstances.		REEB 2021 Best Practice 90.0 REEB 2021 Good Practice 114.0 Local Government Offices Good Practice 120.8 Central Government Offices Good Practice 126.5 REEB 2021 Typical (Median) 164.0 Local Government Offices Typical 165.3 Central Government Offices Typical 174.3 Above data is shown graphically in slide 'Offices – performance levels vs empirical data'. Data from REEB provided to NZCBS by BBP Data for Central and Local Government Offices from CIBSE Benchmarking Tool https://www.cibse.org/knowledge-research/knowledge-resources/knowledge-toolbox/energy-benchmarking-tool		**NABERS 5 stars** Evidence for this already being achieved today is less compelling than it is for the Base Building rating The likely range of EUIs applicable to NABERS 5 stars is 75 to 140 for low (75% occupied) to high (100% occupied) intensity buildings. This is shown graphically in 2 accompanying slides	**NABERS 5 stars** The likely range of EUIs applicable to NABERS 5 stars is 62 to 76 for low to high intensity fully occupied buildings [Low Intensity of use Occupant density 1:20 Occupancy (hrs/week) 40 High Intensity of use Occupant density 1:10 Occupancy (hrs/week) 60]			**NABERS 6 stars** The likely range of EUIs applicable to NABERS 6 stars is 38 to 70 for low (75% occupied) to high (100% occupied) intensity buildings. This is shown graphically in 2 accompanying slides	**NABERS 6 stars** The likely range of EUIs applicable to NABERS 6 stars is 31 to 38 for low to high intensity fully occupied buildings [Low Intensity of use Occupant density 1:20 Occupancy (hrs/week) 40 High Intensity of use Occupant density 1:10 Occupancy (hrs/week) 60]	
Route B: EUI	Scope is all energy uses including for associated outdoor spaces (pro rata if used by other buildings). Exclusions: EV charging and non-office premises in building if sub-metered				**75 kWh/m2 NIA and 60 kWh/m2 GIA** The EUI limit equates to NABERS UK 5-stars for a low intensity building that is 75% leased or occupied zonally (minimum allowed to get a NABERS rating)	N/A			**40 kWh/m2 NIA and 30 kWh/m2 GIA** The EUI limit equates to NABERS UK 6-stars for a low intensity building that is 75% leased (minimum to be allowed a NABERS rating)	N/A		

Offices – Background and Next steps

	End uses		Existing stock		Performance levels (for core end uses)	
					Best Practice today	**Future exemplar**
Other schemes			Data from REEB and CIBSE Benchmarking Tool (DECs) See previous slide titled Offices – Performance Levels		5 star NABERS UK target is aligned with 2023 Update of BCO Guide to Specification Key Design Criteria Proposed EUI Route performance levels for new buildings are 7% higher than UKGBC NZC Paris Proof energy performance targets for offices (Jan 2020), LETI CEDG and RIBA Challenge (70 kWh/m2 NIA and 55 kWh/m2 GIA)	
Existing buildings meeting PL?					Empirical data from known low energy buildings completed since 2000 was collected for Buildings Energy Mission 2030 Very few exemplars available with verified energy data and public disclosure All buildings in this data set have a single occupier. And all are believed to be owner-occupied hence not subject to landlord – tenant conflicts related to energy efficient building operation 3 of 5 have GIA < 500 m2 All are over 5 - 15 yrs old and likely designed 10 - 20 yrs ago Four out of five buildings have EUIs > 100 kWhe/m2 NIA (gas @0.4, DH @0.5) **The Enterprise Centre UEA was 69 kWhe/m2 NIA (DH @0.5) in 2017-18** [Source: Extract of 20180211-BEIS Energy Mission-Initial report-Rev M]	Evidence for future achievability of NABERS 6 stars is provided in *Cohen RR, Desai K, Elias J and Twinn R, "Net zero carbon: energy performance targets for offices", first published by BSER&T online 09 February, 2021
Modelling					Based on independently verified industry modelling of at least 19 new projects with published Design Reviewed Target **Base Building** Ratings within Design for Performance Agreements and compliant with DfP Guide. Two thirds have 5 star target ratings, one is 5.5, the others 4 or 4.5. No dedicated modelling.	
Performance gap					25% margin on predicted performance accounted for explicitly within Design for Performance modelling. Mandatory off-axis scenarios also account for potential design failure modes and different intensities of use	
Further development			Office SG embodied carbon specialists are confident EC limits can and should be integrated with each NABERS scope to enable whole-life carbon certification		Work on streamlined verification rules for the EUI route. See Appendix to the Offices sector group report for current proposals	

See current proposals for verification on page 99

Offices - New Build Proposed Performance Levels

Please note the related consultation question on delineation of Whole building, Base building and Tenancies, on pages 19-20.

- **Option A: use NABERS UK (full suite of ratings possible: whole building, base building, tenancy)**
  - **From launch = Current Best Practice = NABERS 5***
  - From 2030 = inferred interim step = NABERS 5.5*
  - **From 2035 = Future Exemplar = NABERS 6***

NABERS UK is designed for commercial offices. By delineating whole building energy use between the base building and tenancies, it gives agency to both the landlord and each tenant to achieve energy performance limits for the energy uses each party controls and is responsible for. See below note on scopes.

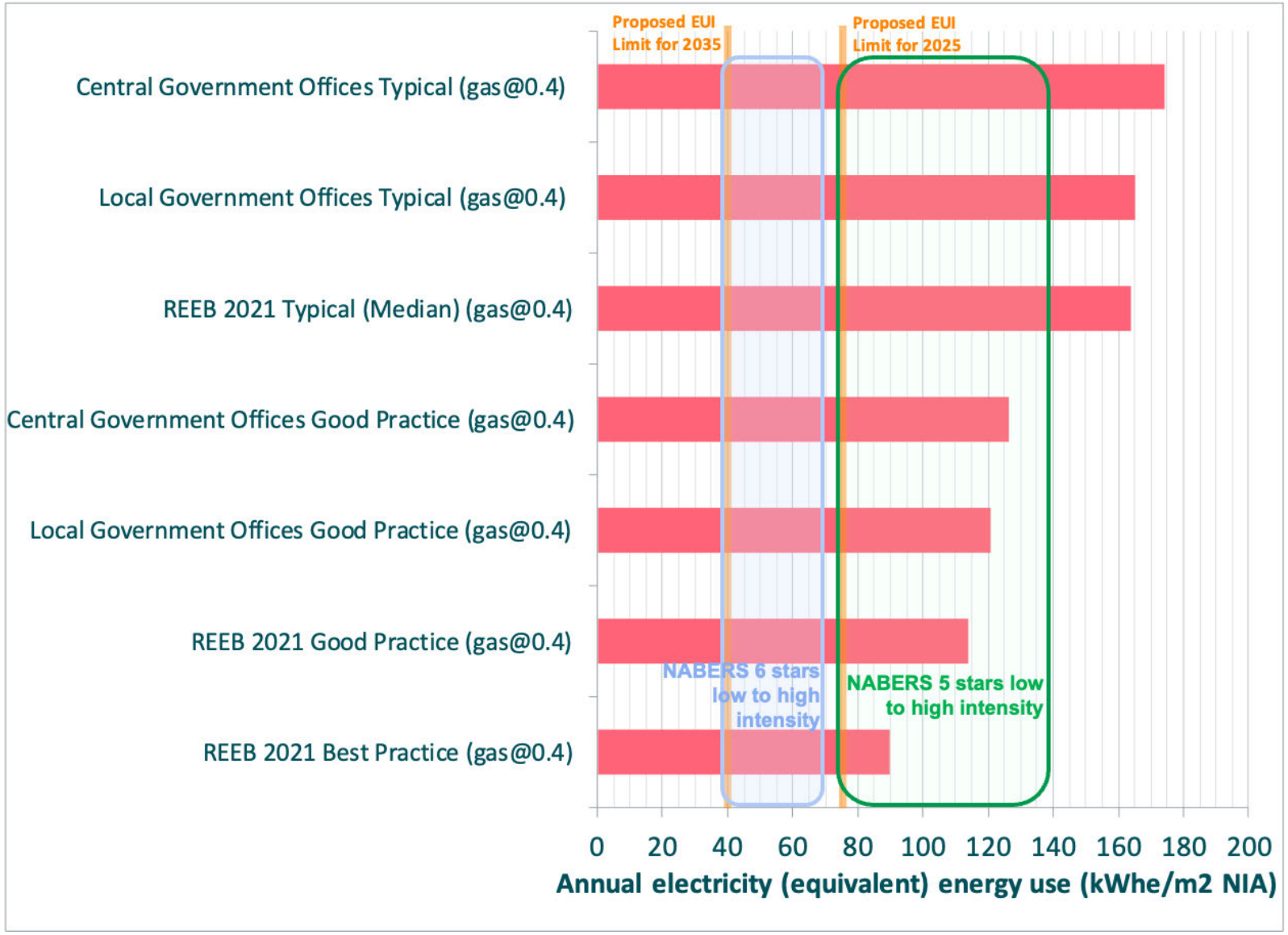
- **Option B: use EUI approach (whole building scope only)**
  - **From launch = Current Best Practice = 75 kWh/m2 NIA and 60 kWh/m2 GIA**
  - From 2030 = inferred interim step = 60 kWh/m2 NIA and 50 kWh/m2 GIA
  - **From 2035 = Future Exemplar = 40 kWh/m2 NIA and 30 kWh/m2 GIA**

The EUI method is a simpler, non-proprietary approach expected to be most applicable to owner-occupied offices for which whole building performance is the only paramount energy efficiency KPI. It may also be suitable for smaller buildings with less complex building services, not needing or wishing to expend the extra effort required to pursue the NABERS UK rating option. Proposed Rules for the EUI method are shown in an Appendix slide.

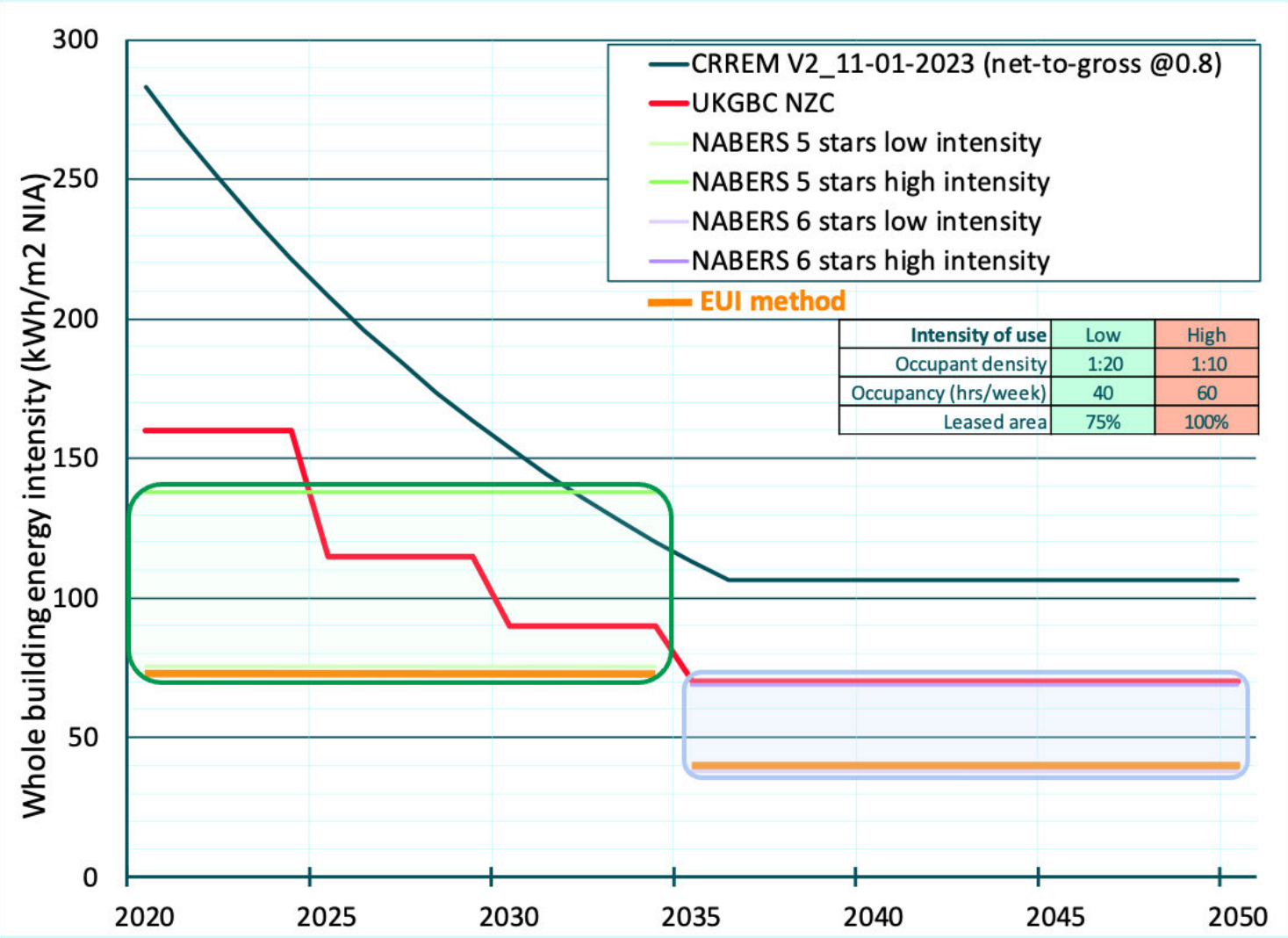
Note on timeline definition for what is a 'new building':
The first rating period experienced by the building (when it has at least 75% occupancy) starts after the given time period.
The stringency of limits applicable to a building when new may be tightened as the building ages out to 2050. This will be considered when setting limits for existing buildings.

Note on different scopes of NABERS UK ratings:
- General agreement that NZCBS should capitalise on an initiative being adopted by the industry and which is so closely aligned with NZCBS aims
- Offices Sector is seeking special dispensation to be allowed to offer NZC base building and tenancy certifications.
- Acknowledge that whole building is ultimate goal but each party must play their part and so fair to recognise when each achieves their goal
- Office SG embodied carbon specialists are confident EC limits can and should be integrated with each NABERS scope to enable whole-life carbon certification

Offices – Whole Building Performance Levels vs Empirical Data



Offices – Whole Building Performance Levels vs UKGBC and CRREM Pathways



Note: The CRREM pathway is applicable to the whole offices sector, so including existing buildings. It can be anticipated that the limits for new buildings should be more stringent.

Offices – Proposed Rule Book for EUI Method

1. Only available for whole building scope of net zero (not base building or tenancy)
2. Building must be all-electric (avoids setting rules for DH/DC etc.)
3. Energy supplied by on-site Renewable Energy Systems (RES) used by the building counts towards EUI (the EUI is for gross building energy use)
4. All energy uses (apart from EV charging) served from utility supply meter(s) must be included (no other exclusions)
5. Energy used for outdoor facilities (car parks, signage, security lighting, etc) used by any office occupiers must be included even if on a separate utility meter. if the building's associated outdoor spaces are also used by other buildings, pro rata the total energy use by NIA or GIA of each building, or by using the evidence of how the cost of this energy is recovered.
6. NIA relates to office or office like spaces only
7. Both EUI limits must be satisfied (NIA and GIA basis)
8. Energy use must be based on a continuous 365 day rating period
9. Office NIA must be verified as at least 75% leased or occupied throughout the 365 day rating period

Note on treatment of on-site RES - Rule 3 above **:**

- Rule for EUI method proposed for offices is consistent with EUI method used by other sectors for NZCBS
- NABERS UK method allows on-site RES used on-site to count towards target achievement, but this is unlikely to be worth > 0.1 stars

Note on consistency between EUI limits and NABERS UK ratings - Rule 9 above **:**

- The EUI limits equate to NABERS UK 5 or 6-stars for a low intensity building that is 75% leased (minimum to be allowed a NABERS rating)
- Buildings with higher occupancy and/or intensity which as a result do not achieve the EUI limit, have the option to use NABERS

Healthcare – Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)	
					Best Practice today	Future exemplar
	Core	Additional	Median	Best practice	Annual energy use	Annual energy use
Metrics **Space types**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr
No sub-sector, but space types defined as per NHS standard, each with performance level			75 elec + 194 thermal (see details on next page)	94 elec + 152 thermal (see details on next page)	Overall performance level determined by space mix. Indicative levels for generic buildings in each sub-sector will be produced, for comparison with benchmarks	Best Practice today is set to be aligned with NHS Standard performance levels. It is considered ambitious, so no additional level of ambition is proposed at this stage
Low tech space	As per space types	As per space types			Type 1- 30 Type 2- 70	
Medium tech space					Type 1- 95 Type 2- 45 Type 3- 40 Type 4- 50	
High tech space					Type 1- 165 Type 2- 80	
Ultra high tech & specialist spaces					n/a	
Support spaces					n/a	

Healthcare – Performance Levels

The following sub-sectors (Acute Trust, Care Trust etc) would not be directly associated with performance levels, since these performance levels would instead be provided by space type as described in the previous page, aligned with the approach in the NHS Standard. However, indicative performance levels for typical buildings in these sub-sectors could be produced for illustration and benchmarking against the existing stock.

7. Operational Energy Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)	
					Best Practice today	Future exemplar
	Core	Additional	Median	Best practice	Annual energy use	Annual energy use
Metrics **Space types**			kWh/m^{2}GIA/yr	kWh/m^{2}GIA/yr	kWh/m^{2}GIA/yr	kWh/m^{2}GIA/yr
Acute Trust	Not defined: these sub-sectors are just shown here for benchmarking purposes, not definition of core & additional uses for the purpose of the performance lEvels		112 elec + 279 thermal	146 elec + 172 thermal	Tbc (to be provided as illustration)	
Care Trust			50 elec + 162 thermal	73 elec + 143 thermal	Tbc (as illustration)	
Community Trust			62 elec + 184 thermal	83 elec + 196 thermal	Tbc (as illustration)	
Mental Health & Learning Trust			71 elec + 181 thermal	88 elec + 184 thermal	Tbc (as illustration)	
Ambulance Trust			tbc	tbc	Tbc (as illustration)	

Healthcare – Background and Next Steps

	End uses	Existing stock benchmarking	New build Performance levels (for core end uses)	
			Best Practice today	**Future exemplar**
Other schemes		Benchmarks: ERIC database, large, used for mandatory reporting: used above	• NHS Net Zero Standard: the performance levels proposed here are aligned with it. • Scottish Futures Trust: no specific limit, but an indication that it is likely as a whole building limit to be above 100kWh/m2/yr	n/a
Existing buildings meeting PL?			-	n/a
Modelling			No dedicated modelling, but modelling was carried out to inform the NHS standard.	n/a
Performance gap			tbc	
Further development	Map the sub-sectors against NHS space types, check all are covered		Produce indicative PL for full buildings with generic mixes of uses (in each sub-sector), for illustration and comparison with ERIC benchmarks and with existing projects. Develop PL for missing space types, if needed once have mapped NHS space types vs sub-sectors	

Healthcare

Overview of how UKNZCBS works with NHS Net Zero Standard, for operational energy performance levels

See details in right hand side: UKNZCBS only set performance outcomes, not elemental limits

Step 1: Building Performance Targets

Whole Building
At whole building level, the performance targets are to be applied to the envelope and other whole building systems

Step 2: Space-type Energy Limit and Performance Targets

Space-type
Identify the relevant Energy Limit or Building Services Performance Targets in the Standard for all space-types in the design

Measurement and Verification – Section 6

- Engaging Facilities Management through Government Soft Landings and Post Occupancy Evaluation Rigorous enhanced commissioning
- Extensive monitoring, metering and controls of energy usage, including publicly reported and disclosed.
- Data collection to enable the ability to report per patient outcome and treatment in the future to support decarbonising the whole NHS

Required by UK NZCBS: compliance is only achieved with in-use verification, to the UK NZCBS verification rules

Low Tech Spaces	Low Tech Type 1: E.g. Public Circulation, waiting areas	Low Tech Type 2: E.g. Offices, teaching areas
Medium Tech Spaces	Medium Tech Type 1: E.g. A&E, single ICU room	Medium Tech Type 3: E.g. Consultation
	Medium Tech Type 2: E.g. Exam/Treatment, procedure room	Medium Tech Type 4: E.g. Single bedroom, maternity ward
High Tech Spaces	High Tech Type 1: E.g. Operating Theatre	High Tech Type 2: E.g. High tech laboratories
Ultra High Tech and Specialist Spaces	Ultra High Tech and Specialist Spaces: E.g. Imaging, containment labs and burns units	
Support Spaces	Support Type 1: E.g. Catering	Support Type 1: E.g. Server Rooms
	Support Type 3: E.g. Plant spaces	

UK NZCBS follows the NHS NZ Standard classification of space types and associated energy limits, so that energy performance limits are aligned between both schemes

~~**Select Building Performance Targets**~~

~~Select and specify the performance targets values that are best suited to the building, construction type and location.~~
~~**Performance Targets include:**~~
~~Envelope - U values, air tightness, glazing parameters.~~
~~Other - metering and monitoring of energy systems, refrigerant GWP, and domestic hot water (DHW) efficiencies~~

Not required by UK NZCBS: no elemental requirements, only in-use performance outcome requirements

Energy Limits

Derive Energy Limits based on space-type, location, equipment and domestic hot water demand (DHW) based on provided ranges of values.

Advisory limits for DHW and unregulated loads.

Required by UK NZCBS: DHW and unregulated loads to be included in overall performance limits

~~**Follow Performance Targets**~~

~~Follow building services performance parameters for specialist and support spaces including AHU SFPs, SCOPs, SEERs, heat recovery efficiency and lighting loads.~~

Not required by UK NZCBS: no elemental requirements, only in-use performance outcome requirements

Sectors with a medium level of completeness and confidence on performance levels

New Build Operational Energy Performance Levels

Typically, these are sectors where:

- Some performance levels proposed, some modelling has been carried out but with a more limited scope and testing (e.g. fewer models, limited scenario testing, no dedicated accounting of the performance gap). The levels are shown here for indication, to seek industry feedback, but are still subject to much more development work.

  AND/OR

- There are few industry references that could be used to compare the proposed performance levels with.

Datacentres – Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)					
					Best Practice today			Future exemplar		
	Core	Additional	Median	Best practice	Annual energy use	Sub-sector EUI	Space heating & cooling	Annual energy use	Sector EUI **	Space heating & cooling
Metrics **Single sector, accounting for intensity of use:**			PUE*	PUE*	PUE*	kWh/m²GIA/yr	Energy Reuse Factor (ERF), as % of total heat rejection	PUE*	kWh/m² GIA/yr	heat reuse, as % of total heat rejection (ERF)
0-15% utilisation	DC + power generation / back up generation / fuel storage + MEP/ICT systems	Offices Car park, external areas	1.67	tbc	1.4	Tbc	Minimum heat re-use on site to satisfy all heating demands	1.3	Tbc	Minimum re-use on site to satisfy all heating demands
16-25% utilisation				tbc	1.35			1.22		
26-50% utilisation				tbc	1.3			1.125		
51-100% utilisation				tbc	1.2			1.1		

Sector-specific Acronyms:
***PUE** - Power Usage Effectiveness, annualised

Datacentres – Background and Next Steps

7. Operational Energy Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)	
					Best Practice today	Future exemplar
Other schemes			Uptime Institute 2020, UK average used above		None identified	
Existing buildings meeting PL?					None identified	
Modelling					Yes – tool developed by one member of the Sector Group, reviewed by other members	
Performance gap					Tbc, but expected to be less significant than in other sectors due to lesser influence from occupants than in other sectors	
Further development					Work with TSG on additional performance requirements (especially WUE - Water Utilisation Effectiveness) Peer-review of modelling tool	

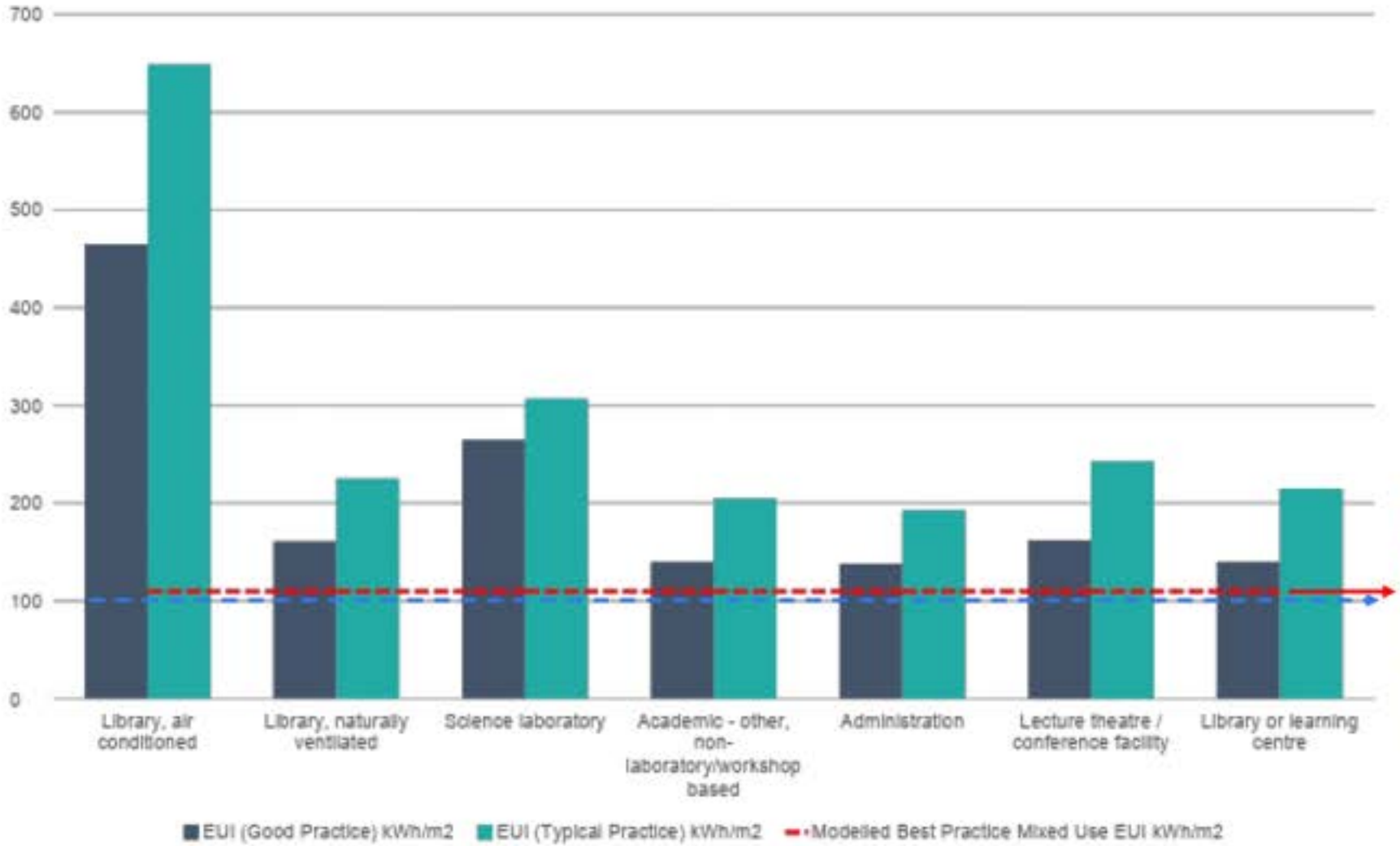
Higher Education – Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)					
					Best Practice today			Future exemplar		
	Core	Additional	Median	Best practice	Annual energy use	Space heating & cooling		Annual energy use	Space heating & cooling	
Metrics **Space types**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)
No sub-sector, but space types, each with performance levels, as detailed below. Overall performance level determined by area mix. E.g. indicative "general mix" building:					110 (for indication)	12 (SH) 5.9 (SC) (for indication)	22.5 15.1 (for indication)	tbc	tbc	tbc
Seminar / teaching spaces	As per space types	Offices, sports centre, labs, warehouse, catering, residential	196 - 261 (CIBSE "typical", gas + elec)	162 - 223 (CIBSE "good", gas + elec)	tbc	tbc	tbc	tbc	tbc	tbc
Library / learning centre			215 (CIBSE "typical", gas + elec)	140 (CIBSE "good", gas + elec)	tbc	tbc	tbc	tbc	tbc	tbc
Lecture theatre			243 (CIBSE "typical", gas + elec)	162 (CIBSE "good", gas + elec)	tbc	tbc	tbc	tbc	tbc	tbc
Workshop			205 (CIBSE "typical", gas + elec)	140 (CIBSE "good", gas + elec)	tbc	tbc	tbc	tbc	tbc	tbc

Higher Education – Background and Next Steps

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)	
					Best Practice today	Future exemplar
Other schemes			Benchmarks: CIBSE (used above) . Note they are full building benchmarks. They are not directly comparable with the Performance Levels which will apply to spaces within a building. For "seminar / teaching spaces", the range represents several CIBSE benchmarks available: Higher Ed - Lecture theatre, Further & Higher Ed – Lecture room – Arts and – Science		Targets and limits: • Scottish Futures Trust Net Zero Public Sector Building Standard: general operational energy limit of 100kWh/m²/yr for mixed-use higher education buildings / campus, possibly higher in some cases (e.g. buildings with labs) or lower in others (e.g. higher education teaching)	
Existing buildings meeting PL?					Limited selection of existing building information to provide analysis against differing space types: - One 'mixed use' new build project currently at ~126kWh/m². - Best practice mixed use Passivhaus facility performing at ~97kWh/m²	
Modelling					TM54 model on one 'mixed use' building to provide indication of performance for a 'general' facility	Tbc e.g. higher efficiencies for some systems (though already high efficiencies assumed), reduced performance gap
Performance gap					Integrated within TM54 model, through consideration of operational factors (occupancy, system run hours, small power usage etc.)	
Further development					Produce Performance Levels per space type, for Best practice today and for Future Exemplar Produce indicative PL for full buildings with generic mixes of uses, for illustration and comparison with benchmarks and with existing projects.	

