

Design for Deconstruction Workshop

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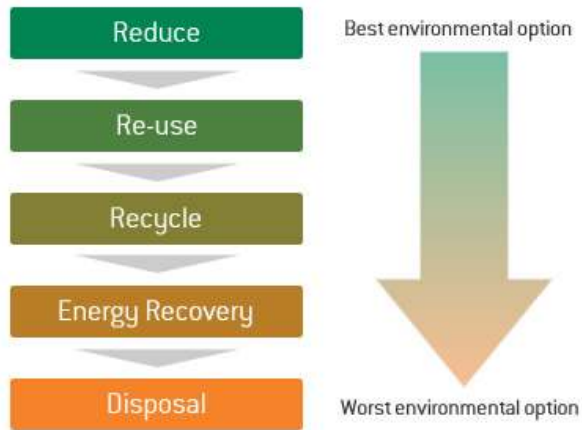
Design for Deconstruction Drivers

- Halving waste to landfill target
- Increasing landfill tax
- Demolition waste diversion target > 90% and action plan (reviewed annually)
- Revised Waste Framework Directive – at least 70% (by wt) non hazardous C&D diversion from landfill by 2020
- Construction Product Regulation and BWR 7
- EU Green Public Procurement and Buildings Ecolabel
- BREEAM credits for high demolition recycling rates



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Waste Targets:



By 2012: Halve the amount of Construction, Demolition and Excavation Waste sent to Landfill (compared to 2008)

2008 Baseline = 12.55 million tonnes

Increasing landfill tax at £8/tonne up to £80/tonne by 2014
Impact on WLC?

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EU Activity

- Construction Product Regulation (under development)
 - July 2011
 - New Basic Work Requirement on 'sustainable use of natural resources across the life cycle of the works from design to demolition'
 - Must consider 'recyclability of the construction works, their materials and parts after demolition'
- Green Public Procurement criteria
 - Currently only at product level
- Buildings Ecolabel (under development)
 - May include deconstructability criteria
- CEN TC350 Sustainability of Construction Works
 - May include end-of-life recyclability indicators



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BRE related experience

- Pre-demolition audits
 - Over 30, including OSM buildings/components
- Reclamation
 - Survey of the industry, performance standards, tracking
- Demolition industry
 - Sector targets & action plan; 'liability' products and materials
- Resource management
 - BREMAP, recycled content, environmental permits
- International best practice
 - EU policy/standards, TG 39 Deconstruction, WC115 Construction Materials Stewardship
- Monitoring and evaluation – SWMPs, environmental reporting, benchmarks, resource planning
- Environmental assessment – BREEAM, environmental profiling, Green Guide etc..
- Whole life costing – true cost of waste

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Case study: CREO house, BRE innovation park



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Case study: CREO house, BRE innovation park



Pre-demolition audit: initial results

Material	Data	Action			Grand Total
		Disposal	Recycle	Reused	
Concrete	Sum of Weight (tonnes)		277.8		277.8
	Sum of VolumeBulked (m3)		115.7		115.7
Galvanised steel	Sum of Weight (tonnes)			2.1	2.1
	Sum of VolumeBulked (m3)			0.3	0.3
Iron/steel	Sum of Weight (tonnes)			8.3	8.3
	Sum of VolumeBulked (m3)			1.2	1.2
Plasterboard	Sum of Weight (tonnes)	3.8			3.8
	Sum of VolumeBulked (m3)	5.1			5.1
Polystyrene	Sum of Weight (tonnes)	2.6			2.6
	Sum of VolumeBulked (m3)	131.1			131.1
Total Sum of Weight (tonnes)			6.4	288.2	294.6
Total Sum of VolumeBulked (m3)			136.2	117.2	253.4

What to consider

- Ease of deconstruction and future levels of reuse and recycling
- Balance of durability and adaptability
- Keeping in context within overall building and product performance – technical and environmental
- Whole life cost implications



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Thank you

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