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2015 REAL ESTATE ENVIRONMENTAL BENCHMARKS

What is the Real Estate Environmental Benchmark?

The Real Estate Environmental Benchmark (REEB) is a publicly available operational benchmark of environmental performance for commercial property in the UK. It is one of the only benchmarks based on the performance of buildings 'in-use' and is increasingly becoming the 'industry standard' used by investors, fund managers and property owners to compare the performance of their assets with other similar assets from portfolios across the UK.

Based on the annual consumption data of the BBP members' property portfolios we provide energy, carbon, water and waste performance benchmarks for offices, shopping centres, retail / leisure parks and offices which others can use to compare the performance of their own buildings.

The REEB benchmarks available in the following pages provide one of the most up to date reflections of industry performance – the benchmarks are based on a 3 year rolling average and are updated each year.

Anyone seeking to understand the performance of their assets relative to the REEB benchmark can use the publicly available methodologies to calculate their performance and compare it to the benchmarks.

The REEB dataset is one of the most comprehensive concerning performance in-use and, with the permission of our members, the data is made available on an anonymous basis to support a wide range of research projects in this important field.

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Key

NLA - Net Lettable Area
CPA - Common Parts Area

The benchmarks in the following pages are based on data provided up to the 31st March 2015.

1. Energy benchmarks

Offices

	Air-conditioned		Naturally ventilated*	
	Good practice	Typical practice	Good practice	Typical practice
£ / sq m NLA / year	£20.48	£29.65	£9.58	£18.15
£ / sq ft NLA / year	£1.90	£2.75	£0.89	£1.69
Energy (kWh Electricity equivalent / sq m NLA / year)	222	294	88	187
Electricity (kWh / sq m NLA / year)	179	253	68	139
Fuels & thermals (kWh / sq m NLA / year)	63	112	84	124

* limited sample size

Enclosed Shopping Centres

	Air-conditioned		Non-air conditioned	
	Good practice	Typical practice	Good practice	Typical practice
£ / sq m CPA / year	£9.77	£14.55	£8.17	£13.24
£ / sq ft CPA / year	£0.91	£1.35	£0.76	£1.23
Energy (kWh Electricity equivalent / sq m CPA / year)	100	150	81	129
Electricity (kWh / sq m CPA / year)	88	129	73	117
Fuels & thermals (kWh / sq m CPA / year)	21	38	20	36

Unenclosed Shopping Centres

	Good practice	Typical practice
£ / sq m NLA / year	£0.37	£0.71
£ / sq ft NLA / year	£0.03	£0.07
Energy (kWh Electricity equivalent / sq m NLA / year)	3.5	6.1
Electricity (kWh / sq m NLA / year)	3.0	6.0
Fuels & thermals (kWh / sq m NLA / year)	2.0	3.0

Retail car parks

	Open Typical practice	Covered Typical practice	Enclosed Typical practice
£ / car park space / year	£11.02	£50.28	£50.23
Electricity (kWh / car park space / year)	106	484	483

Methodology

- Typical practice = median (50th percentile),
- Good practice = best performing quartile (25th percentile)
- Benchmarks are calculated from the average of the most recent three years of data; based on properties for which at least three years of validated data are available within the last five years.
- Electricity equivalent (kWh_e) = kWh of electricity equivalent. Electricity 'equivalence' is calculated using the ratio of carbon intensities between each fuel and electricity. It combines into kWh of electricity equivalent, measuring the amount of electricity used and adding an equivalent amount to account for any other fuels used. Electricity = 1, fuels = 0.4 and thermals = 0.5.
- Costs (£) are based on 2014 UK industry electricity and natural gas prices from the European Commission and are exclusive of taxes and levies. Electricity prices are based on annual consumption levels of >500 MWh and <2,000 MWh. Gas prices are based on consumption levels of >10,000 GJ and < 100,000 GJ.
- Fuels and thermal energy consumption for heating is adjusted for weather.
- All energy consumption is adjusted to the survey norm of hours of operation.

Offices

- The benchmarks are based on whole building data only. Buildings that submit only part building consumption are excluded.
- The benchmarks are based on offices which have an average annual occupancy rate of 75% or more in all three of the years of validated data. It is recognised that it may be advantageous to adjust the KPI for occupancy. This may be introduced in the future, once an agreed methodology can be adopted by the initiative.
- It is recognised that whole building energy intensity using NLA as the denominator is, to an extent, a mismatch between numerator and denominator (NLA as opposed to GIA with whole building energy) but this is the most consistently available and accurate denominator.