Higher Education



Indicative "Best practice today" performance level (tbc – as per previous page): 110 kWh/m²/yr

Scottish Futures Trust limit (broadly, with possible variations – as per previous slide): 100 kWh/m²/yr

Note: Typical and Good Practice benchmark EUIs presented here are a simple addition of electricity and gas benchmarks

Science and Tech – Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)					
					Best Practice today			Future exemplar		
	Core	Additional	Median	Best practice	Annual energy use	Space heating & cooling		Annual energy use	Space heating & cooling	
Metrics **Sub-sectors**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)
Research Lab – General (< or = CL 2)	tbc	Specialist equipment which has safety critical function (i.e. ETP etc.)	860 (median)	400 (10th percentile from i2SL)	tbc 310-300	tbc 7.9-22.4 (SH) 28-37.4 (SC)	tbc 26.8-36.1 (SH) 49.5-113.5 (SC)	tbc	tbc	tbc
Research Lab – High Demand (CL3 or above, Animal Unit etc)	tbc				tbc	tbc	tbc	tbc	tbc	tbc
Pharmaceutical R&D	tbc				tbc	tbc	tbc	tbc	tbc	tbc
Pharmaceutical Manufacturing	tbc				tbc	tbc	tbc	tbc	tbc	tbc
Computational Science	tbc				tbc	tbc	tbc	tbc	tbc	tbc
Other science & technology building	tbc				tbc	tbc	tbc	tbc	tbc	tbc

Science and Tech – Background and Next Steps

	End uses	Existing stock benchmarking	New build Performance levels (for core end uses)	
			Best Practice today	Future exemplar
Other schemes		Benchmarks Median: BEES: Low confidence Best practice: 306 buildings, taken mainly from i2SL (International Institute for Sustainable Laboratories) benchmarking tool. All are in use US Lab buildings, screened by matching climate zone as UK) plus 12 labs sourced from the call for evidence, from DEFRA and Astra Zeneca	No current ratings / standards / certification schemes to compare to the proposed performance levels.	
Existing buildings meeting PL?			There are 28 US buildings achieving the proposed draft performance level, from the available data set. No detailed broken down data for any in- use buildings.	
Modelling			TM54 modelling, under a range of inputs and profiles to give an indicative level of performance.	
Performance gap			Tbc: this will be defined as part of setting PL, once modelling is complete	
Further development	Sub-sectors to be confirmed, depending on assessment for the need (or not) of different performance levels		Confirm PL through: - Confirmation of core vs additional end uses and other specialist equipment (e.g. within total PL, or as additional energy use allowance, or as decided performance requirement for that system) - Confirmation of whether and how to address intensity of use (e.g. adjustable EUI based on sliding scale descriptions of lab type plus % lab area within the building) within PLs - more modelling (scope and number of models), and calibration with as built data to stress test the impact of inputs.	

Logistics and Warehouses – Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)					
					Best Practice today			Future exemplar		
	Core	Additional	Median	Best practice	Annual energy use	Space heating & cooling		Annual energy use	Space heating & cooling	
Metrics **Sub-sectors**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)	kWh/m²GIA/yr	Annual demand (kWh/m²/yr)	Peak demand (W/m²)
Un-conditioned storage	Logistics, warehousing/storage, picking	Office and associated staff support areas e.g. canteen	Electric 67 + Fossil fuel 169 (CIBSE typical Distribution warehouses)	Electric 53 + Fossil fuel 103 (CIBSE good – not best Distribution warehouses)	33.7 tbc	2.34 (SH) 0.19 (SC) tbc		12.6 tbc	1.3 (SH) 0.016 (SC) tbc	11.14 (SH) 0.16 (SC) tbc
Conditioned storage					tbc	tbc	tbc	tbc	tbc	tbc
Distribution sorting – main hub					294 tbc	0.19 (SC) tbc		125 tbc	109 (SH) 0.014 (SC) tbc	208.2 (SH) 0.22 (SC) tbc
Distribution – final mile					tbc	tbc	tbc	tbc	tbc	tbc
Automated picking					tbc	tbc	tbc	tbc	tbc	tbc
Manual picking					tbc	tbc	tbc	tbc	tbc	tbc
Cold store			tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc

Logistics and Warehouses – Background and Next Steps

7. Operational Energy Performance Levels

	End uses	Existing stock benchmarking	New build Performance levels (for core end uses)	
			Best Practice today	**Future exemplar**
Other schemes		CIBSE, used above	CRREM – Distribution Warehouses: • Cold - 2030: 84 kWh/m^2, 2040: 65 kWh/m^2 • Warm - 2030: 36 kWh/m^2, 2040: 25 kWh/m^2	
Existing buildings meeting PL?			In-use projects have been identified within the sector group and network which have shown a similar range of improvement (more than 40% improvement), and thus guided the evaluation process	
Modelling			TM54 modelling: 1 model per sub-sector; scenario testing not complete.	TM54 modelling: 1 model per sub-sector; scenario testing not complete.
Performance gap			Not yet accounted for in the numbers above, which are simply modelling results – approach to the performance gap is tbc e.g. additional margin to be added, or performance gap to be included in some scenario testing in the model	
Further development	-		Complete the modelling and produce Performance Levels for all sub-sectors.	

Retail – Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)							
					Best Practice today				Future exemplar			
	Core	Additional	Median	Best practice	Annual energy use	Sub-sector EUI equivalent	Space heating & cooling	Demand flexibility	Annual energy use	Sub-sector EUI equivalent	Space heating & cooling	Demand flexibility
Metrics **Sub-sectors**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²/yr – m2 GIA unless stated	kWh/m²GIA/yr		-	kWh/m²/yr – m2 GIA unless stated	kWh/m²GIA/yr		-
High Street Retail Units	tbc	tbc	125	69	tbc				tbc			
High Street Retail – Food & Beverage	tbc	tbc	723	180	tbc				tbc			
Retail Centre – Landlord Areas	tbc	tbc	137	63	57 (Not modelled) per m² CPA	tbc			tbc	tbc		
Retail Warehouse	tbc	tbc	183	84	Tbc 80.8	tbc			tbc	tbc		
Supermarket	tbc	tbc	459	342	Tbc 191.6	tbc			tbc	tbc		

Retail – Background and Next Steps

	End uses	Existing stock benchmarking	New build Performance levels (for core end uses)	
			Best Practice today	Future exemplar
Other schemes		Benchmarks: several sources have been identified e.g. REEB, CIBSE – listed in SG report. The benchmarks above are based on submitted datasets, converted to approximate all-electric total using a conversion factor from gas to electricity of 0.76	Targets and limits: 2035 CRREM targets	
Existing buildings meeting PL?			None identified at this stage	
Modelling			TM54 dynamic modelling carried out on supermarket and warehouse. Scenario testing: London and Glasgow; 2020 and 2080; normal and extended operating hours Supermarket: detailed HVAC modelling Warehouse retail: simple HVAC, which was considered acceptable given the limited level of complexity in the servicing strategy, the end-uses and the overall operation of a retail warehouse	
Performance gap			The indicative performance levels currently shown are "raw" modelling results, but with some scenario testing to incorporate an element of performance gap: 'typical hours' use as well as extended operational scenarios have been modelled to understand the range of EUI performances between a perfect operation within standard operating hours and a 24-hour operation.	
Further development			• Finalise performance levels for warehouses and retail, including more scenario testing and confirmation of how to treat variations such as operating hours • Produce performance levels for the remaining sub-sectors • Produce Future Exemplar Performance levels	

Sectors at early stage of development for the performance levels

New Build Operational Energy Performance Levels

Typically, these are sectors where:

- No performance levels have yet been developed, but
- The proposals here include the sector analysis i.e. proposed sub-sectors, proposed performance metrics, and analysis of energy use in the existing stock.

The sector analysis is the foundation for performance levels, to understand where the performance levels sit against the existing stock, and how to assess performance in these sectors (which sub-sectors should have different limits, what metrics to use etc). As these sectors are typically less well understood by the wide industry, the sector analysis is very important to inform the next stages of development, so the Standard team would welcome feedback on the proposals.

Hotels – Performance Levels

Examination of metrics for annual energy use: Three metrics are commonly used in this sector and are currently considered for setting annual energy use limits: per m² GIA, per m² conditioned area (m²CA), and per bedroom. Evaluation of their pros and cons to decide the most relevant one/s for the Standard will be carried out once modelling results are available. Figures in the table below are based on conditioned area to be approximately 80% of GIA.

Comments on the choice of metric are welcome as part of the consultation response. ***(56)***

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)							
					Best Practice today				Future exemplar			
	Core	Additional	Median	Best practice	Annual energy use		Sub-sector EUI equivalent	Space heating & cooling	Annual energy use		Sub-sector EUI equivalent	Space heating & cooling
Metrics **Sub-sectors**			kWh/m²/yr	kWh/m² /yr	kWh/m²GIA /yr **OR** kWh/m²CA/ yr - tbc	kWh/m²/bedroom - tbc	kWh/m²GIA /yr	tbc	kWh/m²GIA/yr **OR** kWh/m²CA/yr - tbc	kWh/m²/bedroom - tbc	kWh/m²GIA/yr	tbc
High (5 Star)	Bedrooms, Common areas, Back of House	Swimming pool, Conference, Laundry, Restaurant, Kitchen	389 (m²CA) or 311 (m² GIA)	82-314 (m²CA) or 65-251 (m² GIA)	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc
Medium (3-4 Star)			210-320 (m²CA) or 168-256 (m² GIA)	68-153 (m²CA) or 54-123 (m² GIA)	tbc	tbc	tbc		tbc	tbc	tbc	tbc
Low (2-1 Star)			195 (m²CA) or 156 (m² GIA)	82-151 (m²CA) or 65-121 (m² GIA)	tbc	tbc	tbc		tbc	tbc	tbc	tbc

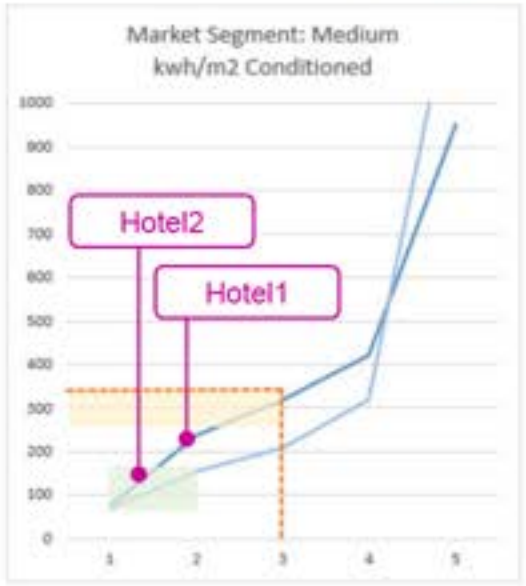
7. Operational Energy Performance Levels

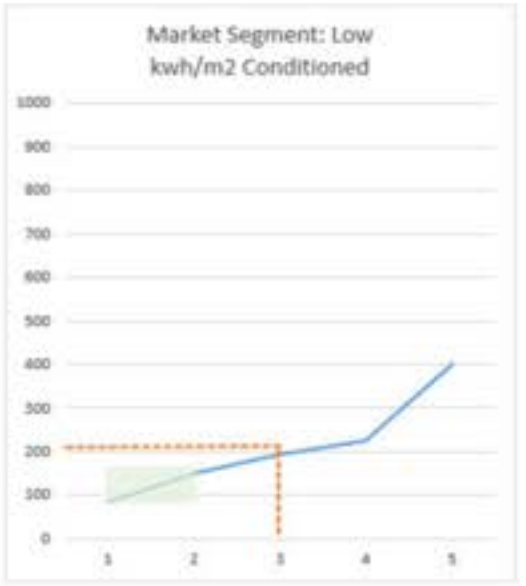
Hotels – Background and Next Steps

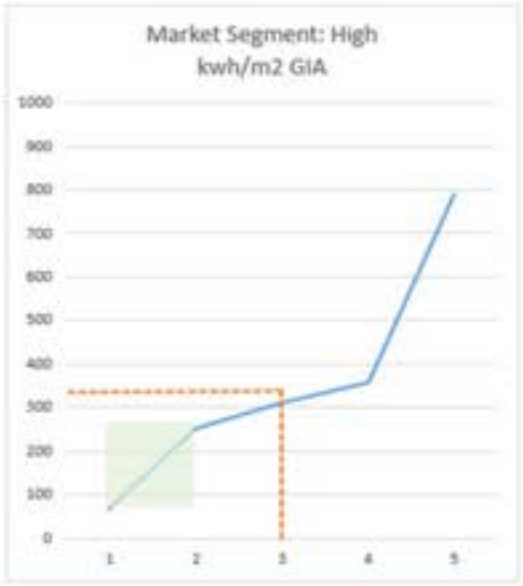
	End uses		Existing stock benchmarking		New build Performance levels (<u>for core end uses</u>)	
					Best Practice today	**Future exemplar**
Other schemes			Benchmarks: CIBSE and BEES datasets are from 2012 and 2014 respectively, and are not considered representative of latest technologies and practices. Additionally BEES doesn't provide market segment granularity. The Cornell dataset has been used here as it contains data from 2019 and includes multiple granularity levels		Targets and limits: None have been identified	
Existing buildings meeting PL?					Projects have been identified through call for evidence, which will be available for comparison as performance levels are developed. *Submission of best practice projects in response to this consultation is welcome.*	
Modelling					TM54 modelling not yet complete, under way for 5 Star sub-sector, for 3 typologies (small / town house, country, metro). Including scenario testing – see details in SG report	
Performance gap					Within TM54 modelling, including scenario testing – see details in SG report	
Further development	-				Complete modelling and PL for all sub-sectors	

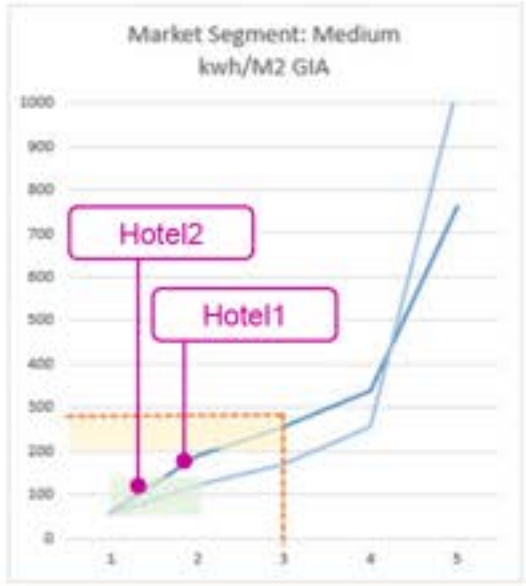
Hotels – Existing stock profile

4 Star
3 Star









As noted in the previous slide, CIBSE and BEES benchmarks are not used here due to lower levels of confidence. Details and a comparison with the Cornell benchmarks are included in the sector profile report.

Cornell Data for Graphs

kWh/m2 Conditioned						Sub-sector
Sub-T	Low	Lower Q	Median	Upper Q	High	
5 Stars	82	314	389	449	988	High
4 Stars	74	237	320	423	953	Medium
3 Stars	68	153	210	320	1298	
2 Stars	82	151	195	226	402	Low
kWh/m2 GIA						
Sub-T	Low	Lower Q	Median	Upper Q	High	
5 Stars	65	251	311	360	791	High
4 Stars	60	189	256	339	763	Medium
3 Stars	54	123	168	256	1038	
2 Stars	65	121	156	181	321	Low

Hotels from call for evidence

	Hotel 1 (high end)		
3.5 Star			
kWh/yr	712,000		
GIA	4,000	178	kWh/m2 GIA
Conditioned	3,200	223	kWh/m2 Conditioned
	Hotel 2 (high end)		
4 Star			
kWh/yr	393,207		
GIA	3,200	123	kWh/m2 GIA
Conditioned	2,560	154	kWh/m2 Conditioned

Sports and Leisure – Performance Levels

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)			
					Best Practice today		Future exemplar	
	Core	Additional	Median	Best practice	Annual energy use	Sub-sector EUI equivalent	Annual energy use	Sub-sector EUI equivalent
Metrics **Sub-sectors**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²GIA/yr
Dry leisure centre	Sports areas and associated staff & customer support e.g. shower and changing etc	Tbc e.g. high intensity uses such as ice rinks; athletics tracks and associated lighting; community uses ("warm spaces")	Electric 60 + Fossil fuel 116 (ref: see below)	Electric/total 90 No fossil fuel	tbc	tbc	tbc	tbc
Wet leisure centre			Electric 111 + Fossil fuel 380 (ref: see below)	Electric/total 320 No fossil fuel	tbc	tbc	tbc	tbc
Tbc incl. velodromes, ice rinks, stadiums, training grounds			tbc	tbc	tbc	tbc	tbc	tbc
Performance gap					Accounted for within the model			

Sports and Leisure – Background and Next Steps

	End uses	Existing stock benchmarking	New build Performance levels (for core end uses)	
			Best Practice today	Future exemplar
Other schemes		Benchmarks: Figures above are from DEC + 2 datasets from large sports & leisure operators (GLL and 1 other operator) CIBSE: considered too high	• Sports England reference designs are being used for building typologies for modelling; recommendations for "sustainable" design are out of date (10+ years) • Scottish Futures Trust: no set limit, but an indication that the operational energy use limit for dry leisure centres should be below 100kWh/m²/yr, and that for wet leisure centres should be above.	
Existing buildings meeting PL?			Dry: None identified at this stage Wet/mixed (completed in last 18 months): • New build A - designed 100kWh/m²/yr - 1st% • New build B - design limit published 375kWh/m²/yr - 22nd% • New build C - DEC 291kWh/m²/yr - 12th% Note large range of performance. New build B is recently completed and designed to Passivhaus standard, but falls around 22nd% of existing building stock - well outside proposed performance level. New build C falls within proposed PL but uses fossil fuel. The variation is likely due in part to the mix of facilities within each building. "Wet" areas use much more energy than "dry" areas. The 320 limit would be for a facility that has a large proportion of wet areas compared to dry.	
Modelling			TM54 modelling being carried out based on the Sports England reference building types – not yet complete.	
Performance gap			Accounted for within the model	
Further development	Consider expansion to other sub-sectors such as stadia, but no data is available for those.		• Finalise modelling for "bare minimum" pool, so it can be used as "additional energy use" PL in other sectors e.g. hotels, secondary schools • Modelling and PL for dry and wet leisure centres. • Ideally provide benchmarks/limits for wet, dry (sports hall, low energy intensity) and fitness (dry but with higher energy intensity to run machines, vent/cooling etc) that can be weighted according to the % area within a building	

Sports & Leisure – Existing stock profile

This combines data from the DEC database, and that from 2 large sports & leisure operators, made available to the UK-NZCBS through the call for evidence. The SG report also includes graphs using data from just these 2 data providers, with resulting median values. The results are a bit lower than those shown here including the DEC dataset, but not markedly different.
This is for Wet leisure centres. Similar analysis is available in the SG profile report for Dry leisure centres.

Commercial Residential – Performance Levels

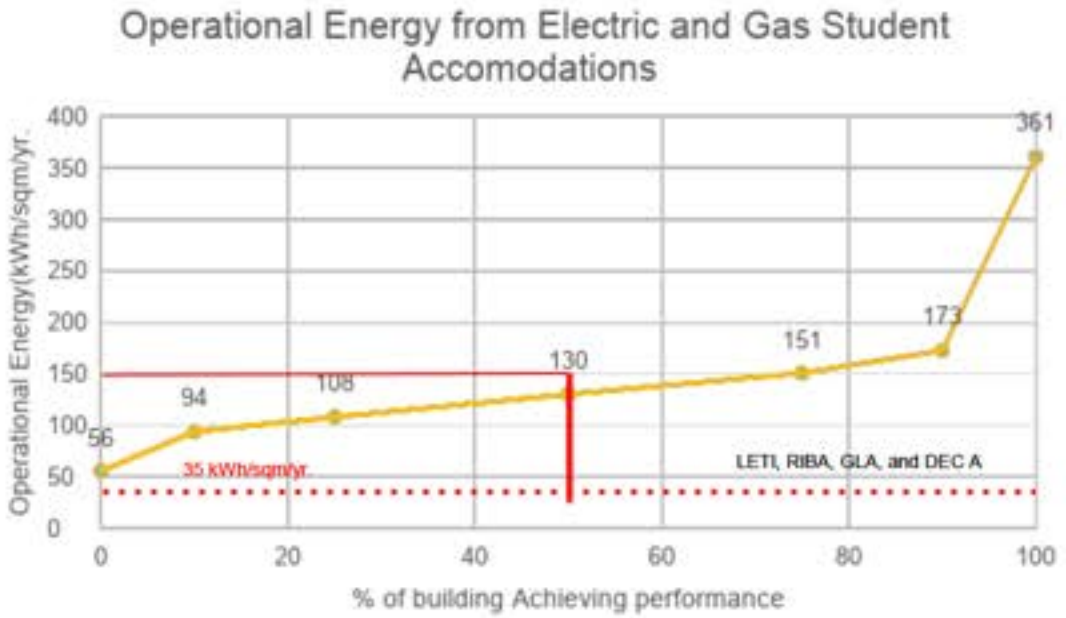
	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)					
					Best Practice today			Future exemplar		
	Core	Additional	Median	Best practice	Annual energy use	Sub-sector EUI equivalent	Space heating & cooling	Annual energy use	Sub-sector EUI equivalent	Space heating & cooling
Metrics **Sub-sectors**			kWh/m²GIA/yr	kWh/m²GIA/yr	kWh/m²/yr	kWh/m²GIA/yr	Annual space heating demand, kWh/m²/yr	kWh/m²/yr	kWh/m²GIA/yr	Annual space heating demand, kWh/m²/yr
Student accommodation	Heating Cooling Fans Heat Rejection Pumps DHW Lighting Small Power (e.g., computers / TVs / other) Cooking Elevators Refrigeration	Laundry Server rooms Admin spaces	124 (all elec) 130 (gas + elec) (50th)	94 (10th)	tbc	tbc	15 (space heating) - tbc			15 (space heating) - tbc
Care homes			Not available – see comments on next slide. Indicative range: 130-145 kWh/m²GIA/yr	Not available – see comments on next slide. Indicative range: 70-90 kWh/m²GIA/yr	tbc	tbc	15 (space heating) - tbc			15 (space heating) - tbc

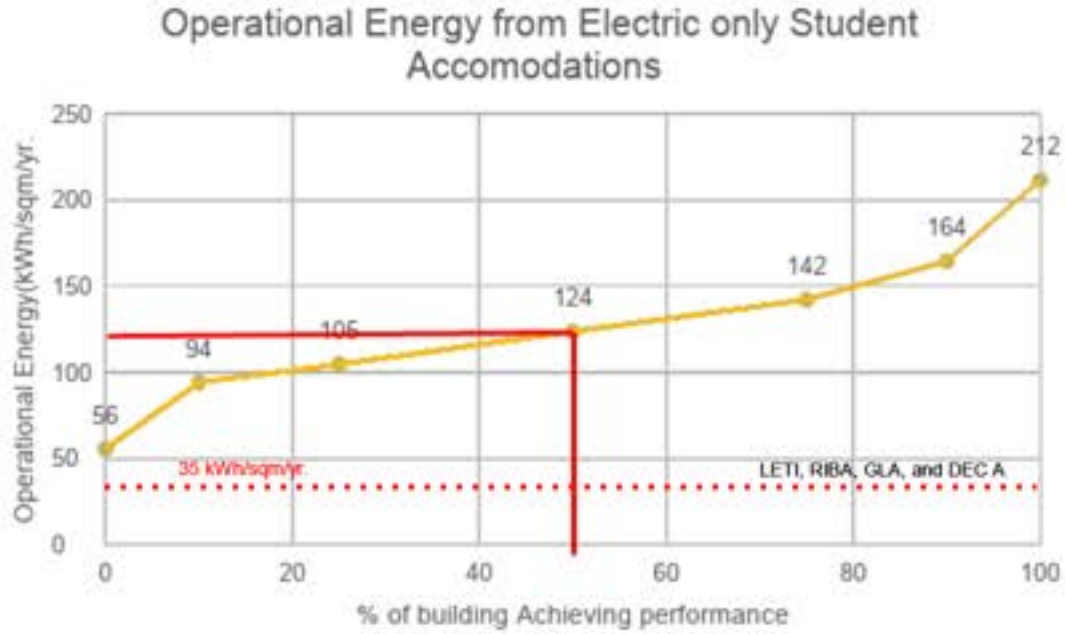
Commercial Residential – Background and Next Steps

	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)	
					Best Practice today	**Future exemplar**
Other schemes			Benchmarks: Student accommodation: the above is based a collection of 80 student accommodation operational energy consumption (2019). Care homes: No available benchmarks were identified. The range above is based on healthcare (per the NHS recommendations to follow LETI offices) and residential (RIBA Challenge), with care homes expected to sit somewhere between the two.		Targets and limits: Student accommodation: proposing general Net Zero initiatives • Unite Students Net Zero Target: https://www.unitegroup.com/wp-content/uploads/2021/12/38271_UniteStudents_NetZero.pdf Vero Homes Net Zero Inputs: https://vertohomes.com/zero-carbon/ GSA Group: https://www.gsagroup.com/global-footprint/uk/ Care homes: none identified at this stage	
Existing buildings meeting PL?					The performance levels are not confirmed yet. Further modelling and data availability is needed.	
Modelling					One model for a Care Home building has been produced. Further modelling, including scenario testing (e.g. climate variations) and additional models, are needed in order to produce performance levels.	
Performance gap					Tbc as part of development of Performance Levels	
Further development	Develop the current existing stock median and best practice values with a bigger dataset for increased accuracy.				Develop Performance Levels for the 2 sub-sectors based on 3 IES models per sub-sector, against agreed performance metrics, and with involvement of a qualified third party to QA the models and assumptions.	

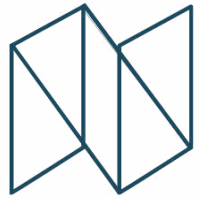
Commercial Residential

The dataset represents a collection of 80 student accommodations from the year 2019 operational energy consumption. Graph 1 dataset represents heat from gas boilers, local electric heating, and district heating. Graph 2 dataset is limited to local electric heating and district heating.





Culture and Entertainment – Performance Levels

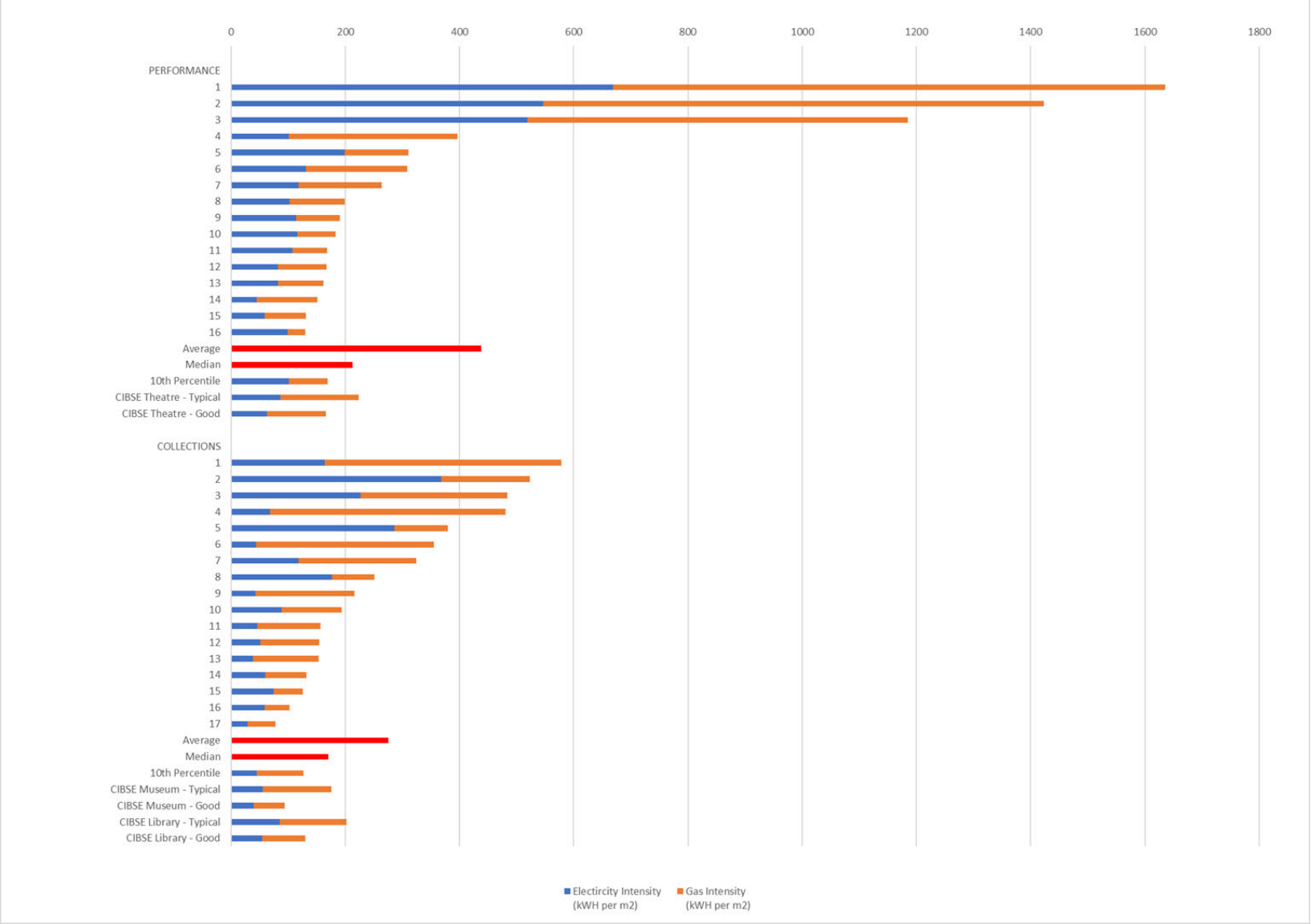


	End uses		Existing stock benchmarking		New build Performance levels (for core end uses)							
					Best Practice today				Future exemplar			
	Core	Additional	Median	Best practice	Annual energy use	Space heating & cooling		Demand flexibility	Annual energy use	Space heating & cooling		Demand flexibility
Metrics **Sub-sectors**			kWh/m^{2}GIA/yr	kWh/m^{2}GIA/yr	kWh/m^{2}GIA/yr				kWh/m^{2}GIA/yr			
Performance (interval based)	theatres, cinemas, opera houses	catering, workshops for producing theatres	Total: 203 Gas: 102 Elec: 111	Total: 134 Gas: 63 Elec: 70 (10th Percentile)	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc
Collection based (non-interval)	museums, art galleries (possibly visitor centres and libraries)	archives	Total: 170 Gas: 111 Elec: 59	Total: 91 Gas: 50 Elec: 41 (10th Percentile)	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc

