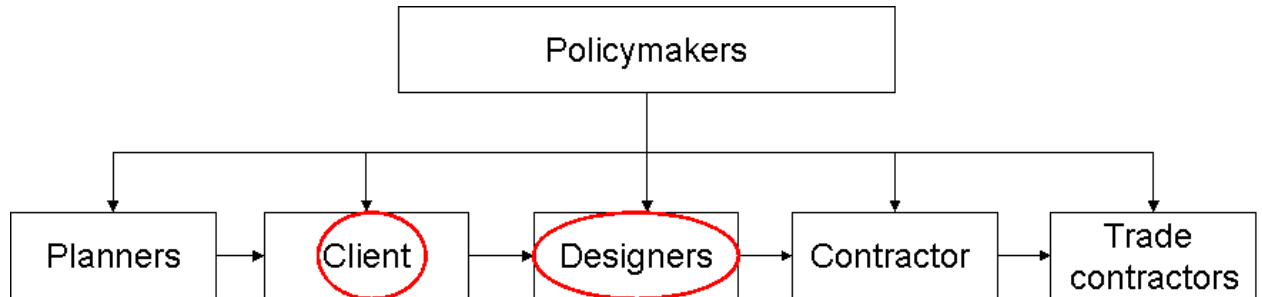


Annex 6: Client and designers – how the data can be used

This Annex accompanies the SID5 report for the Defra funded project 'Understanding and Predicting Construction Waste' (WR0111). This Annex gives details of how the data collected and analysed can be used by clients and designers for a construction project to influence waste reducing activities and initiatives.



Summary of project

Defra has funded BRE to collect and analyse data for construction waste. Data have been collected through a benchmarking website and BRE's SMARTStart system (part of the SMARTWaste system) where users can enter data for their construction project. Mandatory data that must be entered for projects include the project type e.g. residential, commercial offices etc, floor area, project value, location and type and amount of waste generated. The data collected have been statistically analysed and key performance indicators (KPIs) have been produced and are updated bimonthly. The KPIs are:

- Volume of waste (m³)/ 100m² of gross internal floor area
- Tonnes of waste / 100m² of gross internal floor area
- Volume of waste (m³)/ £100,000 of project cost
- Tonnes of waste /£100,000 of project cost
- % and amount (volume/tonnes) segregated on site

These KPIs are broken down by the type of waste and project. They are currently available for new build construction projects; KPIs are being developed for refurbishment and demolition projects. Data collected through BRE's free SMARTWaste Plan tool (for Site Waste Management Plans) will continue to be analysed to generate more KPIs.

Understanding and Predicting Construction Waste (WR0111)

The data

KPIs as of 31/08/08 are shown below for different project types.

Project Type	Average m ³ /100 m ²	Average m ³ /£100K
Residential	15.3	18.3
Public Buildings	26.1	22.2
Leisure	12.3	20.6
Industrial Buildings	20	11.3
Healthcare	15	13.4
Education	13.4	17.3
Commercial Offices	20.1	14.9
Commercial Retail	15	10.4
Civil Engineering	24.3	20.3
Overall Average	16.4	16.8

These data are further broken down into waste product type; this is shown for *residential* projects below:

Description	Residential (m ³ /100m ²)	Residential (m ³ /£100K)
Canteen/office/ad-hoc	1.73	1.79
Ceramics/bricks	1.44	2.06
Concrete	1.90	3.26
Electrical equipment	0.15	0.08
Furniture	0.08	0.03
Hazardous	0.06	0.02
Inert	0.67	1.34
Insulation	1.09	1.39
Liquids and Oils	0.05	0.01
Metals	0.59	0.48
Packaging	2.71	3.23
Plaster/cement	1.87	1.84
Plastics	1.05	1.25
Timber	1.89	1.54
Total	15.3	18.3

Where enough datasets exist, the data has been split to provide KPIs for standard, good and best practice. The table below shows these benchmarks for *residential* projects.

Benchmarks for Residential Projects	m ³ /100m ²	Tonnes/100m ²
Best Practice (Lower Quartile)	<9.0	<4.7
Good Practice	9.0 - 12.9	4.7 – 6.7
Standard Practice	>12.9	>6.7

How the data can be used

These data can be used by all parts of the supply chain. For clients and designers the data can be used in the following ways:

Design/procurement

- Set targets for waste reduction and recovery (a requirement for the Code for Sustainable Homes)
- Work with designers and suppliers to design out and reduce key wastes e.g. packaging
- Use data to help with tender design and evaluation
- Move from standard to best practice

Construction

- To forecast type and amount of waste produced (a requirement of Site Waste Management Plans)
- Means to monitor performance of contractors

Client company level

- Set targets for waste reduction and recovery for your projects
- Benchmark performance across the company (if more than one project)
- Aids with Corporate Social Responsibility and Environmental Management Systems

The benefits

Benefits of clients and designers using these data include:

- Compliance with the Site Waste Management Plan Regulations in England (by helping with forecasting)
- Provides data to set resource efficiency targets for construction waste for company policies and standards such as the Code for Sustainable Homes
- Encourages a partnership approach to construction waste
- Cost savings through less waste produced and better waste management
- Aid with market position and positive PR
- Provide evidence of sustainability to key stakeholders
- Help with local planning policies

Further information

- Please go to www.smartwaste.co.uk to see the updated benchmarks or email: smartwaste@bre.co.uk for more information.
- You can register for BRE's free SMARTWaste Plan tool at www.smartwaste.co.uk. A calculator for forecasting the amount and type of waste is available as part of the tool based on this data. SMARTWaste Plan can be used to write and implement Site Waste Management Plans.
- For more information on Site Waste Management Plans and Construction Waste see www.defra.gov.uk/constructionwaste
- For more information on Defra's Waste and Resources Evidence Programme see www.defra.gov.uk