

## **DTI 'Strategy for Sustainable Construction'- consultation events**

### **WASTE**

#### **1. SUMMARY**

The construction and demolition industry annually produces three times the amount of waste generated by all UK households combined. The industry produced 91 million tonnes of inert waste in England and Wales in 2003. Of this, 40 million tonnes (44%) was used as recycled aggregate and a further six million tonnes (6.5%) as recycled soil for landfill engineering or restoration. The remaining 45million tonnes were either spread on registered exempt sites, used to backfill quarry voids or disposed of at landfill sites. WRAP estimate that there is 15 – 20 million tonnes of non-inert and mixed construction and demolition waste in addition to the 91 million tonnes of inert waste. A further 13 million tonnes of waste is created through material waste i.e. materials delivered to the site, unused and then sent away for disposal. BRE will publish The Construction Resources & Waste Roadmap shortly which will be linked to the Defra Waste Strategy and will detail the waste scenarios of today set against the potential to improve in the future, and actions that could be taken to realise those improvements.

##### **Understanding** – good

Waste continues to be a major issue for the construction industry. The industry is beginning to move away from waste management to resource efficiency which will ultimately lead to improved economic performance.

##### **Practice** – fairly well defined

Although waste management has been a concern for the industry for a number of years, best practice is not currently being delivered throughout the industry. Legislative requirements, including Duty of Care are still not completely understood or complied with and recent audits in major office and retail sites have found significant non-compliances with major elements of the Site Waste Management Plan (SWMP) voluntary code.

##### **Measurement** – metrics set, measurement common

Annually Defra publish "The environment in your pocket" which contains key environmental statistics including estimated total annual waste arisings by sectors including the construction and demolition industry.

A range of metrics have been set, including volume, tonnage and value based metrics. AMEC have calculated the true cost of waste disposal by factoring in not only skip hire but also the labour to fill the skip and the cost of materials in the skip. Data on C & D aggregate waste is good due to periodic DCLG surveys, but data on non-aggregate waste is poorer. Work by BRE and MTP will improve the situation but further efforts are needed to improve data on construction resource use and waste

##### **Controls** – regulations in place, fiscal measures, enforcement reasonable

Waste is heavily regulated. Fiscal measures like the Landfill Tax and aggregates levy are two economic instruments that have been introduced to deliver sustainable waste practices.

#### **2. VISIONS AND METRICS**

##### **2.1 Industry vision**

###### **2.1.1 Published provisional/initial vision and metrics**

The target identified in the Dti Sustainable Construction Review October 2006 is zero inert waste to landfill by 2020 with annual reviews to monitor progress.

The Waste and Resources Action Programme (WRAP) recommends greater linkages between the 'materials' and 'waste' themes in order to raise sector awareness of the potential to make more efficient use of materials.

WRAP believes that by taking action to couple materials and product selection with materials use and waste management, “zero net waste” or “waste neutral” construction can be achieved. WRAP believes zero net waste is a practical benchmark of the efficient use of materials in construction. The proposed benchmark for waste neutral construction is where *the value of materials re-used or recycled in a construction project at least equals the value of materials delivered to site that are wasted. Value is credited for improvements in recycled content above standard practice and the value of materials re-used and reclaimed for sale. Value is debited for materials delivered to site but not incorporated into the building fabric, and the cost of disposal to landfill. Waste neutrality therefore depends on reducing waste, segregating material for re-use and recycling, and using more recovered material.*

**Table 1 Proposed visions and metrics**

<b>Proposed vision</b>	<b>Source of target</b>	<b>Associated metric</b>
Zero waste to landfill	Dti Sustainable construction review October 2006	Tonnes to landfill
Zero <b>net</b> waste (i.e. waste neutral construction projects)	Waste and Resources Action Programme (WRAP); Defra review of England’s waste strategy	The proposed benchmark for waste neutral construction is where the value of materials re-used or recycled in a construction project at least equals the value of materials delivered to site that are wasted. Value is credited for improvements in recycled content above standard practice and the value of materials re-used and reclaimed for sale. Value is debited for materials delivered to site but not incorporated into the building fabric, and the cost of disposal to landfill. Waste neutrality therefore depends on reducing waste, segregating material for re-use and recycling, and using more recovered material.
Halve CD&E waste to landfill by 2012	Defra review of England’s Waste Strategy, Sustainability Forum & WRAP	Tonnes to landfill

**WORKSHOP DISCUSSION POINTS**

Is it possible to achieve zero waste to landfill by 2020?  
 Is it possible to achieve waste neutrality on construction projects by 2012?