Culture and Entertainment – Background and Next Steps

	End uses	Existing stock benchmarking	New build Performance levels (<u>for core end uses</u>)	
			Best Practice today	**Future exemplar**
Other schemes		Other industry benchmarks available: • Julie's Bicycle: at organisation level • CIBSE benchmarks are available for Theatres, Museums and Libraries, based on DECs. They are shown for comparison in the following slide. The ones for Cinemas are considered too old. The benchmarks proposed in the table in the previous page are derived from a combination of projects from Julie's Bicycle database as well as projects submitted through the call for evidence – see details on next slide.	Targets and limits: there are (as of yet) no clear recommended targets that are science-based targets.	
Existing buildings meeting PL?			TBC once Performance Levels are developed	
Modelling			<u>Performance buildings:</u> Modelling has been carried out for buildings in the Performance sub-sector, but not yet completed. The results are significantly better than the current 10th percentile, so need more analysis and refinement. <u>Collections buildings: A</u> model is available - on-going.	
Performance gap			Tbc as part of development of Performance Levels	
Further development	Confirm benchmarks (median and best practice) for both sub-sectors		Develop performance levels for the 2 sub-sectors, against agreed performance metrics	

Culture and Entertainment



7. Operational Energy Performance Levels

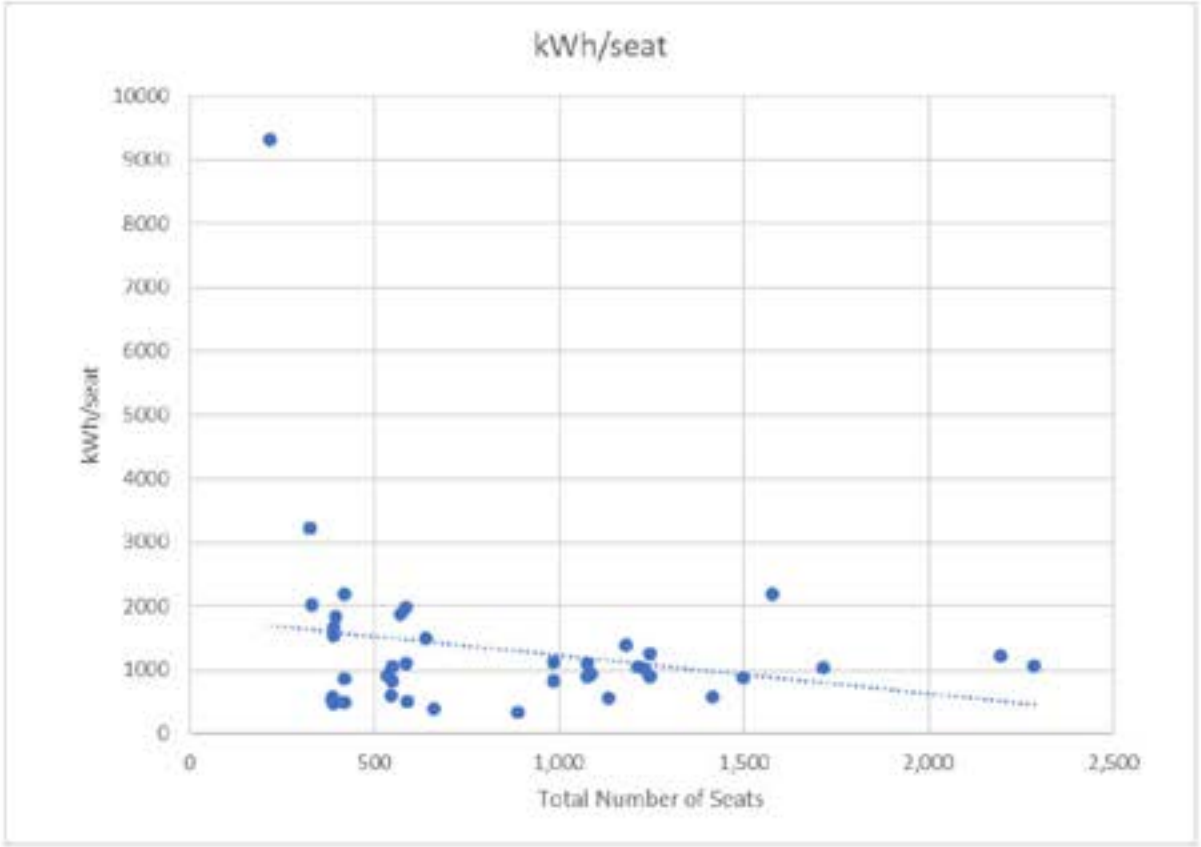
Energy Use Intensity for current benchmark projects, and CIBSE benchmarks where available

Culture and Entertainment

Examination of metrics for annual energy use:

- Based on rudimentary DEC analysis, area per seat varies.
- There is a trend to theatres with larger seat counts have slightly lower EUI per seat – but it is a shallow trend line.
- The 'cleanest' metric is EUI per m^2 of total floor area, possibly with EUI per seat as a sub-metric.
- EUI per ticket sale was also considered, but is difficult to collect as a wide dataset.
- All told, the Sector Group's view is that EUI per m^2 of total floor area is the best metric to use.

Comments on this choice of metric are welcome as part of the consultation response. (57)



New Build Operational Energy Performance Levels

Talking Points

52. Do you have comments on the benchmarks (median and best practice) for the existing stock detailed in this section, and additional information which could refine these? Please provide evidence to support your comments

- Sector and sub-sector to which your comments apply
- Can you recommend other benchmark sources we have not identified here?
- Any other comments on the median benchmark?
- Any other comments on the best practice benchmark?

53. Do you have comments on the sector analysis detailed in this section, and additional information which could refine it? Please provide evidence to support your comments

- Sector and sub-sector to which your comments apply
- Comments on the proposed categorisation into sub-sectors?
- Comments on the proposed "core" and "additional" energy end uses?
- Comments on proposed performance metrics?
- Any other comments?

54. Do you have comments on the performance levels detailed in this section, and additional information which could refine them? Please provide evidence to support your comments

- Sector and sub-sector to which your comments apply
- Comment on the "best practice today" performance level: do you think it is too ambitious, or not ambitious enough? Please provide evidence for your comments e.g. data from an existing building in this sub-sector, energy performance modelling in this sub-sector
- Any other comments?

55. Would you be able to contribute to further development of performance levels in a sector or sub-sector? If so, please provide your email, the sub-sector(s), and the type of support you could provide:

- Sector and sub-sector to which your comments apply
- Expertise of energy use in that sub-sector
- Energy performance modelling
- Project examples with in-use energy data
- Other - please specify

Next Steps

Operational energy performance levels

Please do complete the technical testing **consultation** giving feedback on the operational energy performance levels and associated background i.e. sub-sectors, performance metrics, existing stock benchmarks and best practice projects.

If you think from your experience that the performance levels shown are too high/low, we would encourage you to share the data from your own projects - see consultation questions in previous slide.

Please also get in touch if you can support the development of performance elves in any sector, but particular in:

- The sectors where draft performance levels are currently available but at an early stage of development: Datacentres, Higher Education, Science & Tech, Logistics & Warehouses, Retail.
- The sectors where draft performance levels are not yet available i.e. Hotels, Sports & Leisure, Commercial Residential, Culture & Entertainment.

"A huge thank you to all the individuals and companies who have submitted operational energy data in aggregate or for individual projects, and who have provided modelling and analysis resources to develop our understanding of operational energy use in the UK."

Julie Godefroy,
Chair of Operational Energy Task Group

8. Top-down Pathways

Current workstream and developments driven by climate science

Overview

Top Down – What this means:

Task Group 1c is tasked with developing the science based methods and principles of how the UK National Carbon Budget is allocated to the built environment, so that each sector and asset is doing their fair share to ensure the UK achieves net zero by 2050.

Key Roles and Responsibilities

- Establishing the nationally derived carbon 'budget allocations' for each of the built environment sectors so that they are aligned with science-based trajectories needed to achieve net zero by 2050 and 78% by 2035 in the UK.

- Developing a suite of asset level budget-aligned, science based net zero carbon characteristics, limits and targets.

Introduction

The Top-down Task Group has been developing the methods and principles behind the national budget allocation process. This includes establishing the relevant national carbon 'budgets' for each sector and aligning these with science-based trajectories needed to achieve net zero by 2050 and 78% by 2035 in the UK (see p. x).As well as establishing the carbon budget, a stock model and a downscaling methodology have been developed, which is described overleaf.

Approach

All industries on 1.5C pathway

The work has sought to understand what the carbon budget for the built environment would be if all industries were on track to meet a 1.5°C pathway, recognising that this is not the case. This approach should result in targets that are highly ambitious, without requiring the built environment to compensate for underperformance in other industries.

Background:
According to the UN Environment Programme, there is "no credible pathway to 1.5°C in place", and recent reports indicate that the world is going to exceed that temperature limit within the next few years.

On that basis, the remaining carbon budget that complies with a 1.5°C pathway – not just for the built environment, but for all economic industries– is essentially zero.

However, there is an unavoidable practical need for some types of construction, maintenance and refurbishment to proceed. Therefore approach assumes equity across industries making similar ambitious progress.

Stock Model

A stock model is being developed which will help to inform the net zero carbon asset level energy and carbon limits.

Through extensive literature review and engagement with a broad range of prospective data partners, a series of preferred data sources have been identified which are documented in this report.

Stock Model Characteristics

- Total floor area (m^2),
- Number of properties
- Energy performance (EUI and heating fuel/fuel mix) of the residential and non-residential building stock across the UK, disaggregated into building sub-sectors (6 residential, 38+ non-residential).

- Projections of the change in floor area of the stock between now & 2050 for each sector, capturing overall growth, demolition rates, new build and retrofit projection, with a range of growth scenarios to be explored (low, medium and high growth)

Stock Model

Two stock modelling are being developed the residential and non-residential stock models, respectively.

Residential

Country	Floorspace Dataset(s)
England and Wales	EHCS (2020) & WHCS (2017-18)
Scotland	SHCS (2019)
Northern Ireland	NIHCS (2016)

Notes

The primary stock dataset will be validated against relevant comparator datasets as the model is developed (e.g. national housing statistics, EST home analytics datasets, domestic energy consumption statistics at national level).

Non - Residential

Country	Floorspace Dataset(s)
England and Wales	BEIS BEES Dataset
Scotland	Derived from Scotland's ND-NEED Baseline, mapped to BEES sub-sectors
Northern Ireland	Extrapolated from BEIS BEES Dataset, with average floor area to be derived based on population.

Notes

There has been engagement with DESNZ and UCL to clarify the timelines for a forthcoming update of the BEES study. Whilst the publication timeline does not align with the first issue of the standard, opportunities to future proof the structure of the stock model to facilitate an efficient future update are being pursued.

Carbon Budgets

Following review of the available literature and existing precedents for deriving industry/built environment-specific carbon budgets and scenarios, we have developed a set of **fourteen criteria** by which to review and assess existing budgets.

Preferred Criteria

- Future scenarios
- End user allocation
- Consumption based
- Sector definition alignment
- UK budget compatible
- Paris-aligned (1.5°C)
- Realistic
- Relevant trends
- Disaggregated (trends)
- Disaggregated (sectors)
- All GHGs
- Single dataset
- Single scenario
- Energy and carbon

Budgets Assessed

- UK GHG Inventory
- DEFRA Carbon Footprint
- CCC Carbon Budget
- BEIS EEP
- National Grid FES
- UKGBC Roadmap
- Tyndall Centre Budget

Carbon Budgets

- To date, no single data source reviewed has met all assessment criteria and no precedent for a formal carbon budget being adopted at a industry level has been identified in the UK or internationally.
- Although the Climate change committee has set out indicative decarbonisation pathways for different industries to inform decision-making, it does not prescribe sector-specific targets.
- Establishing a carbon and energy budget will therefore require further analytical work to adapt one or more of these data sources. The adjusted budgets will then be downscaled to different sub-sectors and building types to enable targets and limits to be derived.

Current Recommendation: Carbon and energy budgets derived from the CCC's Sixth Carbon Budget will be used. The carbon budgets will be 'upscaled' to reflect consumption-based emissions, rather than territorial (i.e., including embodied emissions that originate outside of the UK)*.

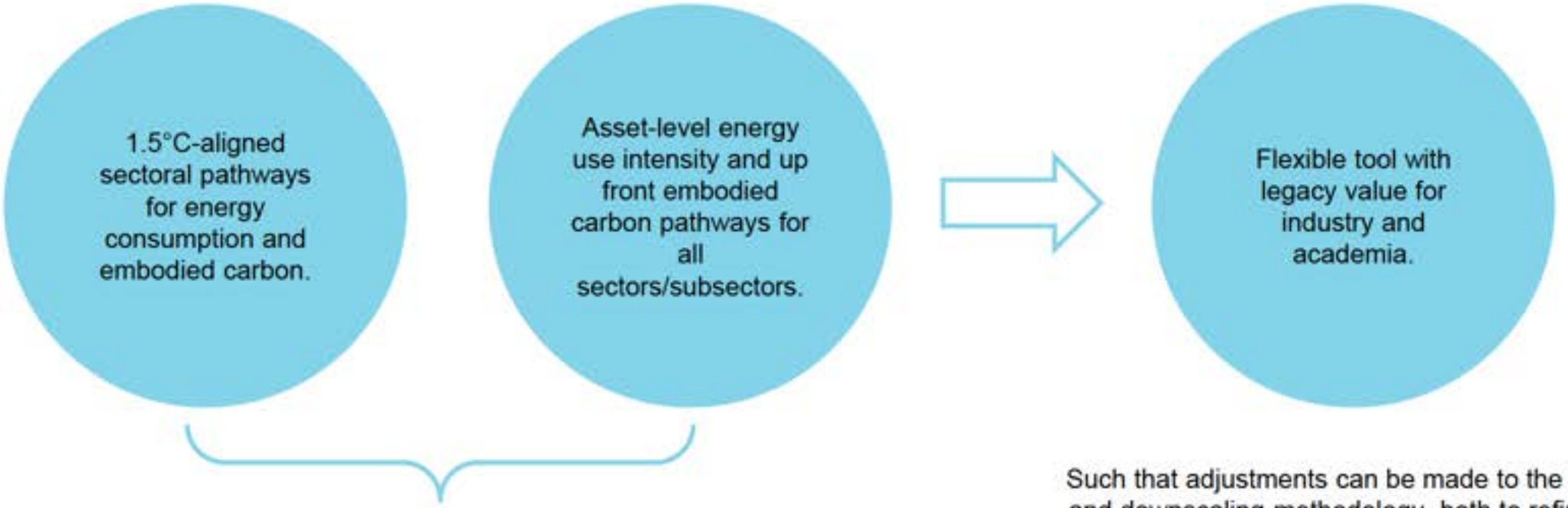
** Territorial emissions are those that occur within the geographic boundary of the UK. This approach excludes consumption-based emissions, i.e. emissions from imported goods, if these occur outside of the UK. Many construction materials are produced in other countries, which means that a territorial carbon budget would not fully account for the embodied carbon of the built environment. The process for upscaling the budget in this way is still being discussed and confirmed.*

Downscaling

- The aim of the Downscaling work was to set out a broad methodology for aligning top-down budgets with bottom-up performance data, by undertaking background research and preparation to inform the development of the Science Based Sectoral Limit Setting (SBSLS) Tool.
- The aim of the Science Based Sectoral Limit Setting Tool is to provide a functional data model which is able to 'downscale' the relevant UK national carbon and energy budgets for the built environment to asset level operational and embodied carbon limit pathways, by drawing together outputs including:
    - Energy and carbon budgets, baseline floorspace, energy use, fuel mix, and growth projections accounting for new build, refurbishment and demolition rates.
    - Embodied carbon and operational energy asset-level performance data from the Call for Evidence

Downscaling

Key outputs of the Science Based Sectoral Limits Setting Tool (SBSLS) tool are summarised below.



Taking into account not only reductions in emissions but also any consequent increases due to the actions required to deliver the net zero transition (e.g. embodied impact of retrofit).

Such that adjustments can be made to the inputs and downscaling methodology, both to refine the first iteration of the limits and to enable future use.

Top Down Elements

Talking Points

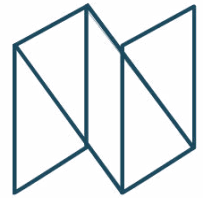
58. Do you have any comments on the proposed approach to developing the stock model?

59. Do you have any comments on the proposed approach to developing the budgets?

60. Do you have any comments on the proposed approach to developing the downscaling?

With thanks

From the UK Net Zero Carbon Buildings Standard



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Appendix F – Future Homes Hub – Embodied and Whole Life Carbon Implementation Plan 2023-2025

Future Homes Hub

Embodied and Whole Life Carbon:

2023-2025 Implementation plan for the homebuilding industry

January 2023

Supported by verco

Acknowledgements

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Thanks to steering group members for their advice and guidance and for the collaborative spirit in sharing data, evidence, feedback and ideas.

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Foreword

David Thomas
Chair of the Future Homes Hub

Climate change is the greatest challenge facing our society. It will affect how we live and work and will fundamentally change the places we call home.

As homebuilders, we need to makes changes to how we build - not just to reduce carbon emissions, but also to ensure the homes and communities we build are comfortable and resilient as our summers get hotter and drier, and our winters warmer and wetter. The record temperatures we saw this summer were a stark reminder of this.

Homebuilders up and down the country are already tackling 'in use' emissions by improving the way we heat and insulate our homes. Last year's changes to building regulations will see new homes emit 31% less carbon than before, and the upcoming Future Homes Standard in 2025 will result in a reduction of around 75%-80%.

But that is only part of the story. The process of building new homes – extracting materials, transporting them to site, preparing the ground, and the construction and installation processes – also leads to carbon emissions. Research conducted by Barratt suggests that the construction process generates twice as much carbon as the homes in use throughout their lifespan. The carbon intensity of these processes depends on how long the homes last, and what's required to maintain them.

So if we are to reach our carbon targets, we need to tackle these emissions, the "Whole Life Carbon" of the homes we build.

This is no small task. If we are to succeed, we need to make sure the decisions we take are based on correct and accurate information.

We need to know not just how individual components perform over time, but also the emissions resulting from their extraction, manufacture and installation, how long they will last, and how to maximise the lifespan of the homes and developments they comprise.

That is the aim of this piece of work: to better understand what we know, what we don't, and how to fill in the gaps.

It lays out a clear set of actions for the homebuilding industry to find the most practical ways to measure and reduce whole life carbon, at scale, while continuing to build better homes and communities for those who live in and near them.

This is a journey that housebuilders have to take. We fully expect that over the next few years, government policy will start to focus more heavily on whole life carbon, be that through regulation, procurement or planning requirements – and it is right that it does so.

Homebuilders need to understand the full implications for the homes they build. Larger businesses like Barratt have a responsibility to help smaller builders understand the whole life carbon of their activities, and the steps they can take to reduce them.

I am hugely grateful to the wide range of government, expert and manufacturing organisations who have worked with homebuilders through the Future Homes Hub in recent months to produce this report.

As we look forward to next year, I am excited to implement its findings and continue to work with colleagues across the homebuilding industry and beyond to find the best possible solutions to reduce carbon emissions from the homes we build.

We need all parts of the housing sector to pull together and reduce the embodied carbon of our buildings – it is essential to reaching net zero.

I welcome the excellent work of the Future Homes Hub to rally housebuilders to start measuring and reporting their whole life carbon data.

This is vital work, and will help the Government, housebuilders and all parts of the supply chain make informed decisions that will reduce embodied carbon while delivering the homes this country needs.

Richard Goodman
Director General for Safer and Greener Buildings, Department for Levelling Up, Housing and Communities

Executive summary

As the homebuilding sector rapidly reduces the 'operational' carbon emissions of new homes through new standards in 2021 and 2025, the next big area of focus is the 'embodied' emissions arising in the products, construction and maintenance of homes and, in total terms, the 'Whole Life Carbon' (WLC) performance of homes.

This report summarises a first phase of work undertaken by the homebuilding industry in collaboration with relevant government, expert and stakeholder bodies through the Future Homes Hub (FHH) to tackle embodied and whole life carbon in new homes. The aims of this initial phase of work have been to:

- establish an initial baseline of whole life carbon emissions for new homes
- evaluate the potential to reduce embodied and whole life carbon
- propose a framework of measurement suitable for new homes
- develop a roadmap and implementation plan to support the sector in measuring and reducing whole life carbon.

The report finds that embodied carbon in new low-rise homes is lower than originally estimated, but clearly there is more work to do. It concludes that there are currently important gaps in the framework for collecting data and measuring WLC consistently. The report then identifies the actions needed for an effective and smart approach to measuring and reducing carbon at all stages of the new development lifecycle. Core elements of the 2023-2025 implementation plan are to prepare the sector for mainstream measurement and reduction of WLC including to:

- develop and refine a simple measurement method for homebuilders, with consistent defaults and assumptions, and focussed on providing useful information to inform decision-making
- facilitate voluntary mainstream measurement, analysing data to improve understanding of the baseline and reduction options
- develop benchmarks and targets for the sector
- coordinate engagement with supply chain to improve current data and understand future carbon reduction pathways.

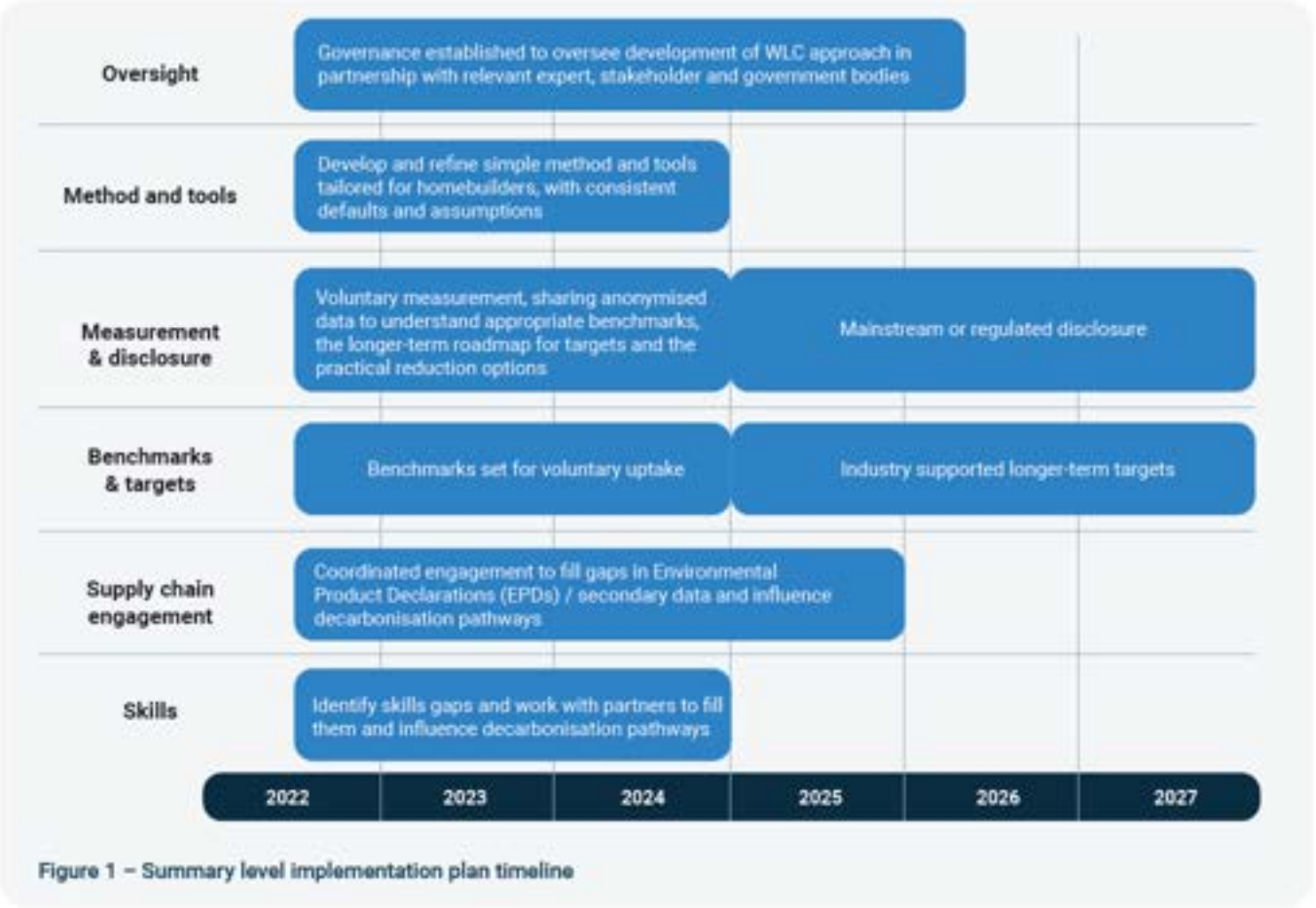


Figure 1 – Summary level implementation plan timeline

The timeline for these activities is summarised in Figure 1.

The programme of work will be governed by an oversight group joining the dots between the homebuilding and manufacturing industries, Government decision-makers, expert bodies like Royal Institution of Chartered Surveyors (RICS), and skills and training bodies.

Collectively, we have a common goal to reduce carbon emissions across the homebuilding sector and the built environment as rapidly as we can. By working collaboratively, we can make sure that we develop wholly practical methods and mechanisms, accessible to all, at the same time as building better homes and communities.

Background and context

Context to reducing the embodied and whole life carbon of new homes

Tackling climate change is arguably the defining challenge of our times. In response, the UK Government has committed in law to achieve Net Zero greenhouse gas emissions by 2050[1].

The homebuilding industry already has a clear pathway to reducing the operational carbon emissions of new homes through implementation of the 2021 uplift and the Future Homes Standard (FHS) in 2025, respectively reducing the carbon emissions by over 30% and 75%. Furthermore, the 2025 Standard is intended to be a net zero standard as the grid decarbonises.

Responding to the changing policy and regulatory landscape, reinforced by signals from investors and the environmental and cost-of-living concerns of their customers, most homebuilders are well underway with plans to reduce operational energy and carbon of their product.

However, as operational emissions continue to be reduced, there is an increasing need to focus on whole life carbon.

Some larger homebuilders and aspirational SMEs, especially those with carbon reporting commitments or science-based targets[2], are already starting to measure and even set targets for whole life carbon.

Some Local Authorities are already requiring WLC assessments to be carried out, and setting targets for new development.

However, WLC has not been a focus for the majority of developers, particularly the smaller and less well resourced companies. The challenge is how we build on the experience of those at the vanguard to lower the barrier to entry for developers that have not yet engaged with embodied carbon as a design issue, and make WLC measurement and disclosure mainstream.

In the UK Net Zero Strategy published in 2021, the Government set out its ambitions to help the construction sector improve reporting on embodied carbon, with a view to exploring a maximum level for new builds in the future.

Subsequently, the Environment Audit Committee (EAC) published a report[3] in May 2022 recommending that the Government introduce mandatory whole life carbon assessments and targets. They underline the urgency, given the UK's commitment at COP26 to achieve a 68% reduction in the UK's carbon emissions by 2030 – which includes embodied carbon of the construction sector. This is only seven years away.

As yet, there is no clear plan or detailed policy for how embodied or whole life carbon should be achieved. However, the Government's response to the EAC report states:

"Government intends to consult in 2023 on our approach and interventions to mainstream the measurement and reduction of embodied carbon in the built environment.

"We acknowledge the recommendation from the Committee that a requirement should be established through the building regulations. We will consider through the feedback received from the above consultation and parallel stakeholder engagement what levers, including building regulations, will be needed to tackle embodied carbon. In addition, research and analysis will be carried out to understand the full practical, technical and economic impacts of potential interventions. This will be particularly important for minimising impacts on SMEs and ensuring that interventions deliver for the climate but do not undermine other objectives to level up the country and deliver more, safer homes. Our planned consultation in 2023 will therefore consider the outcomes of this analysis and research. As part of this work, we will also consider what types and sizes of homes and buildings should be included."

To prepare for this, there is a need for standardisation of measurement of embodied and whole life carbon, shared data and learnings, and a collaborative approach to tackling this across the homebuilding industry.

Government intends to consult in 2023 on our approach and interventions to mainstream the measurement and reduction of embodied carbon in the built environment.

Industry commitment to develop an implementation plan through the Future Homes Hub

The homebuilding industry have committed through the Future Homes Delivery Plan to develop an industry led roadmap and plan for reducing the whole life carbon emissions of new homes – see Appendix A.

Developing this plan in more detail has been an early priority for collaboration through the Future Homes Hub.

The aims of this first phase of work have been to:

- Establish an initial baseline for whole life carbon in new homes based on existing assessments carried out.
- Evalute the potential to reduce embodied carbon based on comparative assessment of options for a typical house.
- Propose the framework of measurement suitable for new homes development and infrastructure, identifying the barriers to accurate measurement and also who needs to do what to overcome them.
- Develop a roadmap and implementation plan to support industry-wide reduction in whole life carbon.

[1]In Scotland the target is to reduce carbon emissions by 2045. Scotland and Wales have differing building regulations. However, no UK administrations have yet developed detailed policies for whole life carbon of residential developments, [2]whole life carbon is a component of scope 3 emissions for those companies who have set science-based targets, [3]See Appendix E for links to both the EAC report and the Government's response

Initial assessment of the baseline and reduction options

Baseline assessment

A baseline dataset was developed with input from the homebuilder members of the steering group. A total of 35 embodied and whole life carbon assessments, from 10 homebuilders, were gathered and collated, covering various dwelling and construction types, all completed over the last few years. The detailed project methodology is given in Appendix C with tables, charts and discussion in Appendix D.

Based on this phase 1 FHH project dataset, initial indicative upfront and whole life embodied carbon intensities are shown in Figure 2:

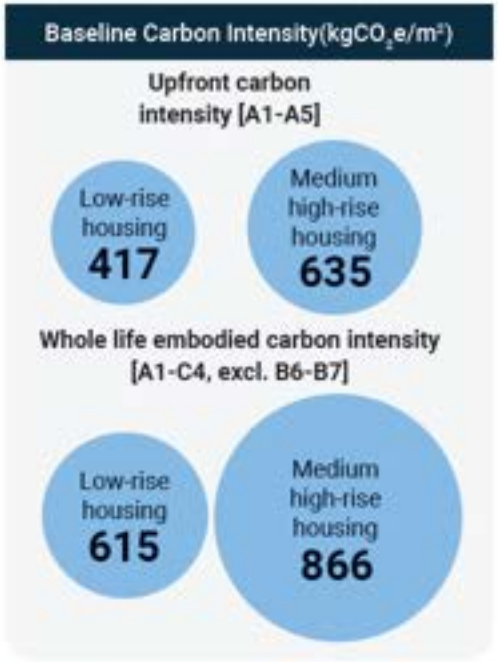


Figure 2 – Baseline upfront and whole life embodied carbon intensities from phase 1 dataset

Figure 3 shows the comparison between phase 1 FHH baseline carbon intensity and existing benchmarks. The error bars represent the range of assessments, and the number above the bar the sample size. Points to note from this analysis include:

- The FHH database is a better reference point for developers looking to set targets for low-rise housing than existing benchmarks (LETI/RIBA and GLA), which are more representative of medium and high-rise schemes.
- The project sample size was relatively small – a total of 35 assessments – and the vast majority are houses. The baseline should be updated as the size of the data set grows. It may also be possible in future to distinguish between baselines for different low-rise house archetypes or based on other characteristics.
- Analysis of the initial project data set showed little to no correlation between WLC and characteristics such as floor area, house-type or construction systems. This highlights the need for a larger dataset to investigate these relationships.
- In fact, there was significant unexplained variability between apparently similar buildings. This is thought to be a result of differing assumptions, generic defaults and EPDs that may be selected by the assessor – all acceptable within the scope of the RICS Professional Standard*. This highlights the need for consistency and guidance to those carrying out assessments in terms of secondary data used (i.e. anything except manufacturer EPDs for the actual products used).

