



**PATHWAY TO  
ZERO WASTE**  
The fast track to smarter  
resource use

## CASE STUDY: WILLMOTT DIXON'S PATHWAY TO ZERO WASTE

Willmott Dixon Construction is one of the UK's largest privately owned construction firms. Providing a full range of services covering every stage of the construction process, it is able to provide end-to-end control on behalf of its clients. The company is widely recognised as leading in the development and delivery of best practice approaches and is at the forefront of the construction sector's drive to improve on environmental issues, including waste reduction. Willmott Dixon puts sustainability at the heart of its operations.

*"Our future commercial success depends on us getting the sustainable development agenda right. All of our people have a part to play in bringing sustainability to the heart of everything we do. Taking a leadership role in the built environment will help us to stand out from the crowd."*

**John Frankiewicz,  
Chief Executive Officer,  
Willmott Dixon Ltd**

In 2008, 213,166m<sup>3</sup> of construction, demolition and excavation waste left Willmott Dixon's sites. Enough waste to fill a building the area of a football pitch 18 storeys high. Over 70% of this waste was successfully diverted from landfill.\*

### Waste reduction - objectives and targets

Willmott Dixon has developed corporate objectives covering a number of environmental issues. These form part of its sustainable development plan which details a long term commitment to continuously improving its environmental performance.

Waste reduction is one of the areas where Willmott Dixon has made, and continues to make, significant progress. By 2012, it aims to send zero waste to landfill, helping the environment save precious resources.

To allow Willmott Dixon to measure the progress it has made against its long term environmental aspirations, it sets annual objectives and targets based on key performance indicators. Performance is publicly reported, with new targets defined and announced for the coming year.

### 2009 objectives & targets

- ▶ Implement a Sustainable Material Procurement Policy
- ▶ Divert at least 80% of waste from landfill
- ▶ Implement the WRAP (Waste & Resources Action Programme) Recycled Content Toolkit on at least 30% of projects
- ▶ Use at least 20% recycled content by project value
- ▶ Reduce waste generated on site during construction to 45m<sup>3</sup> per £100,000 of project value

\* % diverted from landfill calculations are based on WRAP guideline recovery rates. Figures may be subject to change depending on availability of actual performance from waste contractors.



**WILLMOTT DIXON  
CONSTRUCTION**

## Willmott Dixon's environmental management system

Since July 2005 all of Willmott Dixon's sites have monitored environmental key performance indicators (eKPIs) on waste as well as energy, carbon and water.

The eKPIs have been developed in line with benchmark standards developed by Constructing Excellence (the industry body charged with driving change and improving performance).

### Willmott Dixon construction waste eKPI performance 2007/8

111 construction sites operational during 2008 generated 213,166m<sup>3</sup> of waste from construction, demolition and excavation activities.

Willmott Dixon significantly improved on its 2007 score of 78.4m<sup>3</sup> of waste produced per £100k of project value, with average waste of 49.3m<sup>3</sup> per £100k.

Willmott Dixon asks its clients to provide monthly scores on sites' impact on the environment. A minimum score of seven out of ten is expected to be achieved each month, with a score below this requiring one of Willmott Dixon's environmental managers to visit the site to discuss and resolve any issues. On average sites score above eight out of ten and of 644 client scores relating to 'impact on environment', a score of less than seven was received only twice, at the same site.

	eKPI Waste (m <sup>3</sup> /£100k)	% Waste diverted from landfill in the South East
2008 score	49.3	71.5
2008 target	70	70
2007 score	78.4	60.4

## Procuring and managing materials



In 2007, following its membership of the Government's Sustainability Procurement Task Force, Willmott Dixon evaluated the sustainability of its procurement processes and performance.

As a result of this, the company has developed a **Materials Guidance Document** - which forms part of Willmott Dixon's **Sustainable Material Procurement Policy**, soon to be enforced across its supply chain. The policy is being adopted to ensure Willmott Dixon and its supply chain

procure materials in a way that improves sustainable performance, for example by increasing the reuse and recycled content of materials, or by only specifying the use of sustainably sourced timber. It details the standards to be adopted for the procurement of sixteen material streams, including timber, dense block, bricks, aggregates, paint and refrigerants. These minimum standards have been implemented for directly purchased materials since March 2008.

Willmott Dixon has also introduced a **Ten Point Sustainable Project Criteria** which all sites are targeted to achieve. One of these criteria is to achieve increasing recycled content within construction projects; the target for compliance in 2009 being 20%, increasing to 25% in 2010. A project's recycled content is measured and increased through use of WRAP's Recycled Content Toolkit and Net Waste Tool, by reviewing quick wins and identifying best practice materials, and implementing where practicable.



## Monitoring and managing waste

In 2007, Willmott Dixon calculated the true cost of its waste management practices at around £10 million. £1m was spent on hiring skips and disposing of their contents; a similar amount - £700,000 - was the labour cost for handling the material that went into the skips. The biggest cost by far, £8.3m, was the value of the material that was disposed of.

