

Waste flows in the UK and reuse

Katherine Adams
BRE & Loughborough University

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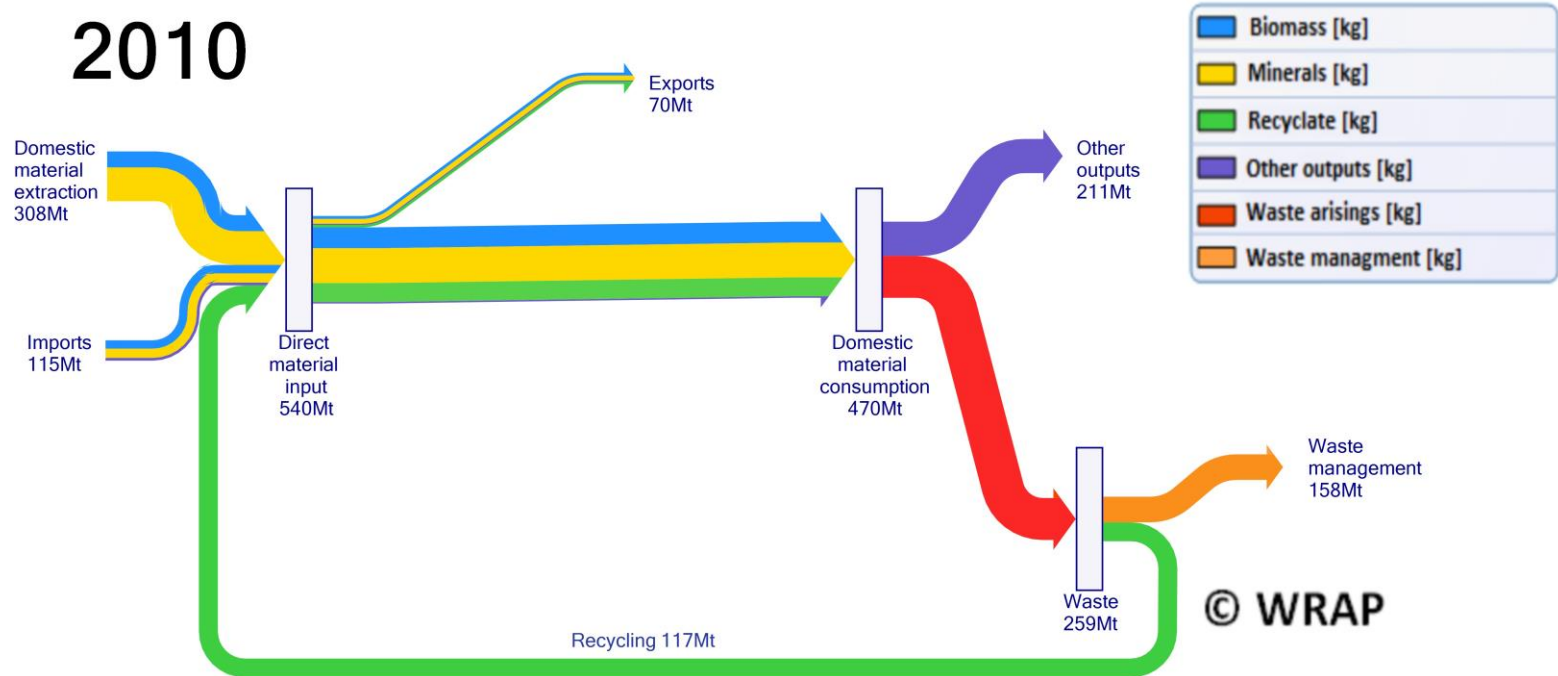
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Contents

- Material and waste flows in UK
- Demolition waste
- Reclamation and reuse
- Pre-demolition audits

Material flows: national level

2010



Construction material resource requirements

Figure 3: Construction Materials, Biomass and Mineral Consumption in RME terms, UK, 2000-2011



Source: ONS, Eurostat, UKtradeinfo. Excludes fossil fuels used for energy purposes.