*Refer to Appendix B

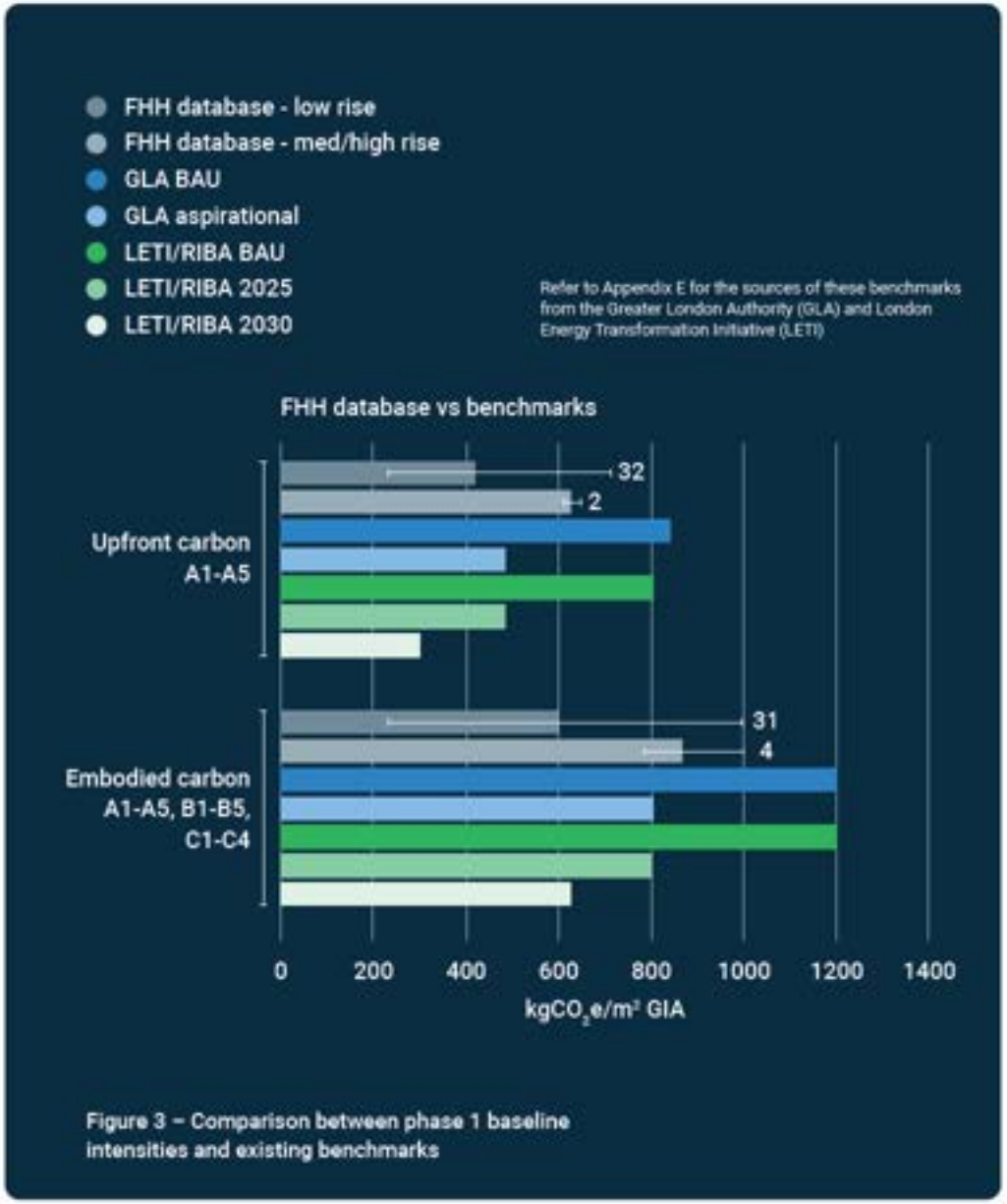


Figure 3 – Comparison between phase 1 baseline intensities and existing benchmarks

Carbon emissions reduction options

Building on three representative bills of quantities provided by working group members for different low-rise house types, additional whole life carbon modelling was carried out by Verco to understand the potential benefit of different design or specification decisions.

A number of fabric and services options were considered, including masonry vs. timber superstructure, cladding and roofing options, and gas boiler vs. air source heat pump.

It should be noted that:

- In this initial study, the scope of options was by no means exhaustive. The options presented are illustrative, rather than fully considered designs, and were based on individual to just three similar low-rise house types.
- We don't generally have enough or sufficiently robust data yet to make firm conclusions about the carbon intensity of different build options or recommendations on the best actions. See Appendix D for full discussion of the results.
- Further work will be needed during the next phase to identify a wider range of potential scenarios, such as:
  - additional archetypes for baseline models, including apartments and mixed-use development.
  - additional options to reduce embodied carbon – including substructure (reused steel piled foundations), superstructure (steel-frame), other pre-manufactured elements, and additional insulation to reach FHS-level fabric specification.
  - any unintended consequences of specific proposals that may affect buildability, such as movement joints when changing block type.
  - additional insulation to different levels of fabric performance, to better understand the trade-off between embodied and operational energy for different options.

Element	Baseline	Options Considered
Outer leaf	Clay facing brick & mortar	• Concrete facing brick & mortar • Lightweight cladding - fibre cement board
Inner leaf	Aerated concrete block & mortar	• Timber frame
Ground floor	Beam & block	• Beam & EPS infill
Upper floor	Timber	• Offsite floor cassette
Roof covering	Clay tiles	• Concrete tiles • Slate tiles • Fibre cement slates
Services	Gas boiler	• ASHP (R32) • ASHP (R32) + PV • ASHP (R32) + PV + Battery

Figure 4 – Fabric and services options considered in comparative assessment

> The phase 1 baseline is a better reference point for developers looking to set targets for low-rise housing than existing benchmarks

Option	Upfront intensity ($kgCO_2e/m^2$)	% Change from baseline
Baseline	435	
2a - timber frame	363	-16%
4a - offsite floor cassette	395	-9%
1b - fibre cement board	398	-9%
3a - beam & EPS infill floor	412	-5%
5a - concrete roof tiles	426	-2%
5b - slate roof tiles	428	-2%
5c - fibre cement slate tiles	428	-2%
1a - concrete bricks	432	-1%
6a - ASHP (with baseline spec)	443	2%
6b - ASHP + PV	453	4%
6c - ASHP + PV + Battery	464	7%

Figure 5 – Comparative assessment outcomes – upfront carbon intensity

In terms of upfront carbon, the greatest saving from the data analysed was achieved by moving from masonry to timber frame (-16%) with other options achieving <10% saving on the baseline.

In terms of whole life carbon (including operational carbon based on SAP assessment calculations), the greatest saving was achieved by moving from gas boiler to air source heat pump (-49%) with fabric options achieving up to -7% saving on the baseline.

Option	WLC Intensity ($kgCO_2e/m^2$)	% Change from baseline
Baseline	1351	
6a - ASHP (with baseline spec)	692	-49%
6b - ASHP + PV	713	-47%
6c - ASHP + PV + Battery	731	-46%
3a - beam & EPS infill flooring	1256	-7%
2a - timber frame	1283	-5%
4a - offsite floor cassette	1304	-3%
1a - concrete bricks	1325	-2%
1b - fibre cement board	1365	1%
5a - concrete roof tiles	1393	3%
5b - slate roof tiles	1396	3%
5c - fibre cement slate tiles	1396	3%

Figure 6 – Comparative assessment outcomes – whole life carbon intensity

Note: Biogenic materials (e.g. timber) and whole life carbon. The RICS methodology for whole life carbon does not currently account for the time value of locking away carbon in the timber structure for the life of the building, which could be in excess of the assumed 60 years.

Note: Assumed carbon abatement curves for grid electricity and materials. The whole life carbon benefit of using ASHP and electric heating sources comes partly from the projected decarbonisation of the grid in future years. In line with the RICS Professional Statement methodology, embodied carbon of replacement materials within the building lifetime was not assumed to abate over time, although UKGBC Whole Life Carbon Roadmap suggests that it will.

Conclusions from the initial assessment

Overall, data available from existing embodied and whole life carbon assessments is not sufficiently consistent nor robust to draw firm conclusions about current levels of emissions for different archetypes, what current benchmarks or future targets should be and what are the best options for reducing whole life carbon.

However, some initial observations can be made, for example that:

- It is valuable to consider whole life carbon rather than just embodied carbon or operational carbon.
- Whole life carbon emissions are likely to differ by archetype. For example, low rise housing already typically outperforms LETI and RIBA's benchmarks for 2025 and in some cases outperforms the 2030 benchmark.
- Inconsistency in current data appears to stem largely from variance in the assumptions being made for example in the defaults used for embodied carbon in products.
- While current data is not sufficiently robust to make a full set of conclusions about design choices, it does point to some conclusions such as that while heat pumps increase embodied carbon, overall, they substantially reduce whole life carbon.
- Some level of emissions reduction is possible from design and material choices. However, substantial reduction of embodied carbon will rely in addition on decarbonisation of construction products.
- There was clear consensus that rapid action is needed to create an easy-to-use tool for developers to gain a more accurate and consistent understanding of whole life carbon.

The observations above confirm some urgent actions for the industry, including to:

- Agree a consistent approach to measurement, including what assumptions to use, and continue to engage with decision-makers and expert bodies to promote alignment
- Engage as widely as possible with developers and design teams to feed into the evidence base and understand how WLC assessments can help them identify where carbon savings can be made in their live projects
- Work in a more coordinated way with the manufacturing sector to map and fill gaps in and update EPDs, and understand emissions reduction pathways.

2023-2025 Implementation plan

The implementation plan was put together through iterative dialogue with the steering group. Its purpose is to prepare the industry for scaling up measurement and reduction of whole life carbon including through regulation. The implementation plan needs all parts of the sector to work together.

There are four key elements:

1. **Measurement and disclosure** of upfront and whole life carbon assessments at both an individual home design level and whole development project site level. The measurement framework developed through this project is in appendix B.

2. Setting of **benchmarks** for voluntary uptake for upfront and whole life carbon, using data gathered from carbon assessments carried out by UK homebuilders and initially disclosed via the Hub.

3. The pathway to setting **industry supported targets** for voluntary uptake prior to potential introduction of regulation.

4. Coordinated **engagement with the supply chain** to ensure that EPDs and relevant default assumptions are increasingly available to support mainstream disclosure.

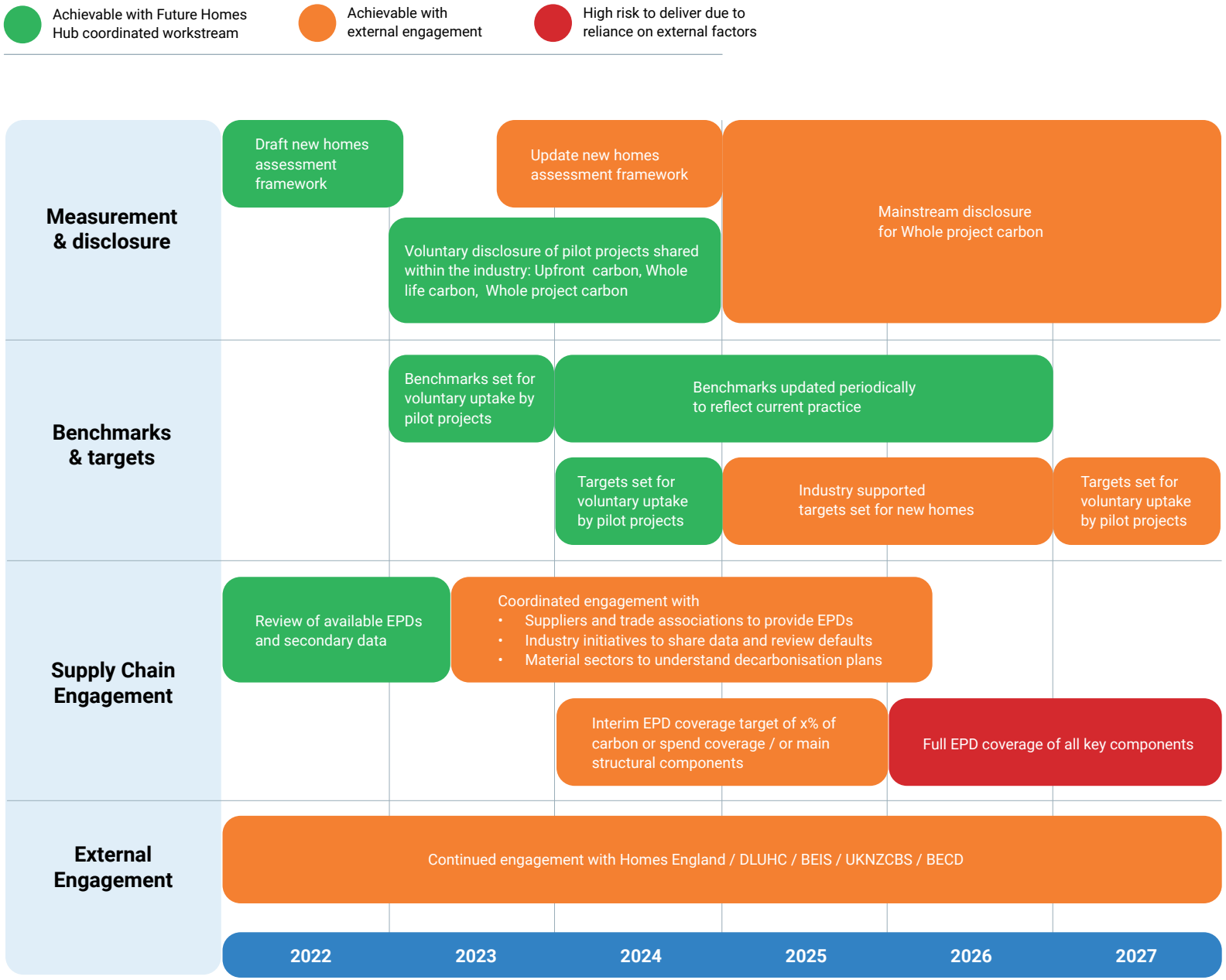
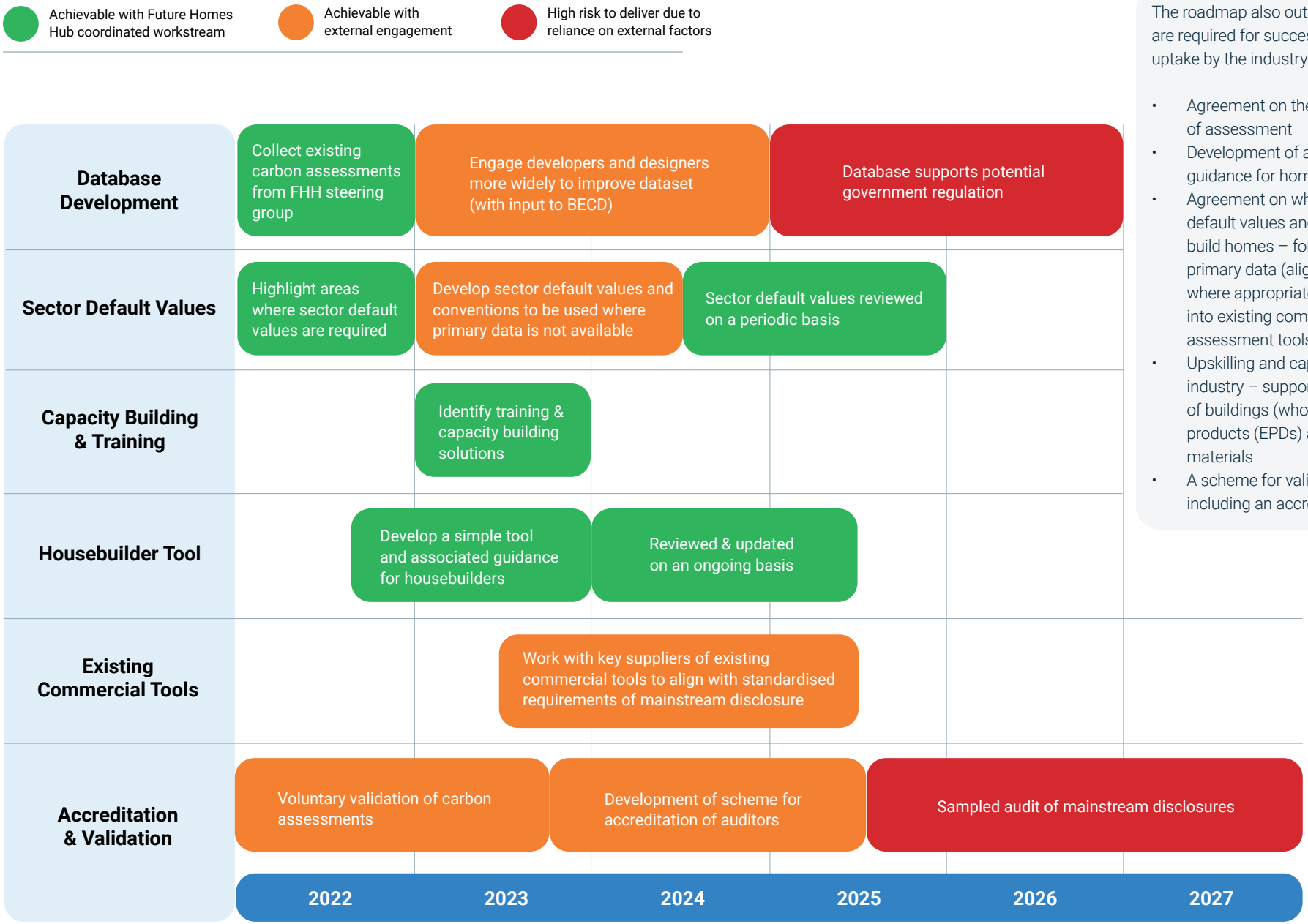


Figure 7 – Implementation plan timeline: engagement



The roadmap also outlines enabling activities that are required for successful implementation and uptake by the industry. These include:

- Agreement on the proposed framework of assessment
- Development of a simple tool and associated guidance for homebuilders
- Agreement on whole life carbon sector default values and assumptions for new build homes – for use in the absence of primary data (aligning with existing sources where appropriate), and integration of this into existing commercial whole life carbon assessment tools
- Upskilling and capacity building within the industry – supporting life cycle assessment of buildings (whole life carbon assessments), products (EPDs) and the use of low carbon materials
- A scheme for validation of assessments including an accreditation route for auditors.

Figure 8 – Enabling activities: data, skills and tools

Next steps/calls to action

Oversight

There are several essential enabling activities needed to prepare the industry for potential government regulation and to ensure that any targets set are proportionate, achievable, and viable but stretching enough to meet the urgent need for climate action.

The Hub will set up a group to oversee the implementation of the plan and enabling activities, alongside working groups of homebuilders to test the proposed assessment framework and roadmap. The Hub will also co-ordinate the collation of the carbon assessment data provided during voluntary measurement and disclosure.

Assessment framework

The proposed assessment framework for upfront and whole life carbon assessments at dwelling (buildings only) and project (including site-level infrastructure) level will be used for pilot phases.

It will be formally reviewed and updated by the WLC oversight group following the pilot phase, with input and feedback from users, to ensure it is effective and fit for purpose and aligns with other frameworks as appropriate.

The approach, which will continue to be developed in line with any changes to the RICS professional statement, should enable developers to measure WLC in a way that is consistent, quick, low cost and straightforward enough to drive significant uptake.

Outcome: The industry has a consistent methodology and conventions for new build homes.

Sector defaults & assumptions – secondary data

A set of new homes sector default values will be developed in 2023 using the data collected from carbon assessments shared by UK homebuilders with the Hub. It should align with existing defaults, where appropriate, and is intended to be used where primary data is not available at either individual product or life stage level – for example, for embodied impacts (A1-A3), transport (A4) and construction activities (A5) and of standard material build ups.

As the coverage of primary data increases in the inputs to carbon assessments, the outputs will become more representative of industry practices and will inform more accurate default values.

These defaults can be built into calculation tools, reducing the burden of carbon assessments on SMEs and allowing simplified calculations at early project stages, or where detailed data collection has not taken place.

Outcome: A set of defaults and assumptions specific to the new homes sector that can be used by consultants within WLC assessments generally.

Tools

To make carbon assessments as accessible as possible to the widest range of homebuilders, there is a need for a simple tool – or specification to embed into existing tools – and associated guidance, allowing the inputs to be as high-level or as detailed as required, but ensuring the outputs are comparable across the board.

The workstream to develop the tool will commence in early 2023. The Hub will engage with homebuilders and manufacturers, as well as existing initiatives, tool providers and EPD providers to develop the specification for this tool and any supporting data sets that will be required.

Outcome: The barrier to entry is lowered for developers that have not yet engaged with embodied carbon as a design issue.

Measurement and disclosure – pilot programme

During 2023, the Hub will establish a more formal phase of voluntary disclosure for upfront and whole life carbon at dwelling and project level. The Hub will invite a wider group of developers to participate with the objective of preparing the wider industry for mainstream measurement and informing the design of the future framework for whole life carbon including through regulation.

A preliminary step will be to specify the precise objectives for the pilot phase and, with greater clarity of the measurement method and tool, in dialogue with Government and homebuilders the appropriate scope and parameters for measurement and disclosure.

The assessment outputs will be disclosed and shared within the Hub for benchmarking and analysis initially. Ultimately, the data can support other industry initiatives, such as the Net Zero Carbon Buildings Standard (NZCBS) and Built Environment Carbon Database (BECD) with prior consent of the participating homebuilders.

Outcome:
Larger and willing smaller developers:

- participate to share the experience that they have with others in the sector.
- collaborate in engaging with their customers and supply chain.

As many smaller developers as possible have started on the journey; completing a whole life carbon assessment on at least one house type or development.

All developers broadly view embodied carbon as a non-compete issue, which benefits from collaboration.

Data & Benchmarks

The Hub will continue to review collected whole life carbon assessments with the aim of improving the accuracy and relevance of benchmarks in due course.
By analysing the data, we will seek to understand:

- underlying reasons for variance between assessments and how we can improve consistency of measurement
- the relationships between different construction types, dwelling archetypes and other characteristics with their embodied and whole life carbon
- where statistically significant variation between dwelling archetypes indicates they should be considered separately with respect to benchmarks and targets.

Outcome: A set of building and infrastructure benchmarks for upfront and whole life carbon that accurately reflect the new homes sector, so that developers can set realistic yet stretching targets for their developments.

Engagement with supply chain EPDs – Primary data

In the next phase of the project, the Hub will lead coordinated engagement with the Construction Products Association, BEIS and the manufacturing sector. It's likely that short-, medium- and long-term objectives can be defined, with the ultimate aim of having a large, consistently measured library of manufacturer EPDs freely available to carry out whole life carbon assessments, and

low-impact products and materials being valued by developers.

Initially, the Hub will look towards understanding the current availability of primary data for WLC assessments of new homes; potentially setting a target EPD coverage for materials (for example, by x% of carbon or spend coverage) per assessment. Ultimately, the goal would be to have full EPD coverage (at detailed design / as-built stages) for the main building components.

Engagement with the manufacturing sector and trade associations will also be sought to understand the projected decarbonisation plans of key material suppliers, building on the UKGBC Whole Life Carbon Roadmap projections.

Outcome: Suppliers routinely produce EPDs for most of their product lines. They have the data available from their own drive to improve sustainability reporting and it's quicker, easier, and therefore less expensive for new EPDs to be produced.

Outcome: EPD data is available and easily comparable across products and different systems. Ideally, that means getting the data off PDFs and into a database that is free to access. The Hub could support the building of an EPD library, which could then feed into calculation tools.

Engagement with skills providers

Work will be undertaken to identify new skills required to carry out the carbon assessments to the agreed methodology, and in 2023 training and capacity building solutions will be identified and developed for roll-out to the industry, facilitated and coordinated by the whole life carbon oversight group.

This is likely to require new skills across the value chain, from the development and life cycle analysis of manufactured products, through low-carbon engineering and design to measurement of building whole life carbon assessments.

Outcome: An accreditation / competent person's scheme is developed for whole life carbon assessors, EPD assessors and other relevant professionals.

Outcome: Major (private and institutional) training providers are engaged. The projected demand for life cycle analysis drives the development of vocational courses.

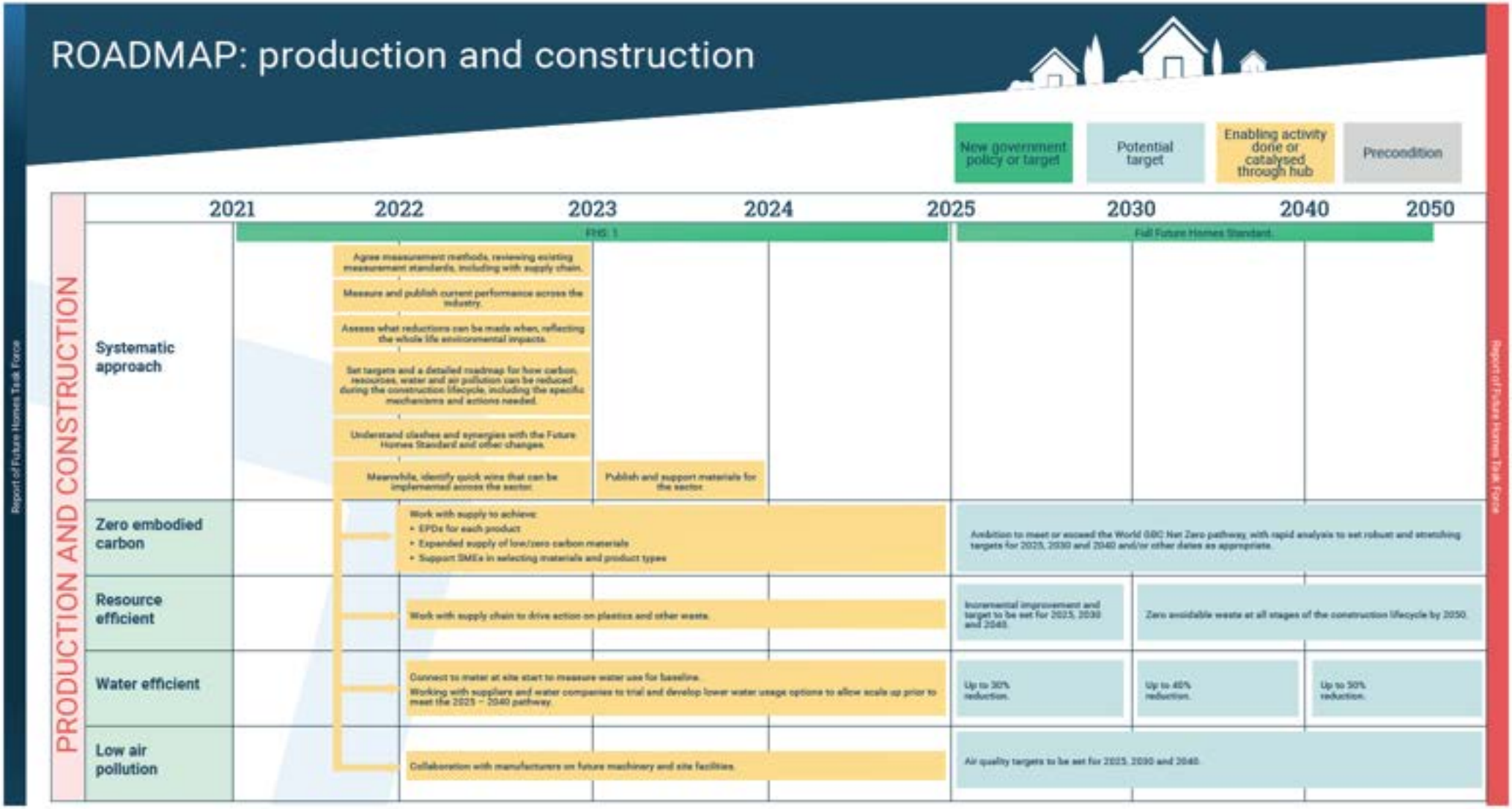
Engagement with Government

The Hub will work with government to identify what information may be needed from voluntary measurement to help inform the anticipated consultation on potential future policy.

Any embodied or whole life carbon regulation would ideally be introduced at the same time as other changes to the regulations, to ease the burden on developers by reducing the frequency of design changes driven by new regulation.

Outcome: The industry is prepared to comply with any future regulations around embodied and whole life carbon, but also in the intervening period has developed a more accurate and representative evidence base of whole life carbon assessments that can inform the government consultation in 2023.

Appendix A – The roadmap relevant to embodied and whole life carbon in the Future Homes Delivery Plan



Page 11 of the Delivery Plan Summary
Available at: www.futurehomes.org.uk/roadmap

Appendix B – Proposed assessment framework for new build homes

Framework overview

Informed by the call for evidence and feedback from the Hub steering group members, a proposed framework has been developed to facilitate collection of a consistent data set for new build homes. Three levels of reporting have been identified that reflect different assessment scopes. Developers can choose to disclose at a building-level ether 'upfront carbon' or 'whole life carbon', or at project-level, including site-level infrastructure and external works.

The intention is that a detailed set of conventions can be defined (in a similar way to SAP) that will reduce the observed variability between similar assessments and provide the sector a more consistent platform from which to understand benchmarks and set targets.

Dialogue will be maintained with the UK Net Zero Carbon Buildings Standard (NZCBS), BECD and the other embodied and whole life carbon initiatives currently in progress in order to ensure alignment as we look to finalise a set of conventions for assessing new build homes.

