



BRE Waste Benchmark Data

Issued 15th January 2010

Background to benchmark data

The benchmarks shown in this document are derived from data entered on the benchmarking website¹ 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 m².
- The waste volume must be more than 1 m³.
- The project value must be greater than £1.

The performance indicators of m³ waste per 100 m² floor area and m³ waste per £100K project value were calculated for these projects. Where these were very low (<5) or very high (>75) the project administrators were contacted to confirm that the project was not a test project and that all project details were correct. Where further information could not be obtained from the project administrators, these projects were excluded. The remaining projects were then used to carry out an analysis of the distribution of these two performance indicators.

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 5th percentile and the 95th percentile would be used for further analysis.

The m³/100m² and m³/£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).

The benchmarks in the table below show the average m³ of waste per 100m² of floor area and the average m³ of waste per £100K of project value for different project types. The number of projects used to calculate the benchmarks is also shown.

¹ 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



Waste Benchmark Data by Project Type (New Build Only)

Updated on 30 November 2009

Project Type	Number of projects data relates to	Average m ³ /100m ²	Number of projects data relates to	Average m ³ /£100K
Residential	226	16.31	223	13.98
Public Buildings	13	18.28	13	8.31
Leisure	20	14.16	17	9.43
Industrial Buildings	12	5.57	13	11.53
Healthcare	31	15.42	29	9.20
Education	89	19.97	95	8.87
Commercial Other	7	22.83	7	12.34
Commercial Offices	42	16.83	42	12.07
Commercial Retail	40	16.40	43	20.68
Total number of projects	480		482	