Retail

- Shopping centre (enclosed and un-enclosed) data excludes occupier and car park energy consumption where metering allows.
- It is recognised that NLA for un-enclosed shopping centres is a mismatch between numerator and denominator (NLA as denominator with landlord shared services for use in common and predominantly unenclosed areas) but in the absence of a more suitable denominator that is consistently available and accurately recorded by participants this is seen as the best alternative.
- It is important to not compare properties that are in different categories. These may not be comparable for a number of reasons, in particular that the denominators used in the KPIs for different retail properties are very different.

Sample size

Total number of properties are those included in the UK benchmarking database. There are strict quality control protocols to ensure the Benchmark is robust. Properties are only included in the Benchmark once we have three years' or more of validated data (from last five years), and they meet the assumptions outlined above. The dataset will grow as we update the Benchmark annually.

- Office air-conditioned: total = 508, included = 185, excluded = 323
- Office naturally ventilated: total = 99, included = 25, excluded = 74
- Retail enclosed air-conditioned: total = 68, included = 37, excluded = 31
- Retail enclosed non air-conditioned: total = 74, included = 53, excluded = 21
- Retail un-enclosed: total = 160, included = 66 , excluded = 94
- Retail car parks:
 - Open: total = 77, included = 6, excluded = 71
 - Covered: total = 22, included = 14, excluded = 8
 - Enclosed: total = 15, included = 4, excluded = 11

2. Waste benchmarks

Offices

	Proportion by weight	
	Good practice	Typical practice
Segregated on-site sent for recycling, re-use or composting	52%	41%
Direct-to-landfill averted	100%	100%

Retail

	Proportion by weight	
	Good practice	Typical practice
Segregated on-site sent for recycling, re-use or composting	59%	51%
Direct-to-landfill averted	100%	99%

Methodology

- Typical practice = median (50th percentile),
- Good practice = best performing quartile (25th percentile)
- Benchmarks are calculated from the average of the most recent three years of data; based on properties for which at least three years of validated data are available within the last five years.
- Data are based on those provided by weight only – proportion by disposal route of total waste quantity per year.

Sample size

Total number of properties are those included in the UK benchmarking database. There are strict quality control protocols to ensure the Benchmark is robust. Properties are only included in the Benchmark once we have three years' or more of validated data (from last five years), and they meet the assumptions outlined above. The dataset will grow as we update the Benchmark annually.

- Office: total = 307, included = 80, excluded = 227
- Retail: total = 187, included = 65, excluded = 122

3. Water benchmarks

Offices

	Good practice	Typical practice
£ / sq m NLA / year	£0.90	£1.40
£ / sq ft NLA / year	£0.08	£0.13
Litres / person / working day	28	41
Litres / sq m NLA / year	448	700

Enclosed retail

	Good practice	Typical practice
£ / sq m CPA / year	£1.02	£1.96
£ / sq ft CPA / year	£0.09	£0.18
Litres /visit	0.72	1.30
Litres /sq m CPA / year	509	979

Unenclosed retail

	Good practice	Typical practice
£ / sq m NLA / year	£0.06	£0.21
£ / sq ft NLA / year	£0.006	£0.019
Litres /visit	0.14	0.37
Litres / sq m NLA / year	32	103

Methodology

- Typical practice = median (50th percentile),
- Good practice = best performing quartile (25th percentile)
- Benchmarks are calculated from the average of the most recent three years of data; based on properties for which at least three years of validated data are available within the last five years.
- Costs (£) are based on the average unit (m³) costs of fresh and waste water – from published rates of 10 major water companies across the UK.
- Denominator for offices: persons = workers based on best available of either FTEs (full time equivalents) or actively used workstations. Working days = 260 per year.

Sample size

Total number of properties are those included in the UK benchmarking database. There are strict quality control protocols to ensure the Benchmark is robust. Properties are only included in the Benchmark once we have three years' or more of validated data (from last five years), and they meet the assumptions outlined above. The dataset will grow as we update the Benchmark annually.

- Office (per square m): total = 420, included = 147, excluded = 273
- Office (per person): total = 420, included = 116, excluded = 304
- Enclosed retail (per square m): total = 105, included = 63, excluded = 42
- Enclosed retail (per visit): total = 105, included = 57, excluded = 48
- Un-enclosed retail (per square m): total = 64, included = 23, excluded = 41
- Un-enclosed retail (per visit): total = 64, included = 14, excluded = 50