The assessment framework outlined here aligns with the RICS Professional Statement*, building on them to meet the specific needs of the UK homebuilding industry.

Framework detail

The FHH assessment framework for embodied carbon assessments is summarised in Figure B2 for dwelling level upfront and whole life carbon assessments, and for project level whole life carbon assessments. The dwelling level assessments are a subset of the project level calculations. The breakdown by building element and life cycle stage should be reported in each case.

Building elements

The RICS professional statement only requires substructure and superstructure to be included as a minimum. The FHH assessment framework builds on this to also include internal finishes, fixed FF&E, and services as these were commonly measured and accounted for in the baseline dataset gathered by the steering group members.

Figure B1 – Proposed assessment framework; high level

*Note that the RICS Professional Statement, often referred to in the UK construction industry sets out specific mandatory principles and supporting guidance for the interpretation and implementation of BS EN 15978:2011 methodology.

		Dwelling level - upfront	Dwelling level – whole life	Project level – whole life
Life-cycle stage	Sequestered carbon & carbonation	-	✓	✓
	[A1 – A3]	✓	✓	✓
	[A4]	✓	✓	✓
	[A5]	✓	✓	✓
	[B1 – B5]	-	✓	✓
	[B6 – B7]	-	✓	✓
	[C1 – C4]	-	✓	✓
	[D]	-	Optional	Optional
Building element	Demolition	-	-	✓
	0.0 Facilitating works	-	-	✓
	1.0 Substructure	✓	✓	✓
	2.0 Superstructure	✓	✓	✓
	3.0 Internal finishes	✓	✓	✓
	4.0 Fixed FF&E	✓ (Building related)	✓ (Building related)	✓ (Building & non-building related)
	5.0 Services	✓ (Building related)	✓ (Building related)	✓ (Building & non-building related)
	6.0 Prefabricated buildings and building units	-	-	✓
	7.0 Works to existing buildings	-	-	✓
	8.0 External works	-	-	✓

Figure B2 – Proposed assessment framework; detail by life cycle stage and building element

Life-cycle stages[1]

The RICS professional statement also only requires [A1-A5], [B4], and [B6] to be included as a minimum. However, to fully understand the whole life carbon impact of design decisions, the FHH assessment framework includes all stages [A1-C4], including carbon sequestration for the whole life carbon calculation at dwelling and site level. Module D can be reported as optional and is commonly calculated in commercial whole life carbon software tools as standard.

Reference study period

In line with the RICS professional statement, the reference study period should be 60 years.

Carbon data sources

In line with the RICS professional statement guidance, the hierarchy for carbon data sources for construction materials to be used for whole life carbon assessments is:

- Supplier & product specific EPD (no older than 5 years)
- EPD for an equivalent or similar product (no older than 5 years)
- Carbon data for generic material (e.g. ICE database)

Sequestered carbon and carbonation

Sequestered carbon and carbonation are to be included in the whole life carbon assessments at dwelling and project level, in line with the RICS methodology.

Sequestered carbon is excluded at 'Dwelling level-upfront' scope, but can be reported separately from stages [A1-A5] for information.

Carbonation should be accounted for in stages [B1] and [C3-C4] and reported separately in addition, provided that the conditions in the RICS guidance are met..

"Data from EPDs or equivalent sources can be used to account for the impact of carbonation in stages [B1] and [C3-C4], provided that the conditions in the scenario selected in the data source coincide with the anticipated project-specific ones. In case the assumptions are either not sufficiently transparent or diverge from what is expected to apply to the specific project being assessed, carbonation figures should either not be taken into account or adjusted accordingly."

Default values

The assessment framework allows default values to be used in the absence of actual data, but also allows improvements and meaningful reductions in carbon to be accurately reflected in embodied carbon assessments where actual data is available.

The default dataset for the FHH assessment framework initially relies on the RICS professional statement guidance (2017). This document is due to be updated in 2023 and the Hub will input to this process. As the Hub's database of carbon assessments grows and increases in accuracy, the default values will be transitioned to values based on this dataset to represent the current state of the UK homebuilding industry.

The RICS professional statement outlines the default assumptions that should be made in the absence of primary information.

- [A1-A3]: Default specifications to be used for the main building materials including concrete, steel, blockwork, timber, aluminium, plasterboard, and insulation – section 3.5.1, pg 17
- [A4]: Default transport distances for locally, nationally, European, and globally sourced materials – section 3.5.2, pg 19
- [A5]: Average emissions for construction site activity – section 3.5.2, pg 20
- [A5]: Average site waste rates by material - WRAP net waste tool reference
- [C1-C4]: End of life scenarios – section 3.5.4 pg 25,26
- Product expected lifespans: section 3.5.3, pg 23

Areas for further study and consultation

There are some key areas that require further work:

- The Hub will engage with the development of the new RICS professional statement to explore:
  - The treatment of solar PV and how it should be considered in the scope of upfront and whole life carbon disclosures and targets.
  - The predicted decarbonisation of materials and how it should be accounted for in assessments and targets
  - The treatment of sequestered carbon at end-of-life:
    - including uncertainty of difficult to predict events a long way into the future and the appropriate assumptions
    - the ambiguity caused by quoting it as a separate figure
  - Whether the 60-year reference period for low-rise dwellings, is reflective of reality.
- The Hub will work with the Construction Products Association and the issuers of EPD certificates to:
  - look at how EPDs can be quicker, cheaper, and easier for manufacturers, giving specifiers more choice with more up-to-date data
  - to encourage more EPDs.

[1]Refer to Appendix E for definition of life-cycle stages.

Appendix C – Detailed project methodology

Call for evidence

As a starting point, the Future Homes Hub issued a call for evidence on embodied and whole life carbon asking about the scope of embodied carbon assessments, existing and required skills, and the challenges faced by respondents in data collection and calculation activities.

There were 17 respondents, and the responses can be summarised under three key themes;

1. Scope of embodied carbon assessments for new build homes

Most respondents favoured a whole life carbon approach including operational energy, and while the RICS guidance for whole life carbon should be adopted, more clarity is required around some areas, especially end of life treatment of materials and the treatment of carbon sequestration.

2. Existing and required skills within the industry

Knowledge and skills are still developing within the industry, and a simplified approach and calculation tool tailored for UK homebuilders would be valuable, especially for smaller projects and organisations.

3. Data and tools to carry out embodied carbon assessments

One of the main challenges recognised in the responses is in collecting material quantities data and EPDs. There is a need for a homebuilder specific standard database of default values for use where primary data is unavailable. Suppliers will need support to provide EPDs to fill knowledge gaps.

Steering & sub-groups

A steering group was set up consisting of developers, suppliers, industry bodies, government bodies and technical experts. Two sub-groups of developers were formed; the first to focus on the technical data analysis for baseline and comparative upfront and whole life carbon assessments, and the second to focus on the assessment framework and roadmap development.

The focus for sub-group 1 was to:

- Collect data relating to the scope from within their own business and share within the realms of the team.
- Input on the scope of design and material options to be compared.
- Input on the proposed calculation methodology and assumptions.

The focus for sub-group 2 was to:

- Highlight knowledge gaps and areas for further investigation.
- Input on the enabling activities and the pathway to industry preparedness for possible regulation.
- Input on the timing of the implementation plan.

Methodology for baseline assessment

Existing embodied and whole life carbon assessments were gathered from the homebuilder members of the steering group and collated to develop an initial baseline for upfront and whole life carbon intensities. The dataset contains various configurations of low-rise, 2-3 storey, 2-5 bed, mid-terraced, semi-detached, and detached houses of timber, masonry and steel frame construction, and a smaller sample set of mid/high-rise residential apartment schemes; shown in Figures C1 and C2.

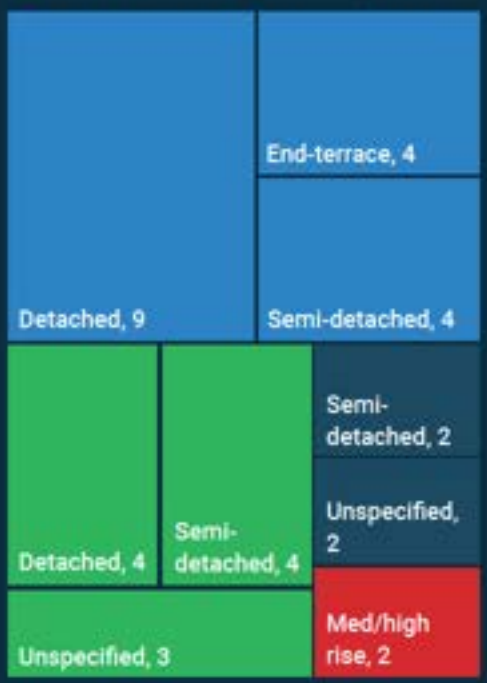


Figure C1 – Upfront carbon dataset: Sample size by type

Figure C2 – Whole life carbon dataset: Sample size by type

Notes:

- All assessments included in the baseline dataset were carried out on homes built to 2013 building regulations.
- WLC assessments were all carried out at design stage, though generally it wasn't stated which RIBA stage. They mostly represent developers' standard house types, rather than specific buildings. As such, there were no as-built assessments available to be included.
- A portion of the timber frame assessments analysed did not specify whether construction was open- or closed-panel, therefore all timber frame constructions are grouped together.
- Some reports did not detail the configuration of the home, so they are listed as 'unspecified'.
- Many of the assessments did not report on operational carbon [B6-B7] so – in common with existing benchmarks – this has not been included in this baseline (see Figure 1). However, it is accounted for in the comparative assessment detailed in the following section.

Methodology for comparative assessment

An assessment was undertaken of the potential whole life carbon impact of design decisions to reduce carbon and to support upcoming regulation changes to Part L and the Future Homes Standard (FHS), relying on currently available technology and data.

This comparative assessment was based on three low-rise bills of quantities provided by steering group members, comparing the options in Figure C4 to the baseline specification in Figure C3.

The comparative options were discussed and agreed with Sub-group 1 as being representative of current available options, but this list is not exhaustive. The assessment was intended to show the order of magnitude impact of each individual option when compared to the baseline. Combinations of options were not assessed. The assessment was carried out using the One Click LCA software.

The three house-type configurations analysed were:

- 4-bed two-storey detached
- 3-bed two-storey semi-detached / end-terrace
- 3-bed mid-terrace

	Baseline	Option 1	Option 2	Option 3
Outer leaf	Clay facing brick & mortar	Concrete facing brick & mortar	Lightweight cladding – fibre cement board	
Inner leaf	Aerated concrete block & mortar	Timber frame	Light guage steel frame *(ultimately this was not assessed against the baseline as comparable bills of quantities were unavailable)*	
Ground floor	Beam & block	Beam & EPS infill		
Upper floor	Timber	Offsite floor cassette		
Roof covering	Clay tiles	Concrete tiles	Slate tiles	Fibre cement slates
Services	Gas boiler	ASHP (R32)	ASHP (R32) + PV	ASHP (R32) + PV + Battery

Figure C4 – Comparative options

Element	Baseline
Substructure	Concrete
Ground floor	Beam & block
Upper floor & roof structure	Timber
Roof covering	Clay tiles
Outer leaf	Clay facing brick & mortar
Inner leaf	Aerated concrete block & mortar
Windows	uPVC double glazing
Heating system	Gas boiler

Figure C3 - Baseline specifications

Scope

The assessment covered substructure, superstructure, internal finishes, fixed furnishings, fittings, and equipment, and MEP and services. External and site works were not included within the scope of the dwelling-level assessment.

The life stages included in the assessment were [A1-A5], [B1-B5], [B6] and [C1-C4], a cradle-to-grave assessment, but unregulated energy consumption was not included in the scope, as there is no operational control for the homebuilders, and it will decarbonise in line with the UK electricity grid. Module D was also calculated but not reported in the whole life carbon totals. The Reference Study Period was 60 years.

FAQ: Why has a 60-year calculation period been chosen?

The 60-year life is set in the RICS professional statement and follows on from the assumption used in whole life costing calculations. There was consensus that the 60-year period does not reflect actual lifespans of low-rise homes but that it was important that calculations should be consistent with the RICS professional statement. It was agreed that the Hub should explore with RICS the scope to make the professional statement more reflective of reality.

Assumptions

Default values were used for:

- Upstream transport & distribution (distance, mode of transport, avg. loading factors);
- Building component expected lifespans (where EPD data was unavailable);
- End of life treatment of materials; and
- Waste rates onsite and disposal routes per material type for onsite waste and end-of-life.

It was assumed that any materials and building elements with less than a 60-year projected lifespan would be replaced like-for-like. No decarbonisation of the supply chain and replacement materials was assumed so the results are conservative. This is an area of further work to agree a standard approach to the decarbonisation of materials and will likely refer to the expected update to the RICS professional statement and reference the UKGBC Whole Life Carbon Roadmap.

The RICS guidance recommends using the FES Average future electricity, UK (2022-2082) - Steady Progression 2050 scenario to calculate the projected emissions reductions from electricity consumption within the reference study period. However, on consultation with the steering group and sub-groups, the HMT Green Book projections were used.

Carbon data

The hierarchy for choosing the appropriate material and associated embodied carbon factor followed the RICS guidance, as described in Appendix B.

Materials & bills of quantities

The level of detailed material specification in the input dataset was variable, ranging from specific products and suppliers to generic material grouping (e.g. 'Redland Rosemary traditional clay tile' versus 'roof tile'). Where the exact product was unknown, the RICS default material specification was chosen at the input stage for the comparative assessment. In the baseline dataset of assessments gathered by the Hub, it is difficult to gain certainty around the proportion of the assessment that is reliant on product specific EPDs versus industry average carbon factors.

Appendix D –Tables, Charts and Discussion

Baseline assessment

The average upfront and embodied carbon intensities for the sampled dataset of low and medium-high rise housing provided by the steering group members is given in Figure D1. The sample sizes indicate how many assessments in the database were compared, and only assessments with comparable scopes were included. All carbon figures are normalised by m² of floor area to allow comparability.

The sample size for medium/high rise housing is small, so the following baseline analysis only relates to low rise housing.

There is little to no correlation found between upfront and embodied carbon intensities and characteristics such as floor area, house-type configuration, and construction systems in the phase 1 dataset, shown in Figures D2, D3 and D4. This is a relatively small dataset and again this highlights the need for continued data collection to assess any statistically significant correlation between building characteristics and upfront and embodied carbon.

Many of the reports assessed as part of the baseline did not report operational energy and water emissions [B6-B7] so whole life carbon is not shown on these charts. However, to fully assess the whole life carbon impacts of design decisions, [B6-B7] will need to form part of the assessment and disclosure framework within the implementation plan.

	Low-rise housing	Medium / high-rise housing
Upfront carbon intensity [A1-A5] $kgCO_2e/m^2$	417	635
Sample size	32	2
Embodied carbon intensity [A1-C4, excl. B6-B7] $kgCO_2e/m^2$	615	866
Sample size	27	4

Figure D1 - Average carbon intensities for housing in the Hub database

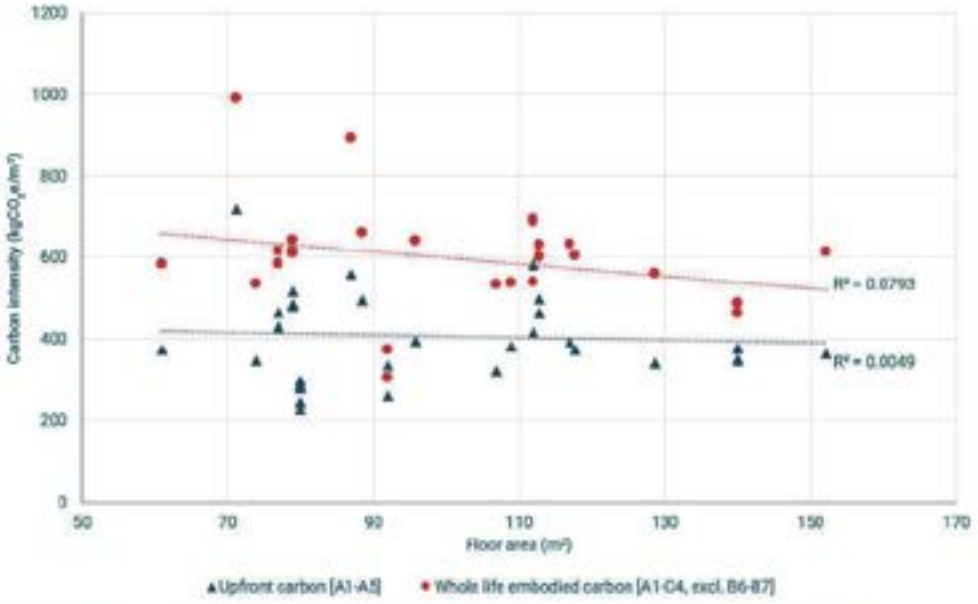


Figure D2 – Upfront & whole life embodied carbon intensity within the phase 1 dataset

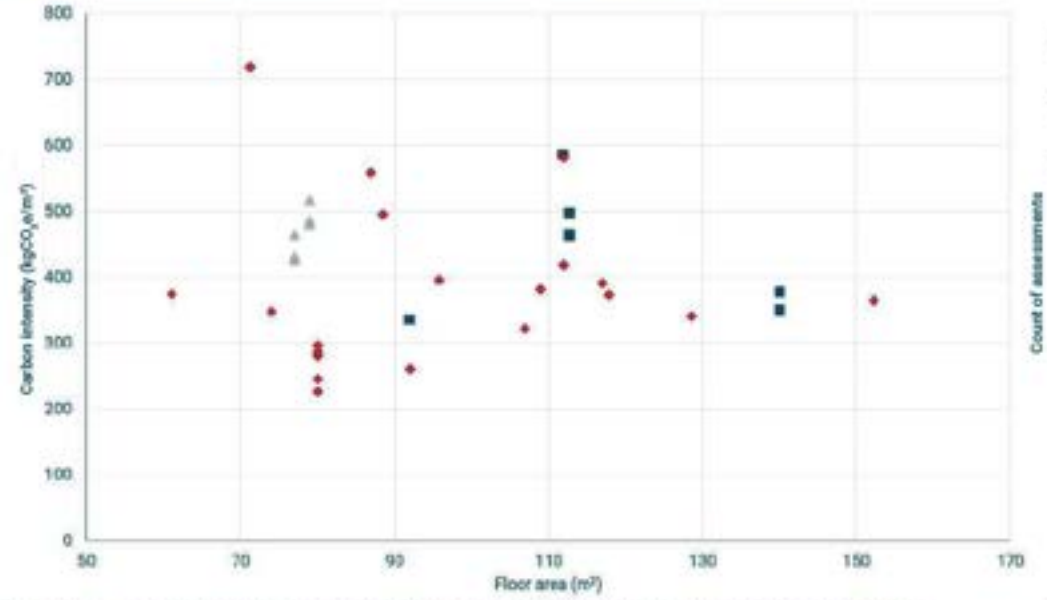


Figure D3 – Upfront carbon intensity by house-type configuration within the phase 1 dataset

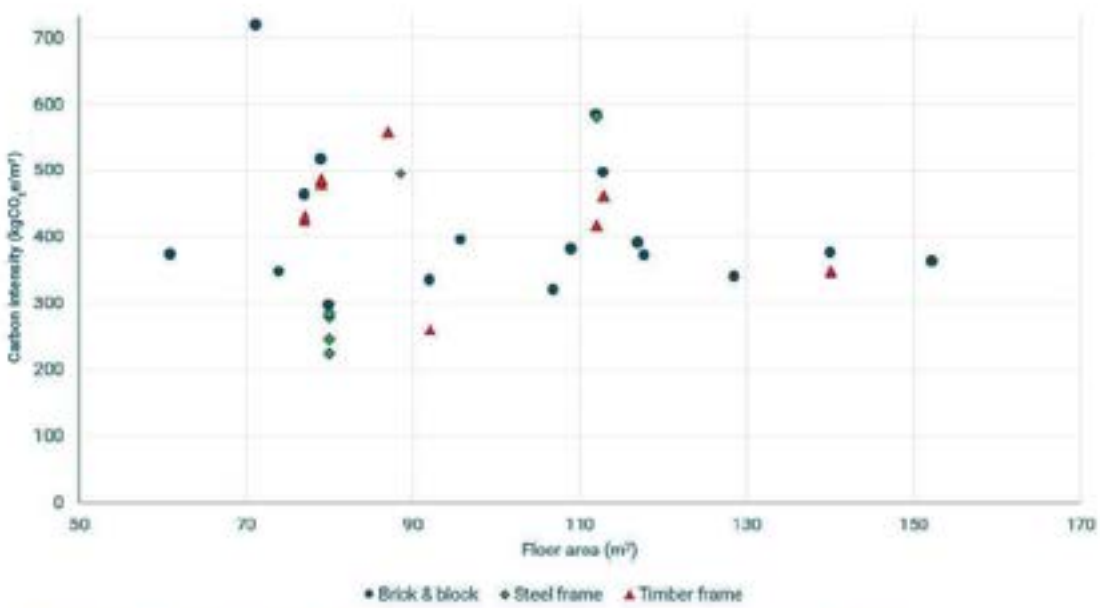


Figure D4 – Upfront carbon intensity by construction system within the phase 1 dataset

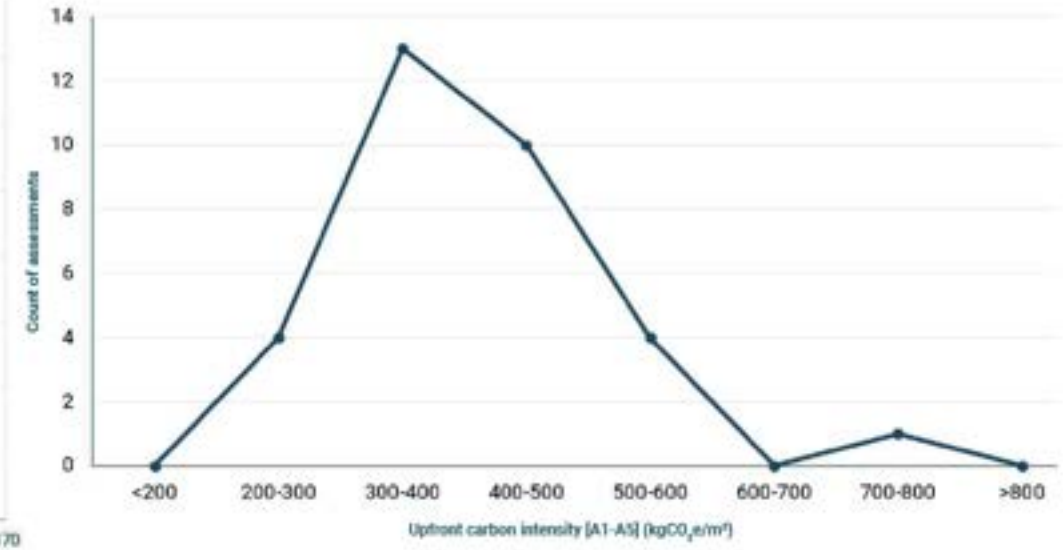


Figure D5 – Distribution of upfront carbon assessment outcomes within the phase 1 dataset

	2020	2025	2030
LETI [A1-A5], [B1-B5], [C1-C4]	800 $kgCO_2e/m^2$	< 500 $kgCO_2e/m^2$	< 300 $kgCO_2e/m^2$
GLA [A1-A5] excl. sequestration	< 850 $kgCO_2e/m^2$		<500 $kgCO_2e/m^2$
GLA [B1-B5], [C1-C4]	< 350 $kgCO_2e/m^2$		<300 $kgCO_2e/m^2$
RIBA [A1-A5], [B1-B5], [C1-C4] incl. sequestration	1200 $kgCO_2e/m^2$	<800 $kgCO_2e/m^2$	<625 $kgCO_2e/m^2$

Figure D6 – Existing residential benchmarks

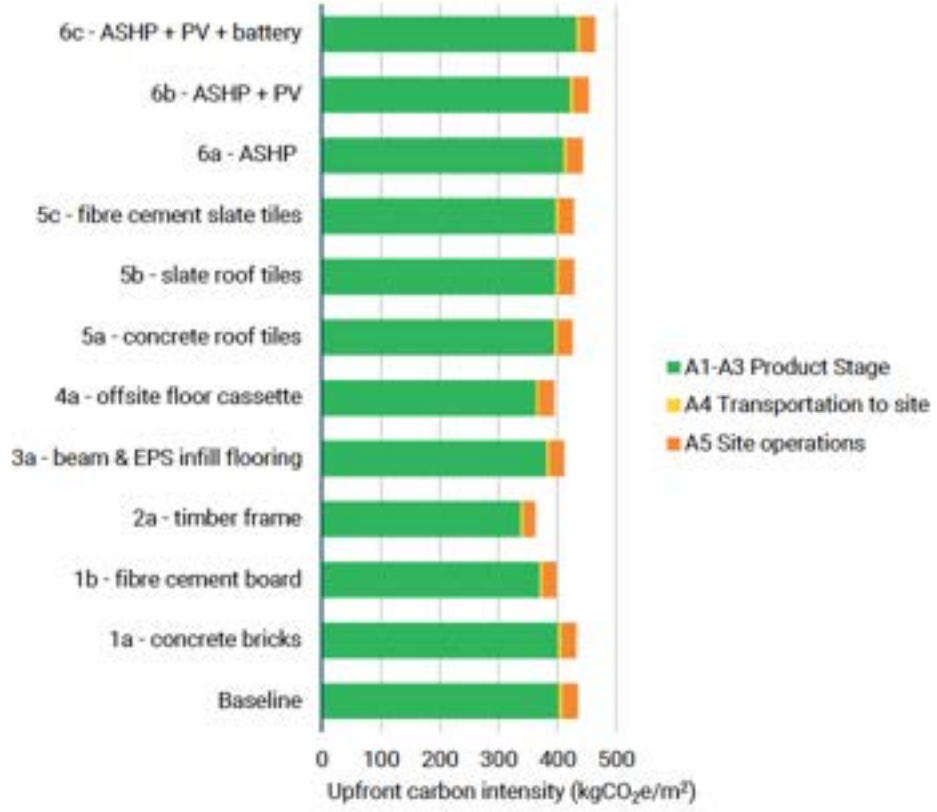


Figure D7 – Upfront carbon impacts of options on 4-bed detached home

Option	Upfront Intensity ($kgCO_2e/m^2$)	% Change from baseline
Baseline	435	
1a – concrete bricks	432	-1%
1b – fibre cement board	398	-9%
2a - timber frame	363	-16%
3a - beam & EPS infill floor	412	-5%
4a - offsite floor cassette	395	-9%
5a - concrete roof tiles	426	-2%
5b - slate roof tiles	428	-2%
5c - fibre cement slate tiles	428	-2%
6a – ASHP (with baseline spec)	443	2%
6b - ASHP + PV	453	4%
6c - ASHP + PV + Battery	464	7%

Figure D8 – Upfront carbon impacts & % change

The distribution curve of the upfront embodied carbon of the low-rise homes within the database is shown in Figure D5. It follows a normal distribution, with one outlier assessment of >600$kgCO_2e/m^2$. This outlier had a concrete upper floor structure which was the only example of this configuration in the dataset.

Comparison with existing benchmarks

LETI, RIBA, and the GLA have published benchmarks and targets for 2020, 2025 and 2030 for upfront and embodied carbon, outlined in Figure D6. There are a couple of important points to note about these benchmarks and targets; they exclude operational energy and water emissions [B6-B7] and the figures quoted are consistent with what would be expected for medium to high-rise residential schemes.

See Figure 2 (page 5) for the comparison of the FHH phase 1 dataset for both low-rise and medium/high-rise housing with the LETI, RIBA, and GLA benchmarks and targets for upfront and embodied carbon intensity.

On average, low-rise housing already performs better than the GLA, LETI, and RIBA business as usual benchmarks, the GLA aspirational targets, the LETI & RIBA 2025 targets, and the LETI & RIBA 2030 embodied carbon target. The only target not already being achieved on average within the low-rise dataset is the LETI/RIBA 2030 target. The sample size of medium-high rise residential apartments was much smaller and performed well against the business-as-usual benchmarks. This finding supports the need for an additional set of benchmarks and targets for low-rise housing. Medium and high-rise residential schemes should continue to follow LETI, RIBA, and GLA benchmarks and targets.

Comparative assessment

Upfront carbon [A1-A5]

The upfront carbon impacts of the different options are shown in Figures D7 and D8. The largest savings in upfront carbon are achieved by replacing the internal leaf of the external wall with a timber frame, the offsite manufactured first floor cassette, and the fibre cement board replacement of the external leaf of the external wall. As additional insulation and PV is added to the building the upfront carbon increases.

Whole life carbon [A1-A5], [B1-B7], [C1-C4]

The whole life carbon impacts of the options for the 4-bed detached home are shown in Figures D9 and D10. The most material impact on the whole life carbon is switching the gas boiler for an ASHP and removing the reliance on natural gas consumption for the occupant over the calculation period. It is important to note here that this analysis relied on a small sample of SAP assessments provided by the steering group members and was not calculated for each comparative option.

The benefit of adding extra PV and batteries is not fully recognised here as it will reduce the occupant reliance on purchased grid electricity. As the grid decarbonises, the carbon impact will be negligible, but the occupant will have greatly reduced energy bills.

Module D is optional for reporting following the RICS guidance, but many commercially available LCA software packages calculate it as standard. It is shown in Figure D9 but is not included in the totals in Figure D10.