CD&E waste generation in England



Source: Defra

C&D waste recovery rates

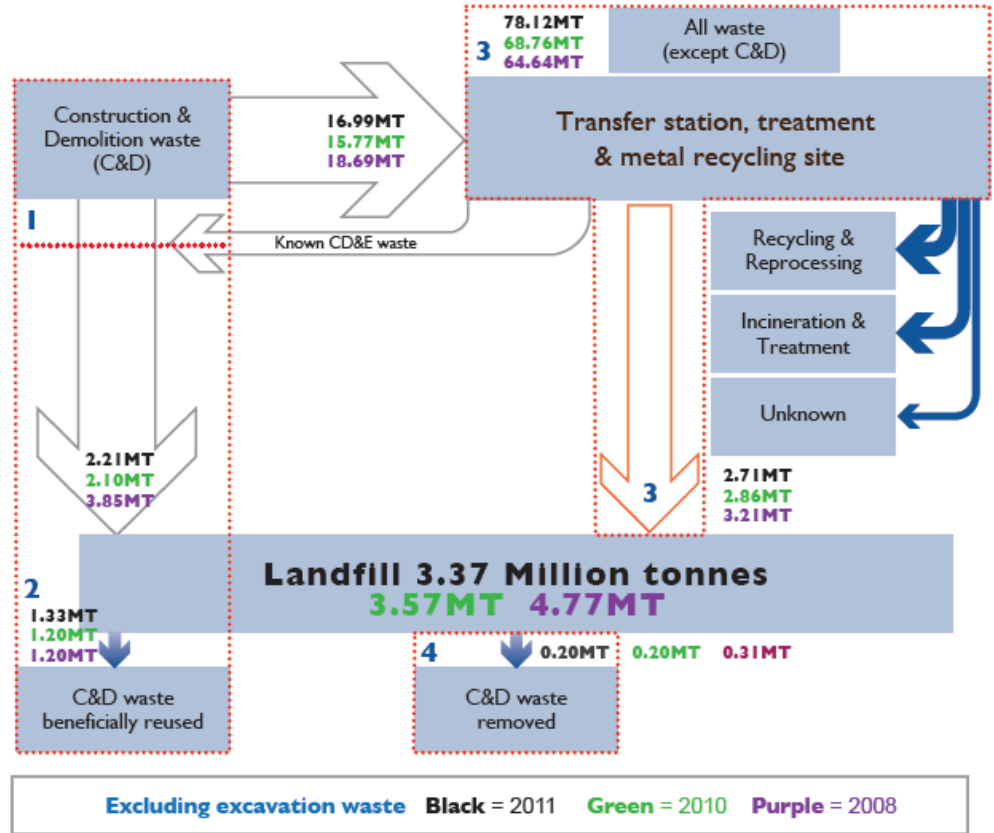
Table 3.1: Recovery Rate from Non-Hazardous Construction and Demolition Waste, UK and England, 2010-12

	UK			England		
	Generation	Recovery	Recovery rate	Generation	Recovery	Recovery rate
	000 tonnes	000 tonnes	%	000 tonnes	000 tonnes	%
2010	45,419	39,129	86.2%	39,832	35,480	89.1%
2011	47,067	40,622	86.3%	41,152	36,754	89.3%
2012	44,786	38,759	86.5%	38,938	34,714	89.2%

