



# BRE Waste Benchmark Data

Issued 23<sup>rd</sup> July 2010

## Background to benchmark data

The benchmarks shown in this document are derived from data entered on the benchmarking website<sup>1</sup> and data from BRE's SMARTStart tool, together with data from completed projects on the SMARTWaste Plan.

The benchmarks are based on completed **new build** construction projects. The benchmarks are also based on the construction phase only and do not include demolition, excavation or groundworks waste, i.e. waste entered on SMARTWaste Plan that arises from groundworks or excavation and all soil waste has been excluded. Benchmarks for refurbishment and demolition projects will be developed in the future as more of these projects are completed.

Data obtained from completed projects was subject to a number of logical and statistical tests, to ensure that the data used to produce the performance indicators (KPI) is valid.

Initially all projects that meet the following criteria were selected.

- The floor area must be greater than 1 m<sup>2</sup>.
- The waste volume must be more than 1 m<sup>3</sup>.
- The project value must be greater than £1.

The performance indicators of m<sup>3</sup> waste per 100 m<sup>2</sup> floor area and m<sup>3</sup> waste per £100K project value were calculated for these projects. For new build construction projects, the distribution of these two performance indicators was found to be not normal with a very large range. Therefore, in order to try and exclude projects that had very low or very high performance indicators which might not be reliable, it was decided that only projects with performance indicators that fall between the 5<sup>th</sup> percentile and the 95<sup>th</sup> percentile would be used for further analysis.

The m<sup>3</sup>/100m<sup>2</sup> and m<sup>3</sup>/£100K performance indicators are based on actual volumes of waste arising.

For projects that passed these logical tests, a count of the number of plausible results, the average, standard deviation and median of the results was obtained. This data analysis is carried out every three months and the results are published in this document which is available from the benchmarking page of the SMARTWaste website ([www.smartwaste.co.uk/page.jsp?id=37](http://www.smartwaste.co.uk/page.jsp?id=37)).

The benchmarks in the table below show the average m<sup>3</sup> of waste per 100m<sup>2</sup> of floor area and the average m<sup>3</sup> of waste per £100K of project value for different project types. The number of projects used to calculate the benchmarks is also shown.

---

<sup>1</sup> The benchmarking website was developed as part of a DEFRA funded project 'Understanding and predicting construction waste' and is available at [www.smartwaste.co.uk/wastebenchmarking](http://www.smartwaste.co.uk/wastebenchmarking)

## Waste Benchmark Data by Project Type (New Build Only)

Updated on 31<sup>st</sup> May 2010

Project Type	Number of projects data relates to	Average m <sup>3</sup> /100m <sup>2</sup>	Number of projects data relates to	Average m <sup>3</sup> /£100K
Residential	307	16.4	302	12.7
Public Buildings	18	24.8	19	11.1
Leisure	27	15.5	25	9.3
Industrial Buildings	21	17.4	22	12.3
Healthcare	45	15.1	41	9.4
Education	133	19.3	134	9.4
Commercial Other	8	9.9	9	9.2
Commercial Offices	48	18.3	47	9.5
Commercial Retail	68	21.9	74	17.2
<b>Total number of projects</b>	<b>675</b>		<b>673</b>	