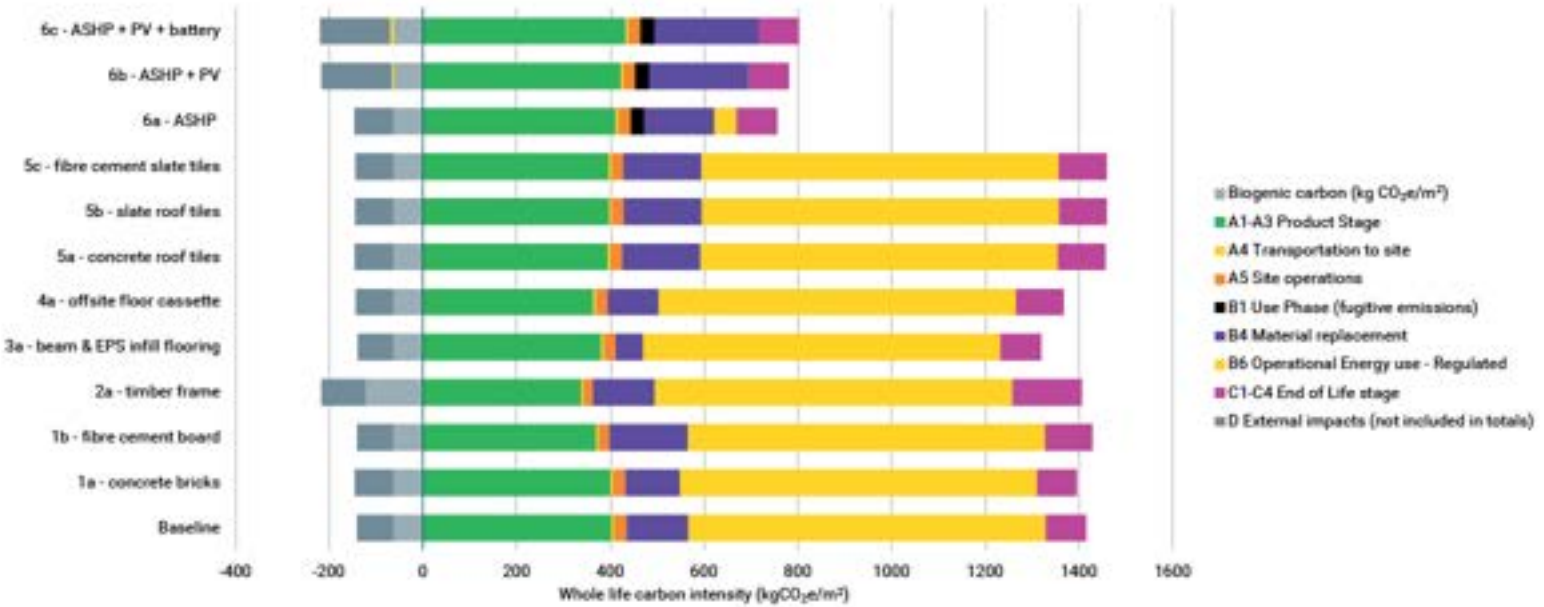


Figure D9 - Whole life carbon impacts of options on 4-bed detached home

Option	WLC Intensity ($kgCO_2e/m^2$)	% Change from baseline
Baseline	1351	
1a - concrete bricks	1325	-2%
1b - fibre cement board	1365	1%
2a - timber frame	1283	-5%
3a - beam & EPS infill flooring	1256	-7%
4a - offsite floor cassette	1304	-3%
5a - concrete roof tiles	1393	3%
5b - slate roof tiles	1396	3%
5c - fibre cement slate tiles	1396	3%
6a - ASHP (with baseline spec)	692	-49%
6b - ASHP + PV	713	-47%
6c - ASHP + PV + Battery	731	-46%

Figure D10 - Whole life carbon impacts & % change

Appendix E – Additional resources

Guidance and publications

RICS Whole life carbon assessment for the built environment
www.rics.org/uk/upholding-professional-standards/sector-standards/building-surveying/whole-life-carbon-assessment-for-the-built-environment/

IStructE - How to calculate embodied carbon
www.istructe.org/resources/guidance/how-to-calculate-embodied-carbon/

GLA Whole Life-Cycle Carbon Assessments guidance
www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance/whole-life-cycle-carbon-assessments-guidance

LETI Climate Emergency Design Guide
www.leti.uk/cedg

LETI Embodied Carbon Primer
www.leti.uk/ecp

UKGBC Net Zero Whole Life Carbon Roadmap for the Built Environment
www.ukgbc.org/ukgbc-work/net-zero-whole-life-roadmap-for-the-built-environment/

CIBSE TM65 Embodied carbon in building services
www.cibse.org/knowledge-research/knowledge-portal/embodied-carbon-in-building-services-a-calculation-methodology-tm65

ICE Embodied Carbon Footprint Database
www.circularecology.com/embodied-carbon-footprint-database.html

UK Net Zero Strategy
www.gov.uk/government/publications/net-zero-strategy

Part-Z Proposal
www.part-z.uk/proposal

BS EN 15978:2011
www.thenbs.com/PublicationIndex/Documents/Details?DocId=299697

Environmental Audit Committee: Building to net zero: costing carbon in construction
www.committees.parliament.uk/publications/22427/documents/165446/default/

Government response to the Environmental Audit Committee report
www.committees.parliament.uk/publications/30124/documents/174271/default/

ASBP Briefing Paper: EPD: An introduction
www.asbp.org.uk/briefing-paper/epd-an-introduction

[A1-A3]	PRODUCT stage	[A1]	Raw material extraction & supply
		[A2]	Transport to manufacturing plant
		[A3]	Manufacturing & fabrication
[A4-A5]	CONSTRUCTION stage	[A4]	Transport to project site
		[A5]	Construction & installation process
[B1-B7]	MATERIAL IN-USE stage	[B1]	Use
		[B2]	Manufacture
		[B3]	Repair
		[B4]	Replacement
		[B5]	Refurbishment
	OPERATIONAL IN-USE stage	[B6]	Operational energy use
		[B7]	Operational water use
[C1-C4]	END OF LIFE stage	[C1]	Deconstruction & Demolition
		[C2]	Transport to disposal facility
		[C3]	Waste processing for reuse, recovery or recycling
		[C4]	Disposal
[D]	Benefits and loads beyond the system boundary	[D]	Reuse Recovery Recycling potential

Reminder of whole life carbon stages

Element	Baseline	Resource name	Maufacturer	EPD number	Year	Country
Substructure	Concrete	GEN3 (C20/25), CEM I	Hanson HCG	BREG EN EPD 000191	2018	UK
Outer leaf	Clay facing brick	Red brick, average production, UK	Brick Development Association (BDA) Ltd	BREG EN EPD000002, issue, 04	2019	UK
Inner leaf	Aerated concrete block	Autoclaved aerated concrete blocks	BPCF	EPD-BPC-20170093-CCD1-EN	2017	UK
Ground floor	Beam & block	Precast concrete ground beam	British Precast	EPD-BPC-20170148-CCD1-EN	2017	UK
Upper floor & roof structure	Timber	Structural sawn timber, kiln dried, planed or machined	Wood for Good	BREG EN EPD 000124	2017	UK
Roof covering	Clay tiles	Roof tiles	Quinn	EPDIE-18-12	2018	UK
Windows	uPVC double glazing	Double-glazed PVC frame window	Munster Joinery	EPDIE-21-50	2021	Ireland

Baseline EPDs for comparative analysis

Disclaimer
This publication only provides general information on issues relating to the subject. It may not deal with every aspect and should not be treated, or relied on, as a substitute for specific advice relevant to particular circumstances. No responsibility is accepted for any loss which may arise from reliance on the information provided.

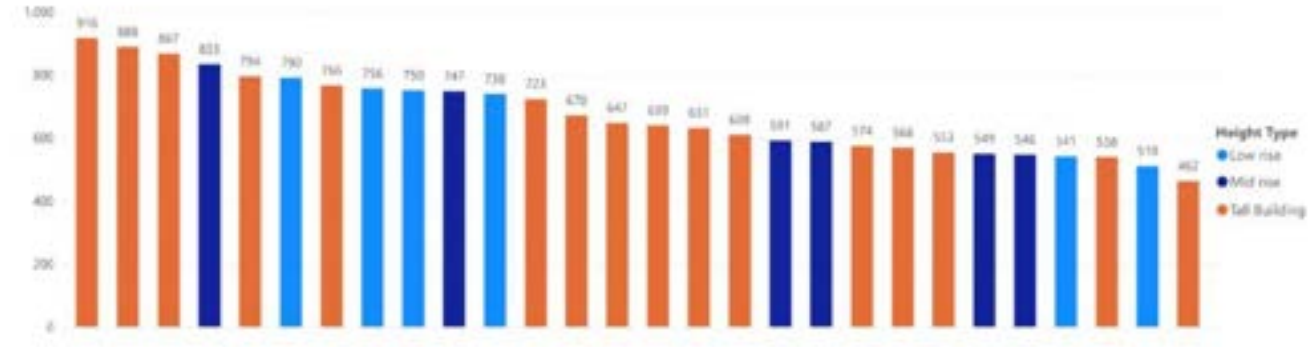
If you have any queries or would like to give feedback on the report please contact us.

Email: admin@futurehomes.org.uk
Website: www.futurehomes.org.uk

Future Homes Hub

Appendix G – Buro Happold Residential Development (New Build) Upfront Embodied Carbon

Residential Comparison Upfront Embodied Carbon A1-A5 - Total Impact



Appendix H – Landsec Development Portfolio Comparison Carbon Data

Landsec Commercial Pipeline (Evidence base to support representations to WCC regarding their Reg 19 City Plan Amendments)

April 2024

Development	Location	Description	Retrofit or new build	% of existing building retained as part of new proposals	Green Building Certifications	Key Dates	Embodied Carbon KG CO2e/m2*
Portland House	Victoria, Westminster	30 storey office tower, c400,000 sq ft GIA	Retrofit	100%	BREEAM Outstanding, WELL Platinum, NABERS UK 5*	Planning Submitted: Aug-22 Planning Approved: Dec-22 Construction start (or projected to start): Oct-23 Construction completion (or projected to complete): Aug-25	347
Timber Square	Southbank, Southwark	2 office campus, c800,000 sq ft GIA, lightweight hybrid steel and timber structure.	New build	85% of structure of one building (Print)	BREEAM Outstanding, WELL Platinum, NABERS UK 5*	Planning Submitted: Mar-20 Planning Approved: Jun-21 Construction start (or projected to start): July-22 Construction completion (or projected to complete): Dec-25	522
Red Lion Court	Southbank, Southwark	10 storey office, c370,000 sq ft GIA	New build	6% - retaining part of basement	BREEAM Outstanding, WELL Platinum, NABERS UK 5*	Planning Submitted: Apr 22 Planning Approved: Mar 23 Construction start (or projected to start): April 24 Construction completion (or projected to complete): Oct 27	584
55 and 65 Old Broad Street	City of London	23 storey office tower, c410,000 sq ft GIA	New build	28% (primarily substructure)	BREEAM Outstanding, WELL Platinum, NABERS UK 5*	Planning Submitted: Apr 23 Planning Approved: Targeting Jun 24 Construction start (or projected to start): Oct 25 Construction completion (or projected to complete): Sept 28	714
Hill House	City of London	19 storey office, c620,000 sq ft GIA	New build	60% (primarily substructure inc basement & piling)	BREEAM Outstanding, WELL Platinum, NABERS UK 5*	Planning Submitted: Sept 23 Planning Approved: Targeting Jun 24 Construction start (or projected to start): Aug 26 Construction completion (or projected to complete): Jul 29	656
The Liberty (Office building)	Southbank, Southwark	Mixed use campus with c.265,000sq ft GIA office	New build	N/A – clear site	BREEAM Outstanding, WELL Platinum, NABERS UK 5*	Planning Submitted: Sept-23 Planning Approved: May-24 (subject to s106) Construction start (or projected to start): Oct 24 Construction completion (or projected to complete): Dec-27	601
22-24 Southwark Bridge Road	Southbank, Southwark	Retention of and extension to office in Southwark– c200,000 sq ft GIA	Deep retrofit with new build extensions	85% retention of 22SBR	BREEAM Outstanding, WELL Platinum, NABERS UK 5*	Planning Submitted: Target date Jun 24 Planning Approved: Target Feb 25 Construction start (or projected to start): 2025 Construction completion (or projected to complete): 2027	522

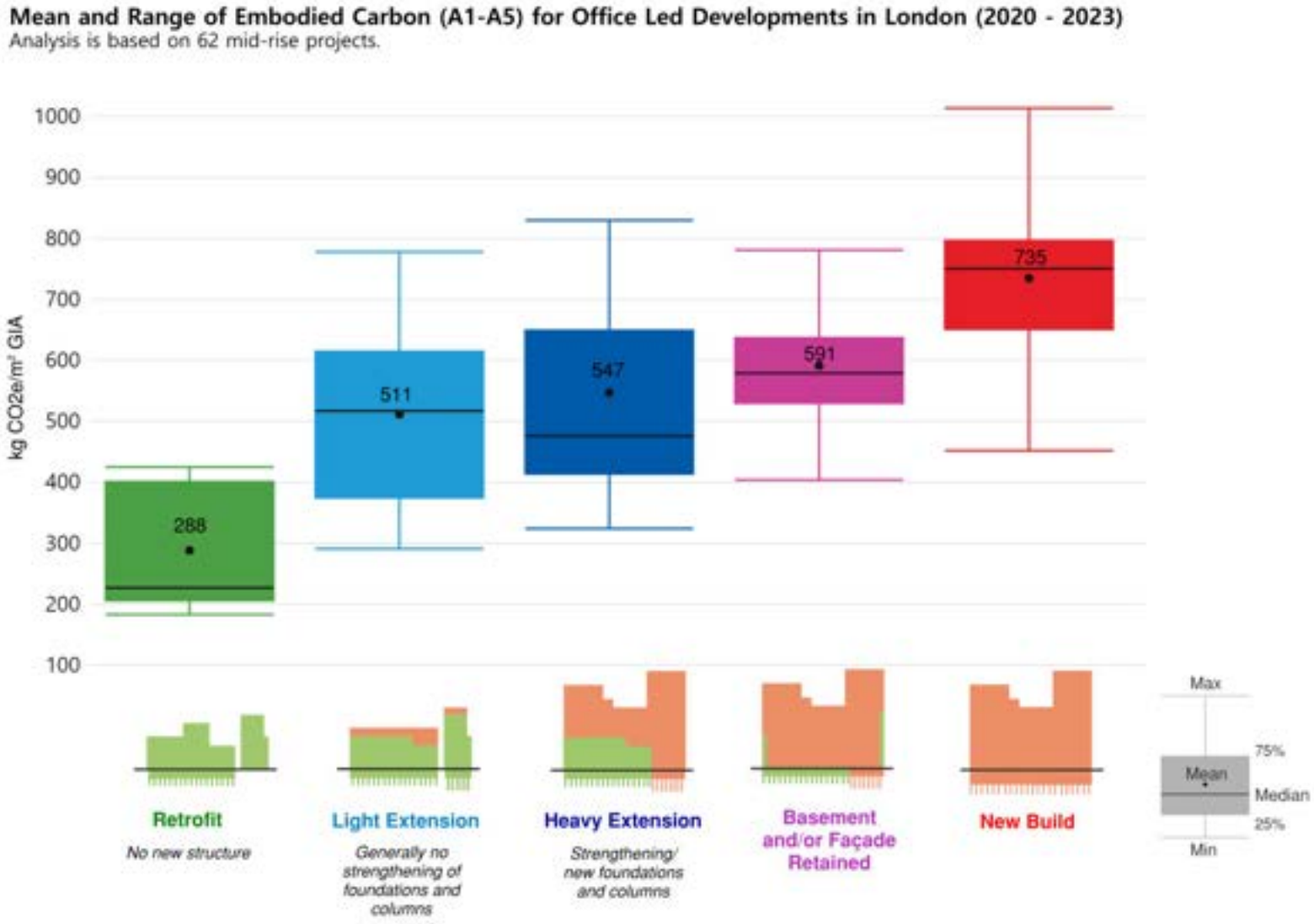
* *The embodied carbon calculations are conducted using the OneClick LCA, an industry-recognised tool in accordance with the British Standard EN 15978: 2011 and using the RICS Professional Statement: Whole Life Carbon assessment for the built environment (1st Edition), over a 60-year study period.*

Appendix I – ARUP Whisker Diagram

ARUP

Average Embodied Carbon (A1-5) – example output

Mid- rise offices



Appendix J – WPA Representations to Planning Obligations and Affordable Housing SPD (September 2023)

Westminster Property Association

Cllr G Barraclough
c/o Planning Policy Team
Westminster City Council
64 Victoria Street
London
SW1E 6QP

By email only:
planningpolicy@westminster.gov.uk

29 September 2023

Dear Cllr Barraclough

Re: Representations on behalf of the Westminster Property Association to the Planning Obligations and Affordable Housing (POAH) SPD

Please find below our formal representations to the second consultation on the draft Planning Obligations and Affordable Housing Supplementary Planning Document (POAH SPD). A list of the c250 member companies the Association represents is available here.

As we recently discussed with you and officers, we are particularly concerned at the near tenfold proposed increase in the carbon offset fee from £95/t to £880/t. As stated in our initial response to this proposal (WPA statement here) we believe your methodology for reaching that figure is deeply flawed, and inconsistent with both the London Plan and national regulations on the use of financial contributions from planning permissions.

The property industry, particularly the commercial real estate sector, is at the vanguard of driving forward sustainable development. This is in line with market demand, corporate net zero commitments and public policy, including the tightening of MEES (Minimum Energy Efficiency Standards) and EPC (Energy Performance Certificates) ratings for commercial buildings.

In principle, we are supportive of an increase in the current carbon offset cost, which has not kept pace with the costs of delivery in recent years. Evidence from across the London boroughs indicates the true average cost to lie between £150/t and £200/t (enclosed in Appendix 1).

However, it is important this is set at an appropriate level to encourage, rather than discourage, the retrofit-first approach that we all support. Far from being a radical policy which will drive sustainability, Westminster's proposed increase risks being a reckless one which will have the opposite effect, eroding investment and social and economic prosperity across the city.

The council's study underpinning this fee presupposes extensive use of PVs, and is based on off-site carbon savings being achieved solely by PVs. This is clearly impossible in a dense, and historic, urban environment such as Westminster, and is both unreasonable and legally unsound.

The policy wording also implies that the property sector requires this elevated fee, which is effectively a punitive tax, to force it to deliver sustainable development. This is categorically untrue, and not borne out by your own evidence base, the GLA's evidence, and evidence to the contrary in our Retrofit First, Not Retrofit Only report.

We believe this fee would actually deter investment in Westminster, which has already experienced a 50% drop in major planning applications over the past two years, and which are now 25% of their 2016 peak.

As set out in further detail in item 74 in our technical submission below, the proposal would impact the deliverability of retrofit due to the fact refurbished buildings are generally less efficient, operationally, than new ones and would therefore attract a substantial carbon offset fee. The risk of obsolescence would be increased, and any assumption that a corresponding market adjustment would be risk-free to Westminster's economic success is unwise, and would likely lead to unintended consequences.

The property sector has an important role in helping to deliver on the wide range of sustainability outcomes, social and economic, as well as environmental, which are all essential for genuinely sustainable cities. By virtue of its intensity of uses the commercial heart of Westminster is already one of the most sustainable areas in the world per capita. The agglomeration benefits of its mixed economy underpin its success, borne out by the strength in demand for high quality West End office space. However, this cannot be taken for granted and there are other areas within the Central Activities Zone, as well as globally, which are vying for investment.

Capital investment has also become increasingly risk averse and expensive to secure given macro-economic conditions. To compound this further locally through self-inflicted and ill-judged planning policy would be a severe setback for your own ambitions for a 'Fairer Westminster'.

We strongly urge the council to engage with us on the details within our submission as a matter of urgency so that the concerns raised, including issues of legal compliance, can be addressed in advance of the adoption of the SPD.

The WPA wishes to work with the council to help deliver on its net zero ambitions in a constructive and professional manner, and offers at your disposal our in-depth data, industry knowledge, and sustainability expertise to that end.

Yours sincerely

Charles Begley
Chief Executive
e: charles.begley@cwpa.org.uk

Westminster Property Association

Formal representations

1. Our areas of concern arising from the document relate to:

    1. Carbon offsetting and the proposed carbon price, over which we have particular concerns;
    2. Affordable workspace;
    3. Technical matters relating to the guidance on affordable housing; and
    4. Employment and skills.

Carbon offset

2. The Association supports the City Council's objective to achieve a net zero Westminster by 2040 and has, jointly, led the creation of the Sustainable City Charter with the City Council to improve the environmental performance of Westminster's existing building stock. It supports the objectives of Policy SI2 of the London Plan and the desire to ensure that carbon emissions from development are reduced.

3. The Association supports the principle of a carbon offset charge, recognising that buildings in central London have more constrained opportunities to generate renewable energy onsite and will continue to need energy, even after substantial efficiency improvements albeit this energy may be secured from renewable sources through Power Purchase Agreements and other auditable and verifiable methods, ensuring that there would be no net operational emissions. There is, therefore, an important role for offsetting any carbon emissions associated with that energy, to achieve net zero.

4. The Association recognises that the cost of offsetting carbon emissions in central London may well exceed the current £95/t offset cost set in the London Plan. It would support the City Council in setting an appropriate charge that reflects the costs of delivering local carbon savings. Our review of the average cost of delivering carbon savings across the London Boroughs, enclosed at **Appendix 1**, suggests an average cost between £150 and £200/t.

5. WPA Members are delivering net zero carbon buildings in accordance with the UKGBC framework. This means reducing construction emissions by minimising upfront embodied carbon and delivering all electric, highly efficient buildings. WPA Members invest heavily in low carbon materials to achieve embodied carbon targets, including those set corporately by individual members. Many WPA Members were early adopters of the Design for Performance/NABERS UK scheme which is a step change in designing highly efficient buildings and tracking their energy efficiency in operations and therefore spend a significant amount of capital going beyond regulatory compliance which is currently not recognised by the planning system.

6. The POAH SPD proposes to introduce a carbon offset tariff of £880/t of carbon dioxide equivalent (C02e) emitted.

7. The Association has very serious concerns regarding the level of this proposed carbon charge and objects, strongly, to this element of the SPD. The Association considers that the carbon charge as proposed is unjustified, would not comply with CIL Regulation 122, would not comply with relevant London Plan policy, and would have a material, adverse, effect on development viability in Westminster.

8. Increasing the offset price by almost tenfold would not only jeopardise our Members' ability to deliver first class new buildings in Westminster but it would detract capital away from delivering truly net zero schemes in accordance with industry standards.

9. The SPD should not be adopted until this issue is addressed.

National and global carbon pricing

10. The Government has set out a review on the valuation of (non-traded) greenhouse gas emissions in policy appraisal.[1] This suggests a value in 2023 of between £126/t and £378/t, with a central value of £252/t. This increases to £189 – £568/t by 2050. It does not come close to £880/t.

11. The World Bank aggregates data on local, and national, traded carbon pricing regimes. It reports carbon prices ranging between c. $1 (Kazakhstan) and $155.87 (Uruguay), noting the EU's Emissions Trading Scheme price is currently $96.30.[2]

Planning Policy Background

12. Paragraph 152 of the NPPF contains states that the:

> **"planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions…"**

13. Paragraph 154 states that new development should be planned in ways that, inter alia, "can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards."

14. Paragraph 6-009-20150327 of the Planning Practice Guidance states:

> **"Local requirements should form part of a Local Plan following engagement with appropriate partners, and will need to be based on robust and credible evidence and pay careful attention to viability. In this respect, planning authorities will need to take account of government decisions on the Housing Standards Review when considering a local requirement relating to new homes.**
>
> **If considering policies on local requirements for the sustainability of other buildings, local planning authorities will wish to consider if there are nationally described standards and the impact on viability of development. Further guidance can be found under Viability."**

15. National policy and guidance does not specifically address carbon offset pricing in a planning context.

16. The development plan basis for carbon pricing within planning decisions is Policy SI2 of the London Plan.

17. Policy SI2(C) states:

> **"A minimum on-site reduction of at least 35 per cent beyond Building Regulations is required for major development. Residential development should achieve 10 per cent, and non-residential development should achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:**
>
> **1) through a cash in lieu contribution to the borough's carbon offset fund, or**
>
> **2) off-site provided that an alternative proposal is identified and delivery is certain"**

18. Paragraph 158 of the London Plan addresses the role of offsetting. It states:

> **"The price for offsetting carbon is regularly reviewed. Changes to the GLA's suggested carbon offset price will be updated in future guidance. New development is expected to get as close as possible to zero-carbon**

[1] Valuation of greenhouse gas emissions: for policy appraisal and evaluation, UK Government, September 2021, available online at https://www.gov.uk/government/publications/valuing-greenhouse-gas-emissions-in-policy-appraisal/valuation-of-greenhouse-gas-emissions-for-policy-appraisal-and-evaluation

[2] Carbon Pricing Dashboard, World Bank, https://carbonpricingdashboard.worldbank.org/map_data , included at Appendix 2

onsite, rather than relying on offset fund payments to make up any shortfall in emissions. However, offset funds have the potential to unlock carbon savings from the existing building stock through energy efficiency programmes and by installing renewable technologies – typically more expensive to deliver in London due to the building age, type and tenure."

19. Footnote 155 states that:

> **"Boroughs should develop a price for offsetting carbon using either a nationally recognised carbon pricing mechanism or a price based on the cost of offsetting carbon across the borough. A nationally recognised non-traded price of £95/tonne has been tested as part of the viability."**

20. To date, the City Council has used the non-traded price of £95/t provided for in the London Plan.

Current proposals

21. The City Council has previously consulted on a potential increase in the carbon offset price to £300/t, in the March 2022 version of the POAH SPD. The Association objected to that proposal at the time, which it did not consider to be justified. Our previous representations, and our comments on an early version of the evidence base document from 2020, are enclosed as **Appendices 3 and 4**, respectively.

22. The City Council now proposes to set a local carbon price of £880/t.

23. The POAH does not set out the basis for the £880/t price, and refers to the Delivering Net Zero 2023 (The "2023 Study") document as the evidence base.[3]

24. The 2023 Study explains the rationale for the recommended offset approach in Section 10.

25. At p242 it states:

> **"a 35% on-site improvement over Part L 2021 may be relatively easy to comply with for some buildings. In those cases, if it is cheaper to offset than to seek further carbon reductions on site, applicants will generally find it tempting to limit their commitments in terms of on-site performance to the 35% minimum, and offset the residual regulation emissions."**

26. It goes on to state that:

> **"carbon offsetting should not be the cheapest option: its price should be at least as high as the cost of installing PVs on the building. That would encourage applicants to do this instead of doing less and pay into the offset fund."**[4]

27. The subsequent paragraph then states:

> **"The carbon offset price should be set at a level which enables each London borough to save carbon elsewhere on a 1:1 basis, administer the carbon offset fund, and ensure that all other good practice principles on carbon offsetting are complied with (e.g. additionality)."**

28. The 2023 Study then recommends a carbon offset price of £880/t.[5]

29. It provides only a very limited explanation as to how this is derived. It notes this is based on a cost of £1,016/kWp for a high output PV system with microinverters, with a 10% premium for administration of the offset fund, based on a carbon factor for electricity of 50gCO2/kWh. This is described as "**representative of the average electricity**

[3] Delivering Net Zero, An evidence study to support planning policies which deliver Net Zero Carbon developments, Levitt Bernstein et al., May 2023, available online at https://www.westminster.gov.uk/media/document/delivering-net-zero-july-2023 ("The 2023 Study")

[4] 2023 Study, page 243

[5] Ibid., p244

carbon content over the lifetime of the PV system". This is described as "**set[ting]the carbon offset price at a level sufficient to incentivise greater carbon savings on site rather than offsetting.**"

30. By way of illustration, the carbon offset contribution on an office led, comprehensive redevelopment of c. 30,000sqm GIA, of a very high standard environmental design, would increase – when considered against 2021 Part L – from c. £250,000 to c. £2.2m. This is a substantial increase.

31. No further explanation of this calculation is provided.

Areas of concern

32. The Association is seriously concerned about the scale of the proposed increase in carbon price. It does not support setting the tariff at the level proposed.

33. The Association considers that the proposed charge would be unlawful for the following main reasons:

    (i) The proposed charged is not evidentially justified. Therefore, it would not comply with Regulation 122 of the CIL Regulations.

    (ii) The proposed charge would not comply with strategic London Plan planning policy;

    (iii) The proposed charge is derived from an incorrect understanding of the carbon savings deliverable, especially in Westminster's heritage and conservation context;

    (iv) The proposed charge would have a material, adverse, effect on the deliverability of new development, contrary to paragraph 34 of the NPPF, and the PPG.

34. We address each below.

(i) Regulation 122 of the Community Infrastructure Levy Regulations 2012

35. The proposed offset cost would not comply with Regulation 122 of the Community Infrastructure Levy Regulations 2012. Regulation 122 states:

> **(2) [Subject to paragraph (2A),] A planning obligation may only constitute a reason for granting planning permission for the development if the obligation is—**
>
> **(a) necessary to make the development acceptable in planning terms;**
>
> **(b) directly related to the development; and**
>
> **(c) fairly and reasonably related in scale and kind to the development.**

36. The 2023 Study explains that the offset price is based solely on the cost of installing PV panels, to incentivise developers to install more. The feasibility of this is discussed in more detail below, but as the Study concludes that, in respect of office buildings, substantial offsetting will still be required even with 70% roof coverage[6], it is inevitable that this offset will be delivered by mechanisms other than on-site PVs, and at a different price, because more on-site PVs will not be feasible.

37. The 2023 Study itself recognises that a carbon offset cost based on retrofitting other buildings (ie, a method other than the deployment of PVs) should be around £370/t.[7]

38. The 2020 Study likewise concluded the cost was likely to be c. **"at least £300/t"**.[8]

[6] Ibid., Section 6.2.1
[7] Ibid., Section 10, page 244
[8] Towards Net Zero, Final Report, May 202 Revision M, p42. Available online at https://www.westminster.gov.uk/media/document/towards-net-zero-carbon---achieving-greater-carbon-reductions-on-site-may-2020

Westminster Property Association

39. As noted above, the London Plan is clear that the offset cost should be based on the local cost of retrofit (not the cost of deploying one particular form of renewable technology).

40. The Association considers that the evidence demonstrates that it is wholly implausible that all carbon offset in Westminster would be achieved by the installation of PV panels rather than by other methods such as reducing energy demand through energy efficiency. The evidence demonstrates that are insufficient potential installation locations in Westminster to install the PV capacity necessary to provide sufficient offset. Therefore, setting the carbon offset cost based solely on PVs is not justified or necessary as it is not realistically related to the actual cost of offsetting carbon across the Borough.

41. Prioritising renewable energy generation, rather than reducing energy demand by improving efficiency in existing and proposed buildings would also be inconsistent with the Mayor's Energy Hierarchy.

42. The City Council has set out guidance on the use of the Carbon Offset Fund.[9] This provides "**criteria for allocating funds to local carbon saving projects**". It states (paragraph 4.1), that the objectives of the fund are to enable Westminster residents, businesses and communities to:

> **"Reduce their energy use and associated carbon emissions**
>
> **Promote greener and cleaner communities**
>
> **Support the delivery of wider co-benefits, in line with the City Council's Fairer Westminster strategy.**
>
> **Support delivery of Westminster's net zero carbon targets set out in the City Council's Climate Emergency Action Plan. "**

43. The guidance indicates projects should aim to deliver carbon savings at a rate of £500/t.

44. Appendix 1 to the Guidance describes the priority projects on which the funding will be focused. These are grouped into themes, including "Efficient Buildings", which seeks to reduce energy demand in existing buildings, "Clean and Affordable Energy" which seeks to expand renewable energy provision, as well as other themes promoting sustainable travel and transport, and promoting knowledge and learning.