Excludes excavation waste
Source: Defra statistics

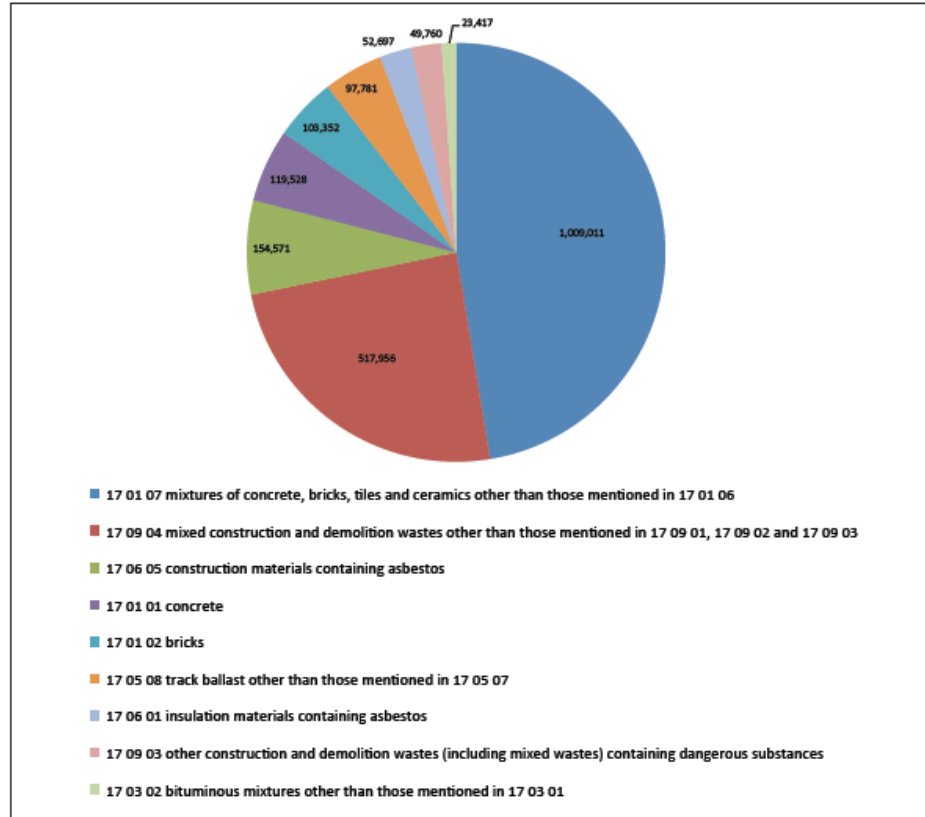
Source: Defra

C&D waste flows in England



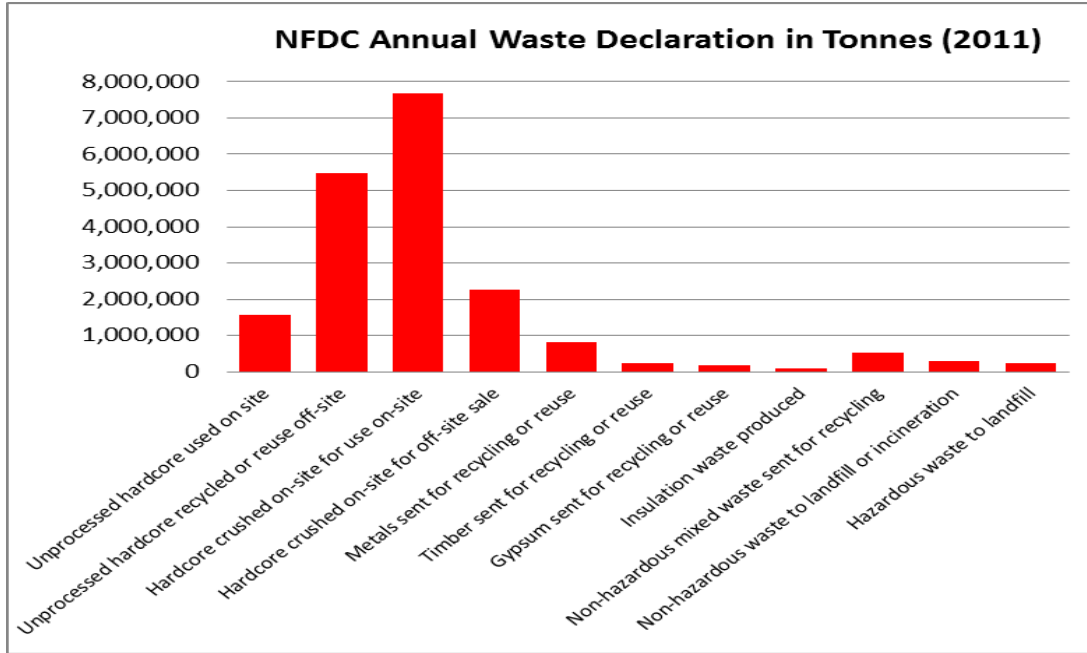
Source: Green Construction Board (2014). 2008-2012 Five years focus on waste achievements and changes and the 2012 figures for CD&E waste to landfill in England.