Willmott Dixon's findings were entirely consistent with research carried out by WRAP, which found that once the value of the materials wasted and labour costs of handling it are factored in, the real cost of disposal can be ten times more than many construction companies realise.



Skip hire	£215.00
Labour to fill the skip	£42.50
Cost of materials in the skip	£504.70
VAT (15%)	£114.13

**Total Cost**  
**£876.53**

- ▶ Willmott Dixon has been implementing Site Waste Management Plans on all new sites since July 2007, nine months ahead of the legal requirement to do so. These provide a structure for systematic waste management at all stages of a project's delivery. Consultation with pre-construction and site teams has enabled the company to develop a robust system to predict, effectively manage and measure waste.
- ▶ To ensure continued improvement and compliance, more than 130 employees have undergone training to ensure each of its sites has at least one waste champion. Over 70 pre-construction employees also received Site Waste Management Plan training.
- ▶ During 2007 and 2008 Willmott Dixon worked with WRAP to develop its Net Waste Tool, piloting the method at Chessington Community College in Surrey. The tool provides a holistic way to assess resource by considering both the waste generated by a project and the extent to which extra recovered material has been used. When the value of the recycled content of the materials used on a project equals the value of waste leaving the site then the project has zero net waste.

*"We believe that we are collecting some of the most detailed waste data in the construction industry, through assessment of the materials disposed of in mixed and segregated skips as they leave site. In addition, our study on the ecological footprint of a typical skip allows us to understand the environmental and carbon impact of the materials we are wasting."*

Richard James, Sustainable Development Assistant, Willmott Dixon



## Effective waste management in practice

At Reading Special Education Needs School Willmott Dixon segregated more than 48% of waste on-site for recycling, leading to more than 84% of the total waste generated being diverted from landfill.

Careful attention was taken to the true cost of waste. By considering potential skip costs based on previous experience and data, allocating 30% of the waste champion's time to waste management activities and budgeting for labour and prelims cost, the site team estimated savings of £20,000 over the duration of the project.

Waste segregation on site was monitored using CCTV to ensure operatives did segregate waste correctly and offenders carried out subsequent remedial removal.

# Willmott Dixon's 'easy wins' to achieving greater resource efficiency

## 1. Monitor your waste



Get a process in place to establish and monitor how much waste is going to landfill. Effective data collection is essential to make informed waste predictions - a requirement for all Site Waste Management Plans.

*As a result of Willmott Dixon's system for collating data and monitoring its waste it has been able to divert 72.2% of waste leaving site from landfill.\**

## 2. Investigate your supply chain



Make sure your supply chain has the right systems in place for managing waste.

*On investigating a waste services provider, Willmott Dixon found that although the contractor had advised that all timber was recycled, the visit uncovered that the timber was actually going to landfill. Willmott Dixon has now implemented a detailed waste audit that is carried out before a waste contractor can be used.*

*Last year its Cobham region management trainees visited a number of waste management contractors, to understand the importance of knowing where waste is going, and the different performance between contractors.*

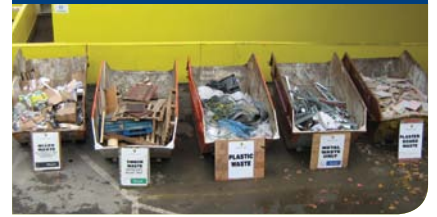
## 3. Empower your own supply chain



Encourage your supply chain to come forward with new ideas on how things could be done more effectively.

*Brockville, one of Willmott Dixon's painting contractors came to them with details of Crown's paint tin recycling initiative, where Crown would pick up the empty paint tins from sites, and then take them to be recycled, producing a plastic material that can be used to produce street furniture. This idea was trialed at the Epsom Grandstand project, and Willmott Dixon are currently awaiting delivery of a bench that has been produced out of the paint tins!*

## 4. Segregate your waste



On site segregation is key to reducing waste, as it makes waste very visible and instigates behaviour change.

*By segregating plasterboard waste it becomes very clear if offcuts that could be reused are being disposed off. At Willmott Dixon's Haringey 6th Form Project, its waste management contractor Focus Environmental implemented a system of stacking offcuts close to the workforce, enabling the offcuts to then be easily selected and used, rather than a new board being cut. This resulted in plasterboard representing only 20% of the waste from site, compared to the 30-40% industry average for college projects.*

## 5. Recycled Content



Ensure you explore all options for reusing/ recycling any waste material, rather than sending it straight to landfill.

*Old vinyl removed from Marks & Spencer's Bournemouth store was recycled and went back into the new vinyl flooring that had 20% recycled content. The rest was used in traffic cone bases!*

\* % diverted from landfill calculations are based on WRAP guideline recovery rates. Figures may be subject to change depending on availability of actual performance from waste contractors.

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