45. The Mayor's December 2022 review of carbon offset funding[10] identified a wide range of carbon offset costs arising from the examples cited, ranging from £58/t upwards.[11]

46. The Mayoral Energy Efficiency Fund invests on the basis of a threshold of £167/t over 30 years, for energy efficiency measures in public sector buildings.[12]

47. The Association's review of evidence from across the London boroughs, enclosed at **Appendix 1**, also suggests that the average cost of reducing carbon emissions from retrofit / energy efficiency measures is c. £178/t.

48. It is, therefore, clear that offsets will be created through a range of different techniques, not solely (or even predominantly) the provision of PVs, at a range of different costs.

49. Therefore, it is plain that an offset cost of £880/t is not necessary or related in scale and kind to the development because carbon offsets will be realised through a mix of measures, not just provision of PVs.

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[9] Westminster Carbon Offset Fund Guidance, 2023. Available online at https://www.westminster.gov.uk/media/document/carbon-offset-fund-guidance

[10] Carbon Offset Funds: Monitoring Report 2021, Mayor of London, December 2022, available online at https://www.london.gov.uk/sites/default/files/2023-01/GLA%20Carbon%20Offset%20Funds%20Monitoring%20Report%202021.pdf

[11] Ibid., Case Studies on p18 / 19 – Kingston Warm Homes Better Health 685t CO2 saved per year at cost of £40,000

[12] Carbon Offset Funds, Greater London Authority guidance for London's Local Planning Authorities on establishing carbon offset funds, GLA, July 2022, paragraph 4.13, available online at https://www.london.gov.uk/sites/default/files/gla_carbon_offsetting_guidance_2022.pdf

50. The evidence base itself conflicts with the basis of the offset cost and confirms that it will not be possible to realise all the necessary carbon reductions from commercial buildings on-site. It does not test relying on PVs only to produce the necessary offsets, and conversely the Council's own guidance indicates that offset funds will fund a range of projects. The Council's guidance indicates a target rate of £500/t. The evidence base document suggests in the region of £300/t, and a review of actual projects suggests £150-£200/t

51. The offset cost must be derived through the actual costs of the mix of measures to be provided across the Borough and not a blanket cost for PVs which is acknowledged cannot and will not be the sole technique employed. The cost of £880/t which is based solely on PVs is therefore unlawful. This cost cannot be demonstrated as being necessary to make a development acceptable, be fairly and reasonably related in scale or directly related to the development.

52. The sum must be adjusted to fairly and realistically reflect the actual cost of carbon offsetting in the city in order for any charge to be lawful.

53. We suggest that the City Council also set out a draft Memorandum, to be attached to s106 agreements securing carbon offset payments, that will state in what circumstances the carbon offset funding secured will be used, to ensure money collected under s106 is targeted at carbon reduction projects and not used for wider purposes.

(ii) The proposed charge is in conflict with London Plan policy

54. As noted above, the policy basis for carbon offsets is London Plan Policy SI2, and the associated explanatory memoranda. These clearly refer to the offset cost being based upon the local cost of offset projects. This is also consistent with the requirements of Regulation 122 of the CIL Regulations.

55. As described above, the proposed cost is based upon the costs of deploying one particular form of technology, photovoltaic panels. There will, of necessity as envisaged by Westminster Carbon Offset Fund Guidance, be other methods for generating offsets but the offset cost is not based upon these.

56. Thus, the proposed cost does not comply with Policy SI2 and associated text.

57. The proposed approach would be focused on generation of renewable energy, rather than reducing energy demand, which would not comply with the Mayor's Energy Hierarchy as set out in Policy SI2.

58. The approach, and the guidance, should also recognise the role of 'in kind' provision through retrofitting or other measures delivered by the applicant / developer on other buildings within the city. Policy SI2(C)(ii) provides for off-site provision where an alternative proposal is identified and delivery is certain. This is not currently addressed within the guidance, notwithstanding the clear provision for it within strategic policy.

(iii) Incorrect understanding of the carbon savings achievable

59. The supporting documentation is focused on the introduction of additional photovoltaic panels.

60. The prioritisation of solar power appears to be based upon the example of Policy SEC1 of the Cornwall Council Development Plan Document[13], which prioritises roof-mounted PV, with the objective of achieving on-site renewable energy generation to match the residual energy consumption of buildings. This policy was introduced through a development plan document that was subject to independent examination.

61. The Cornwall example is not applicable to the Westminster context:

    a. First, because the assessment of the carbon performance of buildings in Westminster remains based upon Part L 2021, as the adopted London Plan approach, rather than focused on reducing energy intensity and then matching energy intensity with on-site generation.

[13] 2023 Study, page 41

b. Second, because the evidence base does not, then, explore whether or not generation of the required energy from on-site PVs would be practical and achievable in the central London context.

62. This is a serious omission within the supporting documentation.

63. The Association does not consider that the Cornish example is directly relevant to central London. A policy that may be effective at lower latitudes (ie, with improved PV efficiency) with higher average sunshine in a more rural administrative area will not be effective in central London, given far more constrained sites and a densely urbanised area with extensive constraints on PV generation, both from overshadowing and from conservation designations.

64. The modelling conducted on London office buildings within the 2023 Study concludes that, even with 50% site coverage from PVs, it is not possible to achieve the London Plan Policy SI2 requirement of a 35% on-site reduction in carbon emissions on Part L 2021. An increase to 70% **is** shown to achieve compliance in most cases, with reductions on Part L of between 37% and 57%.

65. Crucially, whether the 35% target is achieved, or not, **the residual emissions would still need to be offset using the carbon offset tariff**.

66. (Incidentally, it is not clear what plot ratio has been assumed in testing this scenario. Increasing PV will have less overall effect on denser / taller office buildings because their energy use will increase but their available roof space will not.)

67. The Association is already concerned that 70% roof coverage by PV will not be achievable because of other pressures on roof space, such as biodiversity, urban greening, and the space needed to accommodate air source heat pumps, which must have free air. Increasing further, beyond 70%, is most unlikely to be feasible. The embodied carbon cost of the additional PVs is also not considered in this approach.

68. The GLA's own data confirms this point. **Appendix 5** is a presentation from the Mayor of London's office, considering the shift to Part L 2021 for compliance with London Plan Policy SI2. The graph at Page 7 confirms that office accommodation, in particular, would not achieve on-site zero carbon and would still require off-sets, even incorporating PVs and heat-pump led district heating networks.

69. The analysis within the evidence base, the GLA's analysis, and the Association's experience therefore confirms that, for commercial office buildings, offsets will continue to play a significant role, as achieving reductions of, or close to, 100%, is not possible at this point.

70. Furthermore, there are frequently significant heritage and conservation constraints that will limit the extent to which renewable energy and other interventions to reduce energy use are appropriate in Westminster, given the extent of conservation designations and frequency of listed buildings. Incorporating extensive PV coverage, or deploying other technologies, will often not be feasible or permissible.

71. The charge proposed for offsets is stated to be set at a penal level to try to influence developer behaviour or encourage additional provision for PVs. This is unlawful, in particular because there is no evidential basis for asserting that all carbon saving will be achieved by PVs across the City. The evidence shows the contrary.

72. We additionally note that most leading developers have their own commitments to delivering zero carbon buildings, and their own offset arrangements to support delivery of these buildings, which this carbon charge may duplicate. Commitments to offsetting operational emissions through other methods should be addressed within the guidance and taken into account.

73. An ongoing problem that would remain unaddressed is the treatment of Power Purchase Agreements and other arrangements that allow for buildings to be supplied by auditable, verified (and in the case of PPAs additional) sources of 100% renewable electricity, meaning that (if fossil fuels are not used within the building), there will be no net operational emissions. Many developers and occupiers have corporate commitments to using such sources of electricity irrespective of planning commitments. However, such commitments – even if secured

through s106 legal agreement – are not taken into account when calculating residual emissions, meaning that carbon offset payments may be sought even when the operational phase of the building will not lead to carbon emissions because it is supplied with electricity from 100% renewable sources. Imposing an increased carbon offset payment would exacerbate this problem, and potentially actually disincentivise the use of green energy because of its additional cost, if funds had already been spent on the offset payment and were no longer available to source renewable energy.

74. The proposal would also disincentivise retrofit. This is a serious concern. As retrofit / refurbishments of existing buildings become more extensive, they are more likely to require planning permission and, as a result, the full suite of energy modelling and analysis. Refurbished buildings are generally less efficient, operationally, than new buildings because their design, basic structure and orientation cannot be maximised for energy savings. If the scale of the application is such that the energy modelling is required, and an offset payment is then sought at the level proposed, there will be a very substantial disincentive to undertake the retrofit because of the carbon offset that would then be sought. Economically, it may be more desirable to continue with an unrefurbished building, even if that is likely to mean substantially greater carbon emissions.

(iv) The proposed charge would have a material, adverse, effect on the deliverability of new development

75. Paragraph 34 of the NPPF requires that development contributions should "not undermine the deliverability of the plan." Paragraph 6-009-20150327 of the PPG, quoted above, refers to the need to pay "**careful attention**" to viability.

76. The effect of the proposed charge is considered in the POAH SPD Viability Study by BNP Paribas Real Estate ("the 2023 Viability Study").

77. The 2023 Viability Study tests 155 development proposals on sites across the city to represent the types of sites that the Council expects to come forward over the Plan period; These developments are based on submitted applications and considered by the VA to be representative of schemes likely to come forward during the Plan period.

78. A residual based methodology has been applied to test the viability of development typologies, including the impact on viability of the Council's emerging planning policies alongside adopted levels of Westminster CIL.

79. Sensitivity analysis in the 2023 Viability Study is confined solely to a single scenario, testing the impact of growth in sales values/capital values of 10% and cost inflation of 5%. No downside viability testing has been undertaken. This is particularly important given the current uncertainty on market inputs including finance rates.

80. The 2023 Viability Study concludes that:

> **"Increasing the offset figure to the higher levels we have tested (£880 per tonne) would have a more significant impact on viability (an average reduction in residual land values of 33%) and is likely to put pressure on the extent to which developments can absorb the cumulative impact of all plan policy requirements."**[14]

81. This would be a material, and significant, reduction in residual land values and would significantly restrict the supply of land in the city. A total offset payment equating to 14% of construction costs is excessive and will stifle development across Westminster.

82. Given the complexity of the City of Westminster area, the 2023 Viability Study does not adequately provide a methodologically sound and comprehensive evidence base for the proposed tariff, according to the requirements of the NPPF and NPG for the following reasons:

    a. It concludes that the proposed figures would have "a more significant impact on viability", notwithstanding our other methodological concerns.

[14] City Plan and POAH SPD Viability Study, BNP Paribas, 2023, page 4

b. The typologies selected do not reflect the diversity of development coming forward across the City;

c. Supporting evidence is limited, superficial and in some cases non-existent, thereby not representative of the geographical spread of costs and values across the complex urban area of Westminster;

d. It relies upon a land value benchmark of existing use value plus an arbitrary margin (premium). This is not in accordance with the Paragraphs 13 to 16 of the NPG nor RICS mandatory requirements. This approach disregards the national planning policy and planning guidance considerations. National policy and guidance prescribe that premiums should be determined by the market place.

83. It is impossible to critically analyse the modelling as the results are only summarised in table form without necessary detail on cost and value components. WPA is concerned by the lack of transparency, and apparent inaccuracies, in the application and testing of the cumulative impact of policies, and therefore request further detail to enable transparent analysis of BNPPRE's modelling.

84. The Association notes that the 2023 Viability Study suggests that "**many developers would opt for the more cost effective route of on-site carbon reduction solutions**"[15] rather than paying the offset charge. However, this is entirely inconsistent with the findings of the 2023 Study, as described above, which conclude, in respect of commercial development, that substantial offset payments will continue to be required because office developments will struggle to exceed a 50-60% on site carbon reduction, even with 70% PV coverage. The option of on-site carbon reductions will not be available and development will be exposed to these deliverability challenges.

85. Furthermore, the capital cost modelling provided at Section 9 of the 2023 Study contains areas of concern. Current price increases in key components, including photovoltaics, are excluded on the basis the authors consider they are short term.[16] Inflation is assumed to be less than 5% per annum, not withstanding rates double that over the last 12 months.

86. This additional cost would also come on top of further, significant, increases in the cost and complexity of delivering new developments, especially, but not limited to, residential development. These include overall cost inflation, the additional costs associated with the Future Homes Standard, the requirements for second staircases and other fire engineering features in taller buildings (be they residential or commercial), the financial implications of the Building Safety Levy, and the overall requirements for affordable housing provision. These additional costs do not appear to have been addressed within the 2023 Viability Study.

87. Overall, the proposed charge would not, therefore, be consistent with national policy.

Part L

88. The Association notes that, within the box on page 63 of the POAH SPD, it is stated that **"at least a 35% improvement on Part L of the Building Regulations 2013"** should be achieved on site.

89. Part L 2013 has been replaced by Part L 2021. The GLA's guidance on the application of Policy SI2 requires the energy performance of buildings to be assessed against 2021 Part L.[17] The GLA recognises that achieving a 35% reduction against 2021 Part L is likely to be more challenging, especially for non-residential buildings.[18]

90. The POAH must be updated to refer to the 2021 Part L to align with the GLA's approach and application and London Plan policy, and carbon offsets only sought based on residual emissions under 2021 Part L.

[15] Ibid., p4 and again at 5.43 and 6.2
[16] 2023 Study, p 222
[17] Energy Assessment Guidance, Greater London Authority guidance on preparing energy assessments as part of planning applications (June 2022), available online at https://www.london.gov.uk/media/12774/download?attachment
[18] Energy Assessment Guidance updates - Part L 2021 of building regulations, GLA Cover Note, undated, page 2, available online at https://www.london.gov.uk/media/99153/download?attachment

91. It is also unclear whether the viability assessment of the £880/t tariff is based on assumed contributions under 2021, or Part L. This requires clarification.

Other matters

92. The Association recognises that the 2023 Study questions whether the current definition of net zero should be reconsidered as part of the review of the London Plan, to explore whether other ways of assessing the carbon emissions of buildings could be considered. This could include considering energy intensity / energy in use, and the actual performance of buildings, rather than against current Part L. This is described as "Option 2".

93. The Association agrees that the continued role of Part L, as opposed to other forms of measurement, should be investigated and considered in more detail. It agrees that energy intensity may be a more appropriate assessment. It looks forward to discussing this issue in more detail, potentially as part of the review of the London Plan.

Affordable Workspace

94. We refer to our previous detailed representations on this matter, in our letter of 29 April 2022.

95. In summary, as set out in that letter:

    a. we do not consider that the need for affordable workspace has been demonstrated in Westminster, as the market provides a wide range of accommodation, including some that is heavily discounted from prevailing market rates;

    b. it is unclear how providing some discounted workspace will necessarily assist in addressing wider economic issues, and could simply lead to eligible businesses relocating from less, to more, expensive areas. There may not necessarily be a need for all forms of discounted space;

    c. The guidance that is proposed is highly prescriptive and will not always represent the best outcome in all scenarios. Managing, and finding occupiers for, space that is subject to extensive and complex eligibility requirements can prove complex;

    d. The procedural requirements to secure the space remain unnecessarily complex and will discourage, rather than encourage, provision;

    e. We suggest that some provision is also made in the document for financial contributions to the City Council, instead of on-site provision. This could allow the City Council to provide the type of space that it considers is necessary, for example by pooling contributions to purchase buildings where there is a need, providing subsidised access to existing flexible office space, or exploring other operation models.

96. We welcome the changes made in response to our previous comments. In particular, we welcome the recognition on the penultimate paragraph of page 36 that the absence of any provision of affordable workspace will not in itself constitute a reason for refusing planning permission.

97. We suggest that the title for this heading is amended to "Where this guidance applies" to reflect the fact that the SPD can only provide guidance and cannot create a new policy requirement.

98. We also welcome the clarification that the guidance relates to net additional floorspace, not to total commercial floorspace.

99. Insofar as our other previous comments from our letter of April 2022 remain unaddressed, these continue to reflect the Association's position.

Affordable Housing

100. The Association's comments remain as set out in our letter of April 2022, subject to our comments below.

101. We reiterate our previous observation that the charging rates for payments in lieu are significantly higher than those associated with the previous City Plan and we anticipate that this will result in a greater proportion of applications following viability-tested route, as oppose to the fast track route, or to fewer applications for residential development as a whole.

102. We suggest, in the final paragraph on Page 14, that the text is amended to refer to "no or limited alterations to existing homes." There may well be cases where existing homes are subject to limited works as part of the creation of additional residential floorspace, for example an upward extension, but without being physically reconfigured as described on the following page or being "new homes". We believe that this is the intention of the guidance, but suggest that this should be clarified.

103. For similar we suggest that the reference to "refurbishment or reconfiguration" in the first paragraph of Page 15 should be to "reconfiguration" only. Works of refurbishment within an existing home should not create a requirement for affordable housing, even if they are undertaken alongside other works that do create new homes. We suggest that the test of "reconfiguration" is more appropriate.

Employment and skills

104. The Association's comments remain as set out in our letter of April 2022, subject to our comments below.

105. We note that the potential financial penalty of £6,000 per job / apprenticeship appears high compared to other boroughs. For example, Southwark's is currently £4,000 / job.

106. The Association would encourage the City Council to explore allowing for a more nuanced approach to promote greater collaboration between the council and developers to maximise benefits for residents. Whilst the contribution method based on the methodology in the proposal is likely to support those developers that are not able to deliver programmes themselves, we suggest that the guidance should also allow engagement with developers with established programmes/partnerships already addressing employment and skills where they are able to demonstrate equivalent, or greater, local benefits through existing programmes.

107. This could include:

a. Using existing partnerships to create social value in the area of the development i.e. No. of local people engaged in employability programmes; no. of people supported to enter the world of work - apprenticeships, on-site jobs;

b. Reporting the total number of beneficiaries and social value delivered in the area annually;

c. Potentially allowing financial contributions from developers who have established programmes and partnerships to be directed to those programmes, to provide further enhancement to their outcomes and opportunities, including with auditing arrangements and targets within the s106 agreement;

d. Where a developer has multiple developments within Westminster, working with the council to develop a group Employment and Skills Plan (ESP), rather than on a site-by-site basis. The ESP would be prepared across the portfolio of developments therefore providing an aggregation of the impact that will be achieved across the portfolio.

e. Allow greater flexibility within s106 agreements for cross borough collaboration where appropriate, in line with the recommendations from the Skills for a Sustainable Skyline Taskforce report[19] published by the City of London Corporation earlier this year.

Appendix 1 – Review of costs of borough carbon reduction / energy efficiency projects, WPA
Appendix 2 - Carbon Pricing Dashboard, World Bank
Appendix 3 – WPA Representations on March 2022 Planning Obligations and Affordable House SPD
Appendix 4 – WPA Letter of Comment on Toward Zero Carbon – The Role of Carbon Pricing, 17 December 2020
Appendix 5 – London Plan – Part L 2021 impact, Mayor of London, 6 May 2022

[19] 2023 Skills for a Sustainable Skyline - recommendations

Appendix K – LETI Whole Life Carbon Reporting Spreadsheet

The LETI Embodied Carbon Declaration Template

Purpose

To enable direct comparisons both between projects and benchmarks, consistency of reporting is necessary, to enable peer-review and simplify future analysis of projects.

When reporting any total embodied carbon figure, the RICS PS should be followed and a minimum of 95% of cost should be included in the assessment. The template provided, allows the breakdown per building element to be reported, along with material quantities, data sources and boundary of the project. In commercial assessments Cat A and Cat B fit outs should be reported separately.

It is anticipated that projects will report at key stages, including planning, tender, and as-built, with the data accuracy increasing as the design becomes increasingly fixed/detailed. It is recommended that generic or typical carbon factors are used for materials at the early design stages to focus on the efficiency of material use. Once particular products have been specified, calculations shall be updated using product-specific EPDs.

Embodied carbon figures should be provided for Upfront Carbon (modules A1-5), and Life Cycle Embodied Carbon (A1-5, B1-5, C1-4), enabling the separation of construction impacts from future ongoing impacts.

For clarity, sequestration is reported separately if reporting only Upfront Carbon (modules A1-5) but shall be included if reporting end-of-life emissions for Life Cycle Embodied Carbon (A1-5, B1-5, C1-4). Module D should be reported separately. Offsetting is not included. This ensures that direct emissions can be clearly identified in parallel to recording the beneficial aspects of the design.

In order to claim a LETI rating against the bandings, the template for a particular project should be fully completed and publicly disclosed on a website.

How to use this template

The spreadsheet is split into three main sections:

1 - Project Input, where the general aspects of the building are entered.
This records data useful for future analysis, such as GIA, materials, building heights, etc. Do add as much information about the building as possible. In addition, it contains space to add a URL to where this data will be stored for interested parties to download and analyse. It is important to share the data to the wider industry to enable better benchmarking, but also allow analysis of progress towards low carbon buildings.

2 - Data Input, where the embodied carbon for the project is to be entered.
Enter the embodied carbon data within the cells against the correct module and building element.
Building elements in grey can be entered but will not included in the overall benchmarking. These have been omitted to ensure comparability between projects.
Building elements and modules that are hatched out should not be analysed according to BS EN 15978 and the RICS Professional Statement on whole life carbon.
Note, Renewable Electricity Generation elements are those that are additional to the building (i.e. not BIPV). These are kept separate while the relative benefits towards operational zero carbon are co-analysed and will be reviewed in future updates.

3 - Output Page, which produces the output graphic for sharing.
This page can be printed as a pdf and shared to demonstrate the embodied carbon performance of your project.
This updates according to the sector selected. If your project sector is selected as "Other", the output will show only the totals as a Non-Listed Typology. Although there is no benchmark, by sharing your results you will be enabling future benchmarks to be made.

Feedback
If you have any feedback, please use the following link:
https://www.surveymonkey.co.uk/r/LETICarbonAlignment

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1. Project Input

Project Name	
Project Sector	
Assessment Date	
Assessment By (name)	
Assessment By (company)	
RIBA Workstage	
GIA (m^2)	
Est. Year of Project Completion	
Location of data	
Project Description (overview of the projects, e.g. building type, number of stories, basement, site conditions, materials, constraints, structural system, servicing strategy):	
Analysis Method (e.g. software)	
Data Notes (other descriptions about the process, omissions, additions, etc. that would help future analysis)	

Project Name	
Project Sector	
Assessment Date	
Assessment By (name)	
Assessment By (company)	
RIBA Workstage	
GIA (m^2)	
Est. Year of Project Completion	

Embodied Carbon per Module per Element ($kgCO_2e/m^2$, GIA)

		A1-3	A1-3 (sequestered)	A4	A5	B1-3	B4&5	C1-4	D
Demolition	Toxic Material Treatment								
	Major Demolition Works								
Facilitating Works	Temporary/ Enabling Works								
	Specialist Ground works								
Substructure	Substructure								
Superstructure	Frame								
	Upper Floors								
	Roof								
	Stairs and Ramp								
	External Walls								
	Windows and External Doors								
	Internal Walls and Partitions								
	Internal Doors								
Finishes	Wall Finishes								
	Floor Finishes								
	Ceiling Finishes								
FF&E	FF&E (Fixed)								
	FF&E (non-fixed)								
Building Services	Building Services								
	Refrigerant Leakage								
	Renewable Electricity Generation								
Prefabricated Buildings	Pre-fab Building Units								
Work to Existing Building	Minor Demolition and Alterations								
External Works	External Works								
	TOTAL	0	0	0	0	0	0	0	0

Benchmarking

Upfront Embodied Carbon A1-5 exc. Sequestration	0	$kgCO_2e/m^2$
Life Cycle Embodied Carbon A1-5, B1-5, C1-4	0	$kgCO_2e/m^2$
Sequestered Carbon A1-3	0	$kgCO_2e/m^2$
Module D	0	$kgCO_2e/m^2$

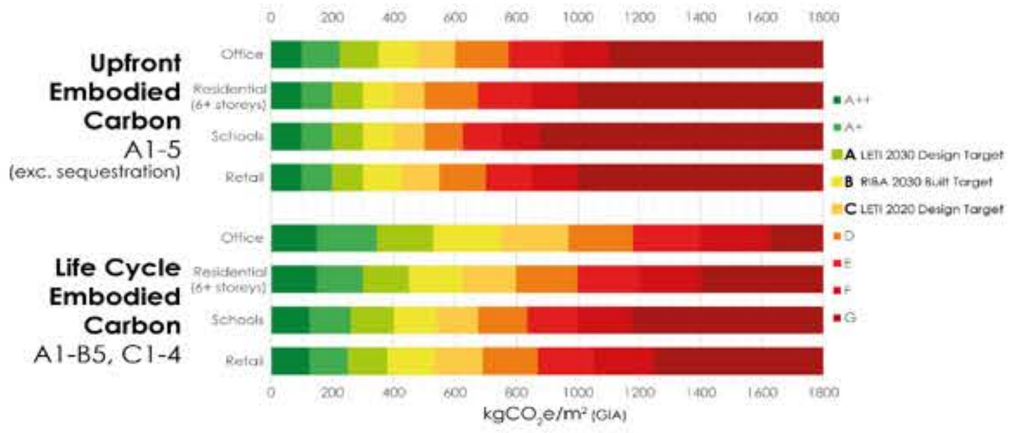
Project Name Project Sector Assessment Date Assessment By (company) Location of Data -	Upfront Embodied Carbon A1-5 exc. sequestration ($kgCO_2e/m^2$)	Life Cycle Embodied Carbon A1-5, B1-5, C1-4 ($kgCO_2e/m^2$)
A++		
A+		
A		
B		
C		
D		
E		
Current Average Design		
F		
G		
Non-Listed Typology:		
Sequestered Carbon:	0 kgCO e/m²	
	Module D:	0 kgCO e/m²

Upfront Embodied Carbon, A1-5 (exc. sequestration)

	Band	Office	Residential (6+ storeys)	Education	Retail
	A++	<100	<100	<100	<100
	A+	<225	<200	<200	<200
LETI 2030 Design Target	A	<350	<300	<300	<300
	B	<475	<400	<400	<425
LETI 2020 Design Target	C	<600	<500	<500	<550
	D	<775	<675	<625	<700
	E	<950	<850	<750	<850
	F	<1100	<1000	<875	<1000
	G	<1300	<1200	<1100	<1200

Life Cycle Embodied Carbon, A1-5, B1-5, C1-4

	Band	Office	Residential (6+ storeys)	Education	Retail
	A++	<150	<150	<125	<125
	A+	<345	<300	<260	<250
	A	<530	<450	<400	<380
RIBA 2030 Build Target	B	<760	<625	<540	<535
	C	<970	<800	<675	<690
	D	<1180	<1000	<835	<870
	E	<1400	<1200	<1000	<1050
	F	<1625	<1400	<1175	<1250
	G	<1900	<1600	<1350	<1450



Band Colours (RGB)	
A++	048337
A+	45AA50
A	A8C812
B	F3E72C
C	FECC46
D	EF7C1A
E	E52320
F	D10913
G	A81916

Calculation Page

	Selected Typology Benchmarks		Benchmark Difference		Scaling per band		Transparent Buffer Height		Band Indicator		
	Upfront	**Life Cycle**	**Upfront**	**Life Cycle**	**Upfront**	**Life Cycle**	**Upfront**	**Life Cycle**	**Upfront**	**Life Cycle**	
A++	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**A++**
A+	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**A+**
A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**A**
B	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**B**
C	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**C**
D	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**D**
E	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**E**
F	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**F**
G	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**G**
Max	<20000	<20000									

Band Colours (RGB)	
A++	048337
A+	45AA50
A	A8C812
B	F3E72C
C	FECC46
D	EF7C1A
E	E52320
F	D10913
G	A81916

Project Performance	
0	0
0	0

Buffer Height:	#N/A	#N/A
Mask Size:	1	1

Sector List
Office
Residential (6+ storeys)
Education
Retail
Other

Targets Selection:
LETI Format: FALSE
RIBA Format FALSE

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Appendix L – GLA Whole Life Carbon Reporting Spreadsheet

The draft consultation version of the template has been updated as follows:

Template tab	Details
Pre-app information	Principle 1 expanded to require further details on pre-construction demolition and options explored for retaining existing buildings/structures.
	Removal of Y/N option next to each WLC reduction principle.
Outline and Detailed planning Stage & Post-construction result	Confirmation of operational modelling process used
	Confirmation relating to proportion of material quantities included relating to cost
	Confirmation of third party mechanisms
	Confirmation that the assessment has or can be submitted to the Built Environment Carbon Database
	Updated assessment summary results to align with new WLC benchmarks
	Addition of selection of most comparable WLC benchmark selection
	Addition of details relating to retention of existing structures and buildings
	Updated note/example text for module B assumptions and end of life scenarios in the 'Material Quantity and End of Life Scenarios' table
	Addition of details relating to refrigerants to 'Material Quantity and End of Life Scenarios' table
	Addition of option in assessment table to report A5 emissions as a single number or A5 emissions not related to a building element category
	Removal of assessment 2
	Colour coding to reflect cells that require inputs and cells which are updated automatically
Post-construction result	Addition of confirmation relating to post-construction evidence submission
	Addition of list of product specific EPDs from products installed in the building

Greater London Authority - Whole Life-Cycle Carbon (WLC) Assessment template

HOW TO USE THIS SPREADSHEET

This template should be used by planning applicants to fulfil the requirements of the Mayor's Whole Life-Cycle Carbon (WLC) Assessment policy set out in London Plan Policy SI 2. Before completing and submitting this spreadsheet to the GLA, applicants should read the Whole Life-Cycle Carbon Assessment guidance:
https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance/whole-life-cycle-carbon-assessments-guidance

Applicants are required to submit a WLC assessment to the GLA at the following three stages: pre-application, outline/detailed planning submission and post-construction. Separate tabs are provided in this spreadsheet for each stage. An outline of the information required at each stage and how to submit it is provided below.

1. Pre-application stage

At pre-application stage, applicants are required to complete the pre-application information tab of this template to confirm various details about the site and to provide details of the WLC principles which are informing the development of the site. This should be submitted to the GLA along with all other pre-application material.

2. Outline/detailed planning submission stage

At this stage, applicants are required to complete the outline or detailed planning stage tab of this template (whichever is relevant) and submit it to the GLA along with their planning application. This stage of the process requires a baseline WLC assessment against each life-cycle module to be undertaken.