C&D 'known' waste to landfill



Source: Green Construction Board (2014). 2008-2012 Five years focus on waste achievements and changes and the 2012 figures for CD&E waste to landfill in England.

How much demolition waste is there?



19.3 million tonnes in 2011 from NFDC members
– around 70% of industry by value

Reclamation in the UK

- The UK has an active and diverse architectural salvage sector in the world
- Mainly small, local companies
- Amount of materials being reclaimed has decreased
- Salvo (network)
<http://www.salvo.co.uk/>

Category	Estimate based on average 2011 tonnes	BigREc 2007 (England adjusted) tonnes	BigREc 1998 (England adjusted) tonnes
Iron & steel	47485	17,600	60,800
Concrete	1612	NA	NA
Lower value wood	4783	39,200	301,600
timber beams	10640	228,800	105,600
bricks	222369	678,240	336,000
roof slates and tiles	151737	80,536	232,000
stone	127262	458,960	880,000
flooring	27963	15,920	82,960
paving	139504	142,920	286,160
Stone, slate marble	2902	41,120	43,200
woodwork	5056	46,840	21,600
iron & brassware	8559	13,920	11,760
terracotta	2257	5,376	2,400
	752130	1,786,472	2,373,680

Table 13 Comparison of survey results for 2011, 2007 and 1998

Low value reuse

Waste exchanges

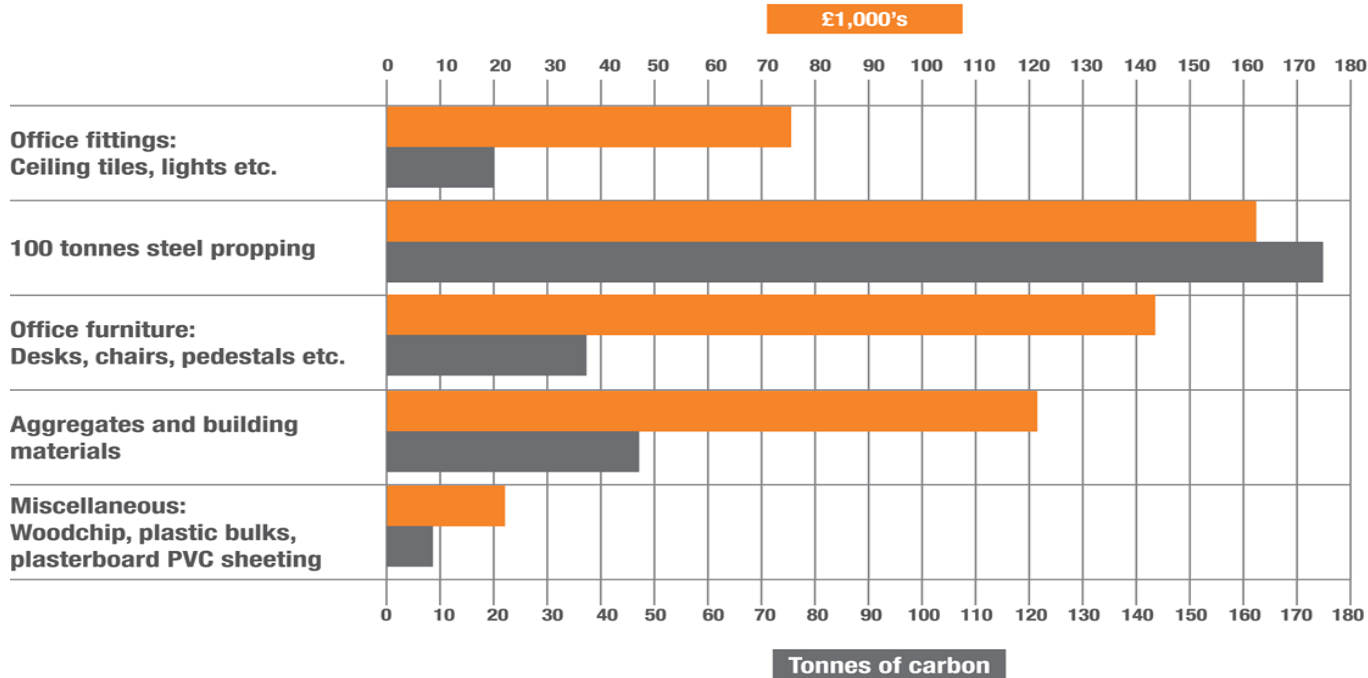
- A number of commercial websites (Recipro, Trade Leftovers, Construction Material Exchange, Enviromate)

