



BRE Waste Benchmarking Data

Issued 31 August 2008

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. As projects on the SMARTWaste Plan tool are completed these will also be included.

The benchmarks are based on completed **new build** construction projects. The benchmarks are based on the construction phase only and do not include demolition, excavation or groundworks waste. Benchmarks for refurbishment and demolition projects will be developed in the future as more of these projects are completed.

Before inclusion in the data analysis, data for all completed projects was subjected to a number of logical and statistical tests as follows:

For $\text{m}^3/100\text{m}^2$, the data was excluded if:

- the gross internal floor area was less than 10m^2
- the waste produced was less than 10m^3
- there was less than 5m^3 waste per 100m^2 of gross internal floor area
- there was more than 75m^3 waste per 100m^2 of gross internal floor area.

For $\text{m}^3/£100\text{K}$, the data was excluded if:

- the project value was less than £100
- the waste produced was less than 10m^3
- there was less than 5m^3 waste per £100K of gross internal floor area
- there was more than 75m^3 waste per £100K of gross internal floor area.

The tonnes/ 100m^2 and tonnes/£100K benchmarks were calculated by applying density factors to the $\text{m}^3/100\text{m}^2$ and $\text{m}^3/£100\text{K}$ figures respectively. The density factors (tonnes/ m^3) used have been derived from the Environment Agency review of Construction and Demolition waste arisings².

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 two 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 shown in this document is the average m^3 of waste per 100m^2 of floor area and the average m^3 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

² Environment Agency : A survey on the arisings and management of Construction and Demolition waste in Wales 2005-06, published 2008, http://www.environment-agency.gov.uk/commondata/acrobat/cd_wls_exec_e_1987304.pdf



Waste Benchmarking Data by Project Type (New Build Only)

Updated on 31 August 2008

| Project Type | Number of projects data relates to | Average m ³ /100m ² | Number of projects data relates to | Average m ³ /£100K |
|---------------------------------|------------------------------------|---|------------------------------------|-------------------------------|
| Residential | 116 | 15.2 | 112 | 18.3 |
| Public Buildings | 6 | 26.1 | 8 | 22.2 |
| Leisure | 3 | 12.3 | 5 | 20.6 |
| Industrial Buildings | 5 | 20 | 5 | 11.3 |
| Healthcare | 14 | 15 | 12 | 13.4 |
| Education | 20 | 13.4 | 21 | 17.3 |
| Commercial Retail | 24 | 20.1 | 22 | 14.9 |
| Commercial Offices | 27 | 15 | 24 | 10.4 |
| Civil Engineering | 9 | 24.3 | 6 | 20.3 |
| Total number of projects | 224 | | 215 | |