- If yes to the above how will they be achieved? What needs to happen in terms of policy, fiscal incentives, working practices, training?
- If no to the above why are the targets not achievable? What are more realistic targets to set?

Are the metrics appropriate and meaningful? Is tonnes to landfill an appropriate metric for all waste streams or should value of waste be used instead/as well?

**2.1.2. Metrics**

Approximate tonnage of waste produced by the construction and demolition industry is quoted in a range of sources as between 90 – 100 million tonnes/yr. Regardless of the exact tonnage, it is accepted that the construction industry is the biggest producer of waste.

Zero waste to landfill by 2020 is an ambitious target, but Wates Construction has set a target to send zero (non-hazardous) waste to landfill by 2010.

**Table 2 – Assessment of current awareness and attainment**

Rating 0 – 5 (see Appendix 1 for guidance)	Zero waste to landfill by 2020	Halving waste to landfill by 2012	Zero net waste (waste neutral) on construction projects
1 Established principles / sound science	3	4	2
2 Widely understood across industry	3	3	2
3 (Technically) attainable with no risk and no skills shortage	4	4	3
4 Cost-effective	4	4	4
5 Compelling business case	5	5	4
6 Strong Market pull	4	4	4
7 Established metrics and performance data	4	4	4
8 Degree of regulation	5	5	5

**WORKSHOP DISCUSSION POINTS**

Are you aware of the performance of your organisation / its projects in the context of these targets?

Does your organisation have data available on its own performance – if so, over how long?

In Table 2 do you agree with the assessments made between zero waste to landfill by 2020 and halving waste to landfill by 2012?

In Table 2 do you agree with the assessment made about zero net waste on construction projects?

What are the barriers to achieving these targets and how might they be overcome? What are the most appropriate mechanisms that should be in place and how easy are they to implement?

**2.1.3 Current performance and interim targets**

Of the 91million tonnes of inert waste produced in England and Wales in 2003, 46millions tonnes were reused. Therefore the industry is currently reusing at least 50% of the inert waste materials it produces.

**WORKSHOP DISCUSSION POINTS**

- How attainable are the above targets?
- Given the vision and present position, what would be a reasonably achievable intermediate target?
- Which, if any, of the policy, regulatory or industry initiatives outlined below are likely to have the greatest impact on this?

**2.1.4 Relative merits and limitations of proposed visions (if required)**

Zero net waste has been devised as a tool for evaluating individual projects. The concept is still under development.

## 2.2 Published Government targets

### 2.2.1. UK Targets

**Government target:** Total waste arising in 2001: 93mt of which 40mt was recycled; the target is to increase recycling up to 100% in a viable economic climate [Source: Dti Review of sustainable construction 2006]

**Metric:** tonnes to landfill

**Industry vision:** Zero waste (EA support)

**Progress:** 2006 with annual reviews

**Achievement date:** 2020

**Primary responsibility:** Government; developers; designers; clients; manufacturers; WRAP

**Mechanism for achievement:** legislation; regulations; enforcement; demolition protocol; taxes; incentives; CSR; awareness raising

**Secondary responsibility:** Local authorities; contractors

### 2.2.2 Other published government / agency targets

#### **Defra Review of England's waste strategy: Construction waste stream**

The review has proposed three targets, two of which are captured in Table 1 above (halving waste to landfill by 2012 and waste neutral construction) the third proposed target is:

- Construction clients to include contractual requirements for measurement and improvement of materials resource efficiency in one-half of construction projects in England over £1million in value by 2009

The issues around this target are:

- Projects above £1M are only about 10% of projects by number, although 60-70% by value. Is this an appropriate threshold? Should it be lower/higher?
- Is the definition of 'materials resource efficiency' (i.e. waste reduction, use of recovered materials in construction, and recycling) clear?
- Statutory SWMPs will be a key means of encouraging 'measurement'. Public sector procurement could also ask for measurement. But Defra believes there also need to be drivers for improvement. How could improvement be motivated? What would be the key contractual means of delivering it, bearing in mind that SWMPs will not require improvement?
- How would performance against this target be measured?

**Target date:** March 2007 for publication of strategy review

#### **Code for Sustainable Homes – a step-change in sustainable home building practice**

In December 2006 the Department for Communities and Local Government published The Code for Sustainable Homes as a new national standard that aims to deliver sustainable building practice for new homes. The code is currently (January 2007) voluntary but the Government is considering making assessment under Code standards mandatory in the future.