Community schemes (often need grant funding to survive)

- Community Wood Recycling
- Community RePaint
- Reuse Networks (Reuseful UK, Furniture Reuse)

Take back schemes for certain materials (carpet tiles, ceiling tiles, plasterboard) but mostly recycled; focus on waste from construction (not end of life)

Case Study: reuse at MACE



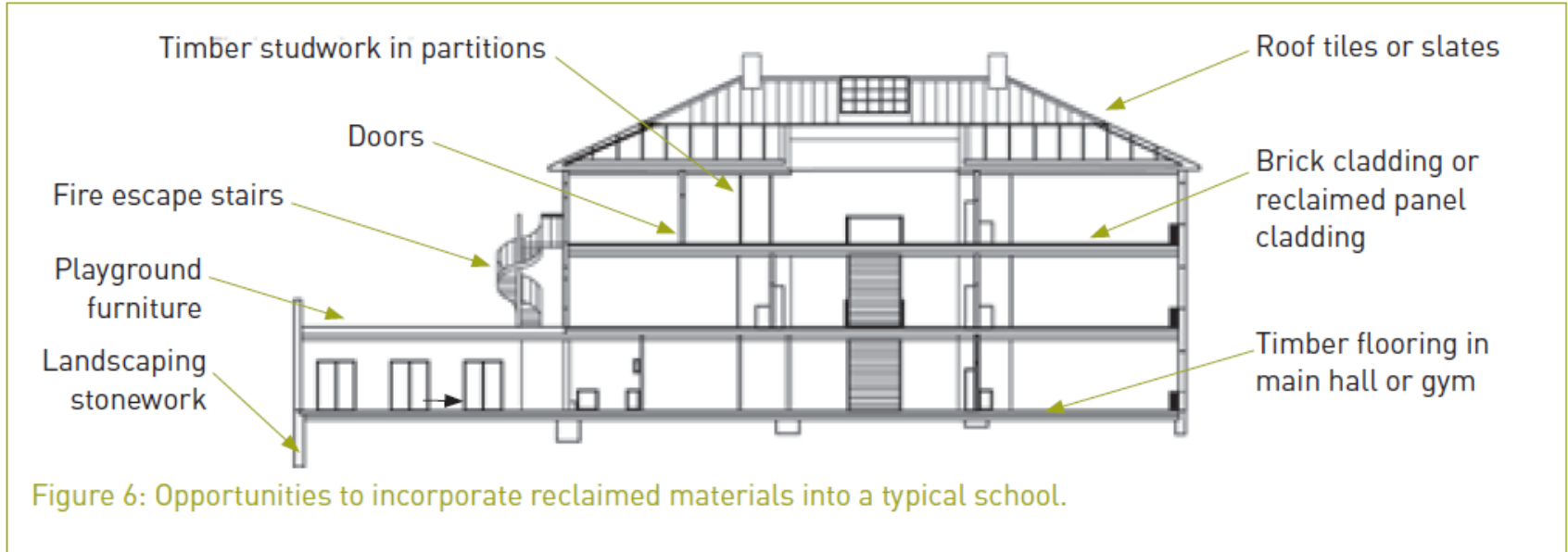
In the last three years
Mace projects have
reused materials,
saving over...