3. Post-construction stage

At the final stage of the WLC assessment process, applicants should complete the post-construction result tab of this template and submit it to the GLA prior to occupation of the development. This will require an update of the information provided at planning submission stage and for the actual WLC carbon emission figures to be reported using actual material quantities and site emissions during construction. Information should be submitted to:
ZeroCarbonPlanning@london.gov.uk

QUERIES

Any queries or feedback on this template should be submitted to:
ZeroCarbonPlanning@london.gov.uk

Project details	
Project name	
Planning application reference number (if applicable)	
Use Type	
Brief description of the project	
GIA (m^2)	
Authors (organisation or individuals)	
Date of assessment	

WLC reduction principles		Key benefits	Provide examples of how reduction principle has been used, or give reasons why it cannot be used.	
1	Reuse and retrofit of existing buildings	Significant retention and reuse of structures is carbon efficient and reduces construction costs.	Confirmation that options for retaining existing buildings and structures have been fully explored before considering substantial demolition	[Outline the options that have been considered - plus an explanation of opportunities and limitations, and why demolition outweighs the benefits of retaining existing buildings/structures where applicable]
			Carbon emissions associated with pre-construction demolition ($kgCO_2e$)	[If estimates are not possible, please apply standard assumption of $50kgCO_2e/m^2$ of the existing building/s]
			Estimate of the percentage of the new build development which will be made up of existing elements	[e.g. X% existing facades; Y% existing foundations; Z% superstructures etc.]
2	Use repurposed or recycled materials	Reduces waste and carbon emissions.		
3	Material selection	Appropriate material choices are key to carbon reduction. Ensuring that materials are selected with consideration of the planned life expectancy of the building reduces waste, the need for replacements and the in-use costs.		
4	Minimise operational energy use	A 'fabric first' approach should be prioritised to minimise energy demand and reduce carbon and in-use costs.		
5	Minimise the carbon emissions associated with operational water use	Choice of materials and durability of systems, which help to avoid leakage and subsequent building damage, contribute to reducing the carbon emissions of water use.		
6	Disassembly and reuse	Designing for future disassembly ensures that products do not become future waste and that they maintain their environmental and economic value.		
7	Building shape and form	Compact efficient shapes help minimise both operational and embodied carbon emissions from repair and replacement for a given floor area. This leads to a more efficient building overall resulting in lower construction and in use costs.		
8	Regenerative design	Removing carbon emissions from the atmosphere through materials and systems absorbing it makes a direct contribution to carbon reduction.		
9	Designing for durability and flexibility	Durability means that repair and replacement is reduced which in turn helps reduce life-time building costs. A building designed for flexibility can respond with minimum environmental impact to future changing requirements and a changing climate, thus avoiding obsolescence which also underwrites future building value.		
10	Optimisation of the relationship between operational and embodied carbon	Optimising the relationship between operational and embodied carbon contributes directly to resource efficiency and overall cost reduction.		
11	Building life expectancy	Defining building life expectancy gives guidance to project teams as to the most efficient choices for materials and products. This aids overall resource efficiency, including cost efficiency and helps future proof asset value.		
12	Local sourcing	Sourcing local materials reduces transport distances and supply chain lengths and has associated local social and economic benefits.		
13	Minimising waste	Waste represents unnecessary and avoidable carbon emissions. Buildings should be designed to minimise construction waste, and to ease repair and replacement with minimum waste, which helps reduce initial and in-use costs.		
14	Efficient construction	Efficient construction methods (e.g. modular systems, precision manufacturing and modern methods of construction) can contribute to better build quality, reduce construction phase waste and reduce the need for repairs in the post completion and the defects period (snagging).		
15	Lightweight construction	Lightweight construction uses less material which reduces the carbon emissions of the building as there is less material to source, fabricate and deliver to site.		
16	Circular economy	The circular economy principle focusses on a more efficient use of materials which in turn leads to carbon and financial efficiencies.		

Project details	
Project name	
Planning application reference number (if applicable)	
Site GIA (m²)	
Brief description of the project	
GIA (m²)	

Assessment de ails	
Authors (organ isation/ individual)	
Date of assessment	
Operational model ling (methodology) tool (Module D only)	e.g. SAP or TM5
Reference study period (f not 60 years)	?Th s sh ould only be f lled in f the reference study per od, i.e. the assumed bui ding .fe expectancy, exceeds or is less than 60 years. Appl cants shou d state the reference study per od in th s cell. Wh le the assessment shou d id l be done to 60 years, applicants may, if they choose to, submit an LCA that covers only the life cycle modules B, C and D, or the actual re mnine study per od by copying and pasting an addit onal "GWP potent al for all li fe cycle modules" table, see be ow]
Software tool used	
Type of EPDs and carbon database used	[If using more than one database please list a ll]
P ease confirm ? 90% of the cost allocated to each building element category has been accounted for in the assessment	[Yes, or please explain any omissions]
Explanation on of the third-party mechanisms wh ch have been adopted to ass ss aspects in t submitted	
P ease confirm whether you have submit ed th s assessment to the Built Environment Carbon Database (https://www.becd.co.uk) f you give perm ssion for the GLA to do this on your behalf	?Have submitted this assessment to the BECD [ ]
	?give permission for the GLA to submit th s assessment to the BECD on my behalf [ ]

Key	
	Data automatically calculated no direct input required
	Ce ls hat require information / data inputting
	N/A

stimated WLC emissions
N B. This forms the WLC base ine for the development. The green cel s = 0 automat cally populate from the tables be ow

	Module A1-A3 (excl uding sequestered carbon)	Modules B -C (excl BS & B7)	Modules A -C (exclud ng B6 B7, including sequestered carbon)	Modules B1 B5	Modu e B6 B7	Module C1 C4	Modu e D
O AL kg CO2	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	#VALUE!	0 kg CO2e	0 kg CO2e
O AL kg CO2e/m² GIA	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#VALUE!	#DIV/ 0!	#DIV/0!
Please se ect most appropriate benchmark from drop down menu	Res dential						
WLC Benchmark	850	<350	<1200				
Aep rational WLC Benchmark	500	<300	<800				
Comparison with WLC benchmarks (see Appendix 2 of the gu dance)	[Explain the reasons for any divergences from WLC benchmarks, including against the WLC aspirat onal benchmarks]						

Reten ion of existing buildings and structures	
Options that have been considered to reduce and maximise the re-use of existing structures before cons dering substantial demol t on	[Outline the options that have been considered - plus an explanat on of opportun ties and limi at ons, and why demoli ion /partial demoli ion has been chosen as the preferred option]
Carbon em ssions arising from the demolition of any structures on site (kgCO2e)	[If estimates are not possible, p ease apply standard assumpt on of 50kgCO2e/m² of the existing bu ilding/s]
Explana e of the percentage of the new build development which will be made up of exis ing s tructures	[e.g. X% existing facades; Y% existing foundations; Z% superstructures etc]

	Actions included in WLC assessment results reported	WLC reduction (kg CO2e/m² GIA)
Summary of how actions to reduce whole life cycle carbon emissions that have informed this assessment including the WLC reductions	[WLC tal does not need to be exhaus ive but should identify the actions / de ails that it could include. Insert more lines if needed]	

	Further potential opportunities	WLC reduction potent al (kg CO2e/ m² GIA)
Specify further opportunities to reduce the development s who e l fe cycle carbon emissions inc uding the WLC reduc tion potential	[Insert ins e lines as needed]	

MA ERIAL QUAN I Y AND END OF LIFE SCENARIOS		Product and Construction S age (Module A)		Assumptions made with respect to maintenance repair and rep acement cycles (Modu e B)	Material 'end of life' scenarios (Module C)	Benefits and loads beyond the system boundary (Module D)	
Building element category		Material type	Material quantity (kg)			Est mated reusable materials (kg)	Est mated recyclable materials (kg)
Redesignation		Breakdown of mate ial type in each ele ayjory [Insert ins e lines if needed]		For all prima y bu ilding sys ems (structure, substructure, envi ope, MEP services, internal finishes) including assumed material/product l fespans and annual maintenance/repair %	Declare end of l fe' scenar o as per project's Circu ar Economy Statement, and used in the WLC assessment to produce Module C results	0 kg	25 kg
		e.g. Reinforcement	6000 kg			0 kg	0 kg
		e.g. Formwork	250 kg			0 kg	0 kg
0.1	Demol tion, Toxic/Hazardous/Contaminated Ma erial Treatment						
0.2	Major Demol tion Works						
0.3	Temporary Support to Adjacent Structures						
0.	Sales at st Ground Works						
0.5	Temporary Diversion Works						
1	Substructure						
2.1	Superstructure: Frame						
2.2	Superstructure: Upper Floors						
2.3	Superstructure: Roof						
2.	Superstructure: S airs and Ramps						
2.5	Superstructure: External Wa ls						
2.6	Superstructure: Windows and External Doors						
2.7	Superstructure: Internal Wa ls and Part tions						
2.8	Superstructure: Internal Doors						
3	Finishes						
	FF&E						
5	Services (MEP)						
6	Prefab cated Bu ildings and Bu ilding Un ts						
7	Work to Ex s ting Bu ilding						
8	Ex ernal works						
Refrigerants		**Refrigerant name**	**Init al quantity/charge (kg)**	**Assumed annual eakage rate %**	**Refrigerant GWP (kgCO2e/ kg)**	**End of Life recovery rate %**	
a	Ref gerants T ype 1 (if applicable) – p ease see CIBSE TM65 for methods ogy						
b	Ref gerants T ype 2 (if applicable) – p ease see CIBSE TM65 for methods ogy						
c	Ref gerants T ype 3 (if applicable) – p ease see CIBSE TM65 for methods ogy						
	O AL	0 kg				0 kg	0 kg
	Material intens ty (kg/m2 GIA)	#DIV/0!				#DIV/ 0!	#DIV/0!

P ease add rows where more than 1 ma erial type exists per bu ding element category

P ease add rows f required

OHP TO EN IAL FOR ALL LIFE CYCLE MODULES (kgCO2e) (See Note 1 below if you entered a reference study period in cell C12)	Sequestered (or biogenic) carbon (negative value) (kgCO2e)	Product stage (kgCO2e)	Construction process stage (kgCO2e)	Use stage (kgCO2e)							End of Life (EoL) stage (kgCO2e)				O AL - Modules A -C kgCO2e	Benef ts and loads beyond the system boundary (kgCO2e)
		Modu e A		Module B							Module C					Module D
Building element category		[A1] to [A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]	[C1]	[C2]	[C3]	[C4]		
0.1	Demolition Toxic/Hazardous/Contaminated Ma erial Treatment											C is known, p ease				0 kg CO2e	
0.2	Major Demol tion Works											C is known, p ease				0 kg CO2e	
0.3	Temporary Support to Adjacent Structures											C is known, p ease				0 kg CO2e	
0.	Sales at st Ground Works											C is known, p ease				0 kg CO2e	
0.5	Temporary Diversion Works											C is known, p ease				0 kg CO2e	
1	Substructure											C is known, p ease				0 kg CO2e	
2.1	Superstructure: Frame											C is known, p ease				0 kg CO2e	
2.2	Superstructure: Upper Floors											C is known, p ease				0 kg CO2e	
2.3	Superstructure: Roof											C is known, p ease				0 kg CO2e	
2.	Superstructure: S airs and Ramps											C is known, p ease				0 kg CO2e	
2.5	Superstructure: External Wa ls											C is known, p ease				0 kg CO2e	
2.6	Superstructure: Windows and External Doors											C is known, p ease				0 kg CO2e	
2.7	Superstructure: Internal Wa ls and Part tions											C is known, p ease				0 kg CO2e	
2.8	Superstructure: Internal Doors											C is known, p ease				0 kg CO2e	
3	Finishes											C is known, p ease				0 kg CO2e	
	FF&E											C is known, p ease				0 kg CO2e	
5	Services (MEP)										Regulated emiss ons	Unregu ated em ssions	Operat onal Water	C is known, p ease		0 kg CO2e	
6	Prefab cated Bu ildings and Bu ilding Un ts											C is known, p ease				0 kg CO2e	
7	Work to Ex s ting Bu ilding											C is known, p ease				0 kg CO2e	
8	Ex ernal works											C is known, p ease				0 kg CO2e	
Total life cycle carbon emissions (kgCO2e)																0 kg CO2e	
	O AL kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	#VALUE!	Operational Water	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e
	O AL kg CO2e/m² GIA	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/ 0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Notes:
1 If you have entered a reference study period in cell C12 because the assumed building l fe expectancy a greater or ess than 60 years, then you v ll need to fi ll in this table using a 60 year bui ding l e expec ancy. If you choose to, you may create a second tab e below and comp ete it using the actual assumed .fe expectancy. Th s should be clearly labelled.

Project details	
Project name	
Planning appl ication reference number (if applicable)	
Use Class	
Brief description of the project	
GIA (m²)	

Key	
	Cells automatically calculated - no direct input required
	Cells that require information / data inputting
	N/A

Assessment de ails	
Author/ organisation of assessment	
Date of assessment	
Operational modelling methodology for Module B6 (energy)	e.g. SAP or TM5
Re ference study period (if not 60 years)	Th s ca l should only be f lled in f the reference study period, i.e. the assumed bui ding life expec ancy, exceeds or is less than 60 years. App icants should s ate the reference study period in th s cel l. Wh e the assessment should 60 be done to 60 years, app icants may, f they choose to, submit an addit onal assessment of the modules B, C and D for the actual reference study period by copying and pasting an addi tional GWP pa ern al for a l life-cyc e modules' table, see below).
Software tool used	Th s shou d align w th the software tool used at out ine planning stage).
Types of EPDs and carbon da abase used	If using more than one database please list a ll.
Please confirm if 60% of the cost al ocated to each bu ding element ca egory has been accounted for in the assessment	Yes / No)
Explanation of mechanisms wh ch have been adopted to qua ity assure the submiss on	
If ease confirm whether you have subm tted th s assessment to the Built Environment Carbon Database (https://www.bed ec.ac.uk/) or if you give permission for the GLA to do th s on your behalf by checking one of the following boxes	have submi ed th s assessment to the BECD
	give perm ssion for the GLA to subm t this assessment to the BECD on my behalf

ulimated WLC emissions N B tos forms the WLC baset ne for the development he green co le se l automatically populate from the tables below							
	Module A1 A5 (exc uding sequestered carbon)	Modules B C (exc l B6 & B7)	Modules A C (exc l B6 & B7) (=building sequestered carbon)	Modu e B1 B5	Modu e B6 B7	Module C1 C4	Module D
O AL kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	#VALUE!	0 kg CO2e	0 kg CO2e
O AL kg CO2e/m² GIA	#DIV/0!	#DIV/ 0!	#DIV/0!	#DIV/0!	#VALUE!	#DIV/ 0!	#DIV/0!
Please se ect most appropriate benchmark from drop down menu							
WLC Benchmark	#N/A	#N/A	#N/ A				
Aspirational WLC Benchmark	#N/A	#N/A	#N/ A				
Comparison with WLC benchmarks (see Appendi x 2 of the guidance)	Explain the reasons for any divergences from WLC benchmarks, including against the WLC aspirat ional benchmarks)						

Reten ion of existing buildings and structures	
Evidence on their options for retaining ex sting buildings and structures have been fully explored by considering subsidiari ty/ demol t on	Outline the options that have been considered - plus an explana ion of opportun ties and lim tat ions, and why demol tion outweighs the bene its of retaining existing bu dings/structu es where app icab e)]
Carbon emiss ons associated with pre-construction demo l t on (kgCO2e)	If estimates are not possible, please apply standard assumpt on of 50kgCO$_2$e/m^2 of the existing bu ldings's]
Extima e of the percen age of the new- bui d development wh ch will be made up of existing elemen s	e.g. X% existing facades; Y% ex sting foundat ons; Z% superstructures etc.]

Summary of key actions to reduce whole life cycle carbon emissions that have informed this assessment including the WLC reductions	Actions inc uded in WLC assessment results reported	WLC reduction (kg CO$_2$e/m^2 GIA)
	Th s ta ble does not need to be exhaustive but shou d desc ibe the actions with the biggest impac s. Insert more lines if needed]	

Specify further opportunities to reduce the development s who e l fe cycle carbon emissions ino sding the WLC reduc tion potential	Further potential opportunities	WLC reduction potential (kg CO$_2$e/m^2 GIA)

MA ERIAL QUAN I Y AND END OF LIFE SCENARIOS		Product and Construction Stage (Module A)		Assumptions made with respect to maintenance repair and rep acement cyc es (Mod e B)	Material end of l fe' scenarios (Module C)	Benefits and loads beyond the system boundary (Module D)	
Building element category		Mater al type	Ma erial quantity (kg)			Estimated reusable materials (kg)	Est mated recyclable materials (kg)
Notes/examples		Breakdown of material type in each category (insert more lines if needed) e.g. Concrete	60000 kg	For all primary bu ilding systems (structure, substructure, envelope, MEP services, internal finishes) including assumed mater al/product lifespans and annual maintenance/repair %	Des ans 'end of life' scenario as per project s Circular Economy Statement, and used in the WLC assessment to produce Modu e C results	0 kg	20 kg
		e.g. Reinforcement	5000 kg			2 kg	4 kg
		e.g. Fa rics s	2500 kg			0 kg	0 kg
0.1	Demol tion Toxic/Hazardous/Contaminated Ma erial Treatment						
0.2	Major Demol tion Works						
0.3	Temporary Support to Adjacent Structures						
0.4	Special Ground Works						
1	Substructure						
2.1	Superstructure: Frame						
2.2	Superstructure: Upper Floors						
2.3	Superstructure: Roof						
2.	Superstructure: S airs and Ramps						
2.5	Superstructure: External Wa ls						
2.6	Superstructure: Windows and External Doors						
2.7	Superstructure: Internal Wa ls and Part ions						
2.8	Superstructure: Internal Doors						
3	Finishes						
	Fittings, furnishings & equipment (FFE)						
5	Services (MEP)						
6	Prefabricated Bu ildings and Bu ilding Un ts						
7	Work to Ex s ing Bu ilding						
8	Ex ernal works						

Refrigerants		Refr gerant name	Init al Charge(kg)	Annual eakage rate %	Re r gerant GWP (kgCO$_2$e/kg)	End of L fe recovery rate %	
4	Refr gerants T ype 1 (if applicable) - p ease see CIBSE TM65 for methods rqr						
5	Refr gerants T ype 2 (if applicable) - p ease see CIBSE TM65 for methods rqr						
6	Refr gerants T ype 3 (if applicable) - p ease see CIBSE TM65 for methods rqr						
	O AL		0 kg			0 kg	0 kg
	Material intensity (kg/m2 GIA)		#DIV/ 0!			#DIV/ 0!	#DIV/0!

If ease add rows where more than 1 material type exists per building element categor y

If ease add rows if required

GWP PO EN IAL FOR ALL LIFE CYCLE MODULES (kgCO$_2$e/m²) (See Note 1 below if you entered a reference study period in cell C12)	Sequestered (or biogenic) carbon (negative value) (kgCO$_2$e)	Product stage (kgCO$_2$e)	Construction process stage (kgCO$_2$e)		Use stage (kgCO$_2$e)								End of Li e (EoL) stage (kgCO$_2$e)				O AL Modules A C kgCO$_2$e	Benefits and loads beyond the system boundary (kgCO$_2$e)
		Module A			Module B								Modu e C					
Building element category		[A1] to [A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]		[C1]	[C2]	[C3]	[C4]		Module D
0.1	Demol tion Toxic/Hazardous/Contaminated Ma erial Treatment												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
0.2	Major Demol tion Works												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
0.3	Temporary Support to Adjacent Structures												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
0.4	Special Ground Works												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
0.5	Temporary Diversion Works												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
1	Substructure												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2.1	Superstructure: Frame												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2.2	Superstructure: Upper Floors												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2.3	Superstructure: Roof												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2	Superstructure: S airs and Ramps												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2.5	Superstructure: External Wa ls												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2.6	Superstructure: Windows and External Doors												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2.7	Superstructure: Internal Wa ls and Part ions												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
2.8	Superstructure: Internal Doors												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
3	Finishes												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
	Fittings, furnishings & equipment												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
5	Serv ces (MEP)											Regu ated em ssions / Unregulated emiss ons / Opera tional Water	[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
6	Prefabricated Build ngs and Build ng Un ts												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
7	Work to Exist ng Bu ilding												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
8	External works												[Where only a single C1-C ta kdown, p ease include it here]				0 kg CO2e	
Other (i nsert/un ar ri ipate) or ins ignific ant emissions within [A5] (carbon emiss ons not expec ted to be a individual bui ding element ca egory)																	0 kg CO2e	
O AL kg CO2e		0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	#VALUE!	Operational Water		0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e
O AL kg CO2e/m²GIA		#DIV/0!	#DIV/ 0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#VALUE!	#VALUE!		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Notes:
1 F you have entered a reference study period in cell C12 because the assumed building l fe expectancy is greater or less than 60 years, then you w ll need to di it this table using a 60 year bui ding li e expec ancy. If you choose to, you may create a second tab e below and comp ete it using the actual assumed life expectancy. Th s should be clearly labelled.

Project details	
Project name	
Planning appl ication reference (numbe r if applicable)	
Site addre ss	
Brief description of the project	
GIA (m²)	

Key	
	Data automat ca lly calculated no direct input required
	Cells that require nformation / data inputting
	N/A

Assessment de ails	
Author (consultant or Architect)	
Qa ul ity assurance	
Assessment model (e.g. methodology tool, Module C-D inclusion)	e.g. SAP or TM5
Reference study period (f not 60 years)	[Th s ce l should only be f lled in if the reference study per od, i.e. the assumed bui ding life expectancy, exceeds or is less than 60 years. Appl cants should s ate the reference study period in this cell. If th s assessment shou d a ll be done to 60 years, applicants may, if they choose to, submit an addi tonal assessment of the modules B, C and D for the actual reference study pe iod by copying and pas ing an addi tonal 'GWP potent al for all l fe-cycle modules' table, see be ow].
Software tool used	[Th s should a ign with the so ftware tool used at out me/deta led planning stage]
Type of EPDs and carbon database used	[If using more than one database please list at a][
Please confirm 1 00% of the GIA d ecluded fr each bui ding element category has been accounted for in the assessment?	[Yes / No]
Explana tion of mechanisms which have been adopted to qua ify assure the submiss on	
Please confirm whether you have submi tted th s assessment to the Built Environment Carbon Database (https: //www.bsed.co.uk) i.e. if you give permission in the GLA to do th s on your behalf by checking one of the following boxes	have submitted this assessment to the BECD ☑
	give permission for the GLA to submit th s assessment to the BECD on my behalf ☑

List of product specific EPDs for products that have been installed	Product	EPD reference number
	[Please add rows if needed]	

Please confirm the following post construction evidence has been subm itted with this WLC assessment.	
Site energy (including fue l use) record	[Yes / No]
Confirma tion from the main contractor that as-built quantities and specifica tions are consistent with the WLC assessment	[Yes / No]
Record of mat erial de livery including distance travel led and transport at on mode	[Yes / No]
Waste transportation record include vehic le quantity, distance travel led and transport at on mode	[Yes / No]

WLC emissions baseline (automatica lly populated from the detailed planning stage' tab)	Module A1-A5 (excluding sequestered carbon)	Modules B-C (excl B6 & B7)	Modules A-C (excl B6 B7; including sequestered carbon)	Module B1 B5	Module B6 B7	Module C1 C4	Module D
☺ AL kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	#VALUE!	0 kg CO2e	0 kg CO2e
☺ AL kg CO2e/m² GIA	#DIV/0!	#DIV/ 0!	#DIV/0!	#DIV/0!	#VALUE!	#DIV/0!	#DIV/0!

Post construction WLC emissions	Module A1 A5	Modules B C (excl B6 & B7)	Modules A C (excl B6 B7; including sequestered carbon)	Module B1 B5	Module B6 B7	Module C1 C4	Module D
☺ AL kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	#VALUE!	0 kg CO2e	0 kg CO2e
☺ AL kg CO2e/m² GIA	#DIV/0!	#DIV/ 0!	#DIV/0!	#DIV/0!	#VALUE!	#DIV/0!	#DIV/0!
P ease se ect mount appropriate benchmark from drop down menu							
WLC Benchmark	#N/A	#N/A	#N/A				
Asp rational WLC Benchmark	#N/A	#N/A	#N/A				
Commen ary comparing the post construc tion rews ts against the WLC emissions baseline above	[Explain the reasons or any divergences from the results against the WLC emissions baseline above]						
Commentary comparing the post construction rews ts against the WLC benchmarks (see Appendix A)	[Explain the reasons or any divergences from WLC benchmarks, including against the WLC aspira onal benchma ks]						

Reten tion of existing buildings and structures	
Confirmation of whether existing building, buildings and structures that were under eligible for all p anning stages have been cop emented	
Actual carbon emissi ons associa ed with pre-construction demoli tion (kgCO2e)	
Estima e of the percen age of the new bui d development ch ch is made up of exis ing e lements	[e.g. X% existing facades; Y% existing foundations; Z% superst uctures etc]

Summary of key actions undertaken to reduce whole life cycle carbon emissions including the reductions achieved	Action undertaken	WLC reduction achieved (kg CO2e/m² GIA)
	[Th s tat does not need to be exhaus ive but shou d identify the actions with the b ggest impacts. Insert more lines if needed]	

Lessons learnt from the process of undertak ng a WLC assessment that will inform future projects	[e. Design options or ma erials that could be used, des gn princip es that could be applied. Insert more lines if needed]

6A ERIAL GUAN I Y AND END OF LIFE SCENARIOS	Product and Construction Stage (Module A)		Assumptions made with respect to maintenance mpa t and rep acement cycles (Module B)	Material 'end of life' scenarios (Modu e C)	Benefits and loads beyond the system boundary (Modu e D)	
Building element category	Material type	Material quantity (kg)			Estimated reusable materials (kg)	Estimated recyclab e materials (kg)
Notes/example	[Breakdown of mater al type in each category Insert more lines f needed] e.g. Concre e		For all primary bui ding sys ems (structure, substructu e, envelope, MEP services, inte nal finishes) including assumed material/product li espans and annual maintenance/repair %.	Deola e and of li e' scenario as per project's Circular Economy Statement, and used in the WLC assessment o produce Module C resu ts.		
	e.g. Reinforcement	50000 kg			0 kg	25 kg
	e.g. Formwork	250 kg			0 kg	0 kg
0.1	Demolition Toxic/Hazardous/Contaminated Ma erial Treatment					
0.2	Major Demoli tion Works					
0.3	Temporary Support to Adjacent Structures					
0	Spec al e Ground Works					
1	Substructure					
2.1	Superstructure: Frame					
2.2	Superstructure: Upper Floors					
2.3	Superstructure: Roof					
2	Superstructure: S airs and Ramps					
2.5	Superstructure: External Wa ls					
2.6	Superstructure: Windows and External Doors					
2.7	Superstructure: Internal Wa ls and Part tions					
2.8	Superstructure: Internal Doors					
3	Finishes					
	F ttings, furnishings & equipment (FFE)					
5	Services (MEP)					
6	Prefabr cated Bu ildings and Bu ilding Un ts					
7	Work to Ex s ing Bu ilding					
8	Ex ernal works					
Refrigerants	Refrigerant name	Ini ial Charge(kg)	Annual leakage rate %	Refrigerant GWP (kgCO2e/kg)	End of Life recovery rate %	
a	[If gerants Type 3 (if applicable) (i.e ease see CIBSE TM65 for methodology)					
b	[If gerants Type 2 (if applicable) (i.e ease see CIBSE TM65 for methodology)					
c	[If gerants Type 3 (if applicable) (i.e ease see CIBSE TM65 for methodology)					
	☺ AL	0 kg			0 kg	0 kg
	Material intensity (kg/m2 GIA	#DIV/0!			#DIV/0!	#DIV/0!

Key

Please add rows where more than 1 material type exists per bu ilding e ement category

Please add rows if required

GWP PO EN IAL FOR ALL LIFE CYCLE MODULES (kgCO2e) (See Note 1 below if you entered a re erence study period n cell C12)	Sequestered (or biogenic) carbon (negative value) (kgCO2e)	Product stage (kgCO2e)	Construction process stage (kgCO2e)	Use stage (kgCO2e)							End of L fe (EoL) stage (kgCO2e)				☺ AL Modules A C (kgCO2e)	Bene its and loads beyond the system boundary (kgCO2e)
		Module A		Module B							Modu e C					Modu e D
Building element category		[A1] to [A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]	[C1]	[C2]	[C3]	[C4]	
0.1	Demolition Toxic/Hazardous/Contaminated Ma erial Treatment											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
0.2	Major Demoli tion Works											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
0.3	Temporary Support to Adjacent Structures											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
0	Spec al e Ground Works											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
0.5	Temporary Diversion Works											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
1	Substructure											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2.1	Superstructure: Frame											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2.2	Superstructure: Upper Floors											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2.3	Superstructure: Roof											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2	Superstructure: S airs and Ramps											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2.5	Superstructure: Exte nal Wa ls											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2.6	Superstructure: Windows and External Doors											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2.7	Superstructure: Internal Wa ls and Part tions											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
2.8	Superstructure: Internal Doors											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
3	Finishes											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
	F ttings, furnishings & equipment											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
5	Services (MEP)				Regulated emiss ons		Unregulated emiss ons		Operat onal Wate			[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
6	Prefabr cated Bu ildings and Bu ilding Un ts											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
7	Work to Ex s ing Bu ilding											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
8	Ex ernal works											[Where only a single C1 C ta kdown, please include it here]				0 kg CO2e	
[Other bdy construct on impacts or events / construc tion stage [A5] carbon emissions not typical to the individual bui ding element category]																0 kg CO2e	
☺ AL kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	#VALUE!	Operational We er	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e	0 kg CO2e
☺ AL kg CO2e/m² GIA	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/ 0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Notes:

If you have entered a re erence study per od in ce l C12 because the assumed bui ding li expec ancy is greater or less than 60 years, then you will need to fi l in this tab e using a 60 year building l fe expectancy. If you choose to, you may crea e a second table belov and complete t using the actual assumed l e expectancy. This should be e early labe led.

Available benchmarks
Offices
Residential
Schools, Universities etc.
Retail

WLC benchmark	**A1-A5**	**B-C (excl B6 & B7)**	**A-C (excl B6 & B7)**
Offices	<950	<450	<1400
Residential	<850	<350	<1200
Schools, Universities etc.	<750	<250	<1000
Retail	<850	<200	<1050

Aspirational WLC benchmark	**A1-A5**	**B-C (excl B6 & B7)**	**A-C (excl B6 & B7)**
Offices	<600	<370	<970
Residential	<500	<300	<800
Schools, Universities etc.	<500	<175	<675
Retail	<550	<140	<690

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City of Westminster