##### **Construction waste minimum standard:**

Ensure there is a site waste management plan in operation which requires the monitoring of waste on site and the setting of targets to promote resource efficiency

##### **Measurement criteria:**

Where the site waste management plan includes procedures and commitments that minimise waste generated on site in accordance with WRAP/Envirowise guidance

**Points awarded:** 0.9

OR;

Where the above is achieved and the plan includes procedures and commitments to sort, reuse and recycle construction waste either on site or through a licensed external contractor.

**Points awarded:** 1.8

#### **London 2012 – Towards a One Planet Olympics**

##### **One Planet living principle:**

Zero waste

**Strategy:**

Developing closed resource loops. Reducing the amounts of waste produced, then reclaiming, recycling and recovering

**Games**

No Games waste direct to landfill – all treated as a resource

Zero waste target a pivotal procurement driver

Closed-loop waste management at all venues

Public information campaign to promote high quality front-of-house waste separation

**Legacy**

Zero waste policies extend across East London based on high recycling rates and residual waste converted to compost and renewable energy

Increased market for recycled products

Closed-loop waste management to be standard practice for major sports events

### 3 MECHANISMS

#### WORKSHOP DISCUSSION POINTS

- How much progress in the area over the past 5 years has been driven by regulations / how much by market/voluntary measures?
- How much future change is going to be driven by regulations / enforced policy compared with market / voluntary measures?

#### 3.1 Policy and regulatory responsibility

##### 3.1.1 Current regulatory & policy drivers and associated Government lead initiatives

There is a range of current regulatory and policy drivers, namely:

Level	
Directives	Waste Framework Directive, Landfill Directive
Acts	Environmental Protection Act 1990, Town & Country Planning Act 1990, Planning & Compensation Act 1991, Waste minimisation Act 1998
Regulations	Environmental protection (Duty of Care) Regulations 1991, Hazardous Waste (England and Wales) Regulations, Landfill (England and Wales) Regulations 2002, Pollution Prevention Control, Waste Management Licencing & exemptions
Good practice guidance and Codes of Practice	DEFRA, Regulators, CIRIA, WRAP, ICE etc

##### 3.1.2 Planned regulatory & policy drivers and associated Government lead initiatives

- Under the Clean Neighbourhoods and Environment Act 2005 Site Waste Management Plans (SWMP) are due to become mandatory in 2008.
- A review of the Waste Framework Directive is being undertaken by Defra
- Under the Government's better regulation initiative the Environmental Permitting Programme (PPP) will combine PPC permits with WML system into a common permitting and compliance scheme (Environmental Permit)
- Duty of Care – Defra will be undertaking consultation on reviewing Duty of Care

### 3.2 Industry and market drivers

#### 3.2.1 Principal sectors

There are a number of client and contractor organisations that are leading the way on achieving sustainable waste practices, and it is the major contractors that have a duty to mentor their supply chain to ensure the smaller contractors have an understanding of waste management legislation and how they can improve their working practices. The Major Contractors Group (MCG) launched a Sustainability Charter in October 2006. The MCG has drawn up a pilot study to measure the proportion of waste diverted from landfill. Following the pilot study member companies will produce waste figures on a quarterly basis.

In addition to legislation and regulations there are a number of other drivers:

- Client procurement requirements driven by corporate social responsibility (CSR)
- Planning authority requirements e.g. Planning Officers' Society (POS) – Local Government Association (LGA) model planning policies; Greater London Association (GLA) supplementary planning guidance.

## APPENDIX 1

Guidelines for scoring Table 1

1	2	3	4	5	6	7	8
<b>Principles</b> established and practice within reach of most companies	Widespread <b>understanding</b> of principles across most parts of the industry	Technically attainable with little or no <b>risk</b>	<b>Cost effective</b> to implement within present fiscal / regulatory regime	Compelling and well promoted <b>business case</b>	Strong <b>market pull</b> from both public sector and private sector	Published <b>metrics</b> on current performance / benchmarking	Highly regulated, clear signals of future policy / regs
SCORE 5	5						
SCORE 0	0}						
Gaps in scientific / social / economic principles	Knowledge and understanding across most parts of the industry non-existent	Technical risks / serious skills shortages	Not presently cost effective in competitive market or using conventional business case justification	Little in the form of case studies and evidence of <b>business case</b>	Little market pull beyond regulatory minima	Little in the form of any current openly available data	Largely unregulated and reliant on voluntary action