£520,000

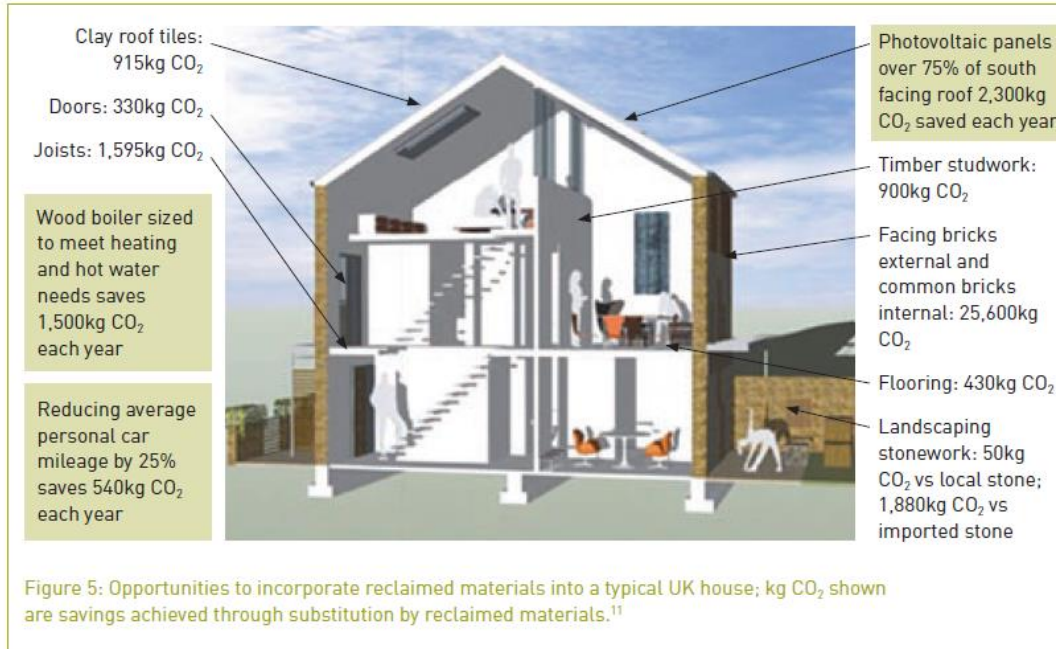
+

CO₂
287
tonnes

Opportunities



Potential CO₂ savings from using reclaimed materials



Barriers to increased reuse

- Time consuming and difficult to find local markets (need a long lead in time)
- Lack of awareness and understanding on how to maximise reclamation
- Confusion of reuse v recycling
- **Value of materials v time to deconstruct**
- A focus on developing recycling markets and a push via Green Public Procurement (targets to have 20% by value of recycled content in projects)
- Lack of environmental data
- For structural use, potential issues with liability re performance
- Some local authorities don't like reclaimed materials

PRE Demolition/Refurbishment audits



- Requirement in BREEAM

Case study: University Buildings

- Pre-refurb audit of 2 buildings
- Removing doors, some internal partitions, heating and wiring and re-roofing
- Victorian fittings (with value)
- Reuse target of 75%
- Recycling target of 25%

Product	Reclaim (t)	Recycle (t)	Reclamation valuation (£)
Welsh slate roof tiles	50	-	£25,000
Timber doors	0.7	-	-
Cast iron radiators	22	-	£900-£4,500
Red bricks	-	12.9	-
Ceramics	-	1.9	-
Cast iron piping	-	7.5	£262
Total:	73	23	£26,162- £29,762

bre

Thank you

E: Katherine.adams@bre.co.uk

E: k.adams@lboro.ac.uk

T: +44 1923 664478

