

**THE IMPORTANCE OF WASTE CLASSIFICATION**

**OR**

**WHY WE SHOULD LEARN TO LOVE DIG AND DUMP**

**By**

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## THINGS TO LEARN!

1. WASTE CLASSIFICATION AND WAC TESTING ARE NOT THE SAME THING
2. UNDERSTAND THE DIFFERENCE BETWEEN A PERMIT AND AN EXEMPTION
3. REALISE UNCONTAMINATED GROUND CAN BE HAZARDOUS (Even after remediation)
4. MAKE SURE YOU TEST THE CLEAN STUFF
5. MAKE SURE YOU LEAVE ENOUGH TIME

- Why is this important
- Legislation Time Line
- Waste Categories
- Waste Testing
- Conclusion

## Why is it important?

- LEGAL
  - Duty of Care
  - Criminal Offence
- PRACTICAL
  - Money

## Legislation Time Line:

- European Waste Framework Directive 1975  
Defines waste, waste recovery and disposal
- The Control of Pollution Act 1989
- Environmental Protection Act 1990  
Duty of Care
- Controlled Waste Regulations 1991  
Established licensed waste carriers
- Waste Management Licensing Regulation 1994  
All waste activities controlled by licenses issued by Environment Agency. Now replaced by IPPC 2000



## Legislation Time Line:

- European Directive on Hazardous Waste 1991
  - Defines waste as either Hazardous or Non-hazardous
  - Approved Supplier List
- European Waste Catalogue 2000
  - Provides all waste with a Waste Code
- Hazardous Waste Regulations 2005
  - Provides method for calculating if waste is hazardous
- List of Waste Regulation 2005

## Legislation Time Line:

- European Landfill Directive 1999
  - Targets for reducing waste
  - Classify landfills as Inert, Non-hazardous and Hazardous
- Landfill Tax 1996
  - Introduced to reduce landfilling
  - Controlled by Inland Revenue
  - Inactive rate £2.50/t
  - Active rate £32.00/t due to rise by £8/t from April 2008
- Landfill Regulations 2002
- Waste Acceptance Criteria 2005
  - Defines upper limits for Inert and Hazardous waste disposal



## IS IT WASTE?

Environment Agency definition:

“Where uncontaminated materials produced on site during construction works (including excavated soils and materials resulting from demolition) cannot be used on-site, then they will generally be regarded as having been discarded and are therefore **WASTE**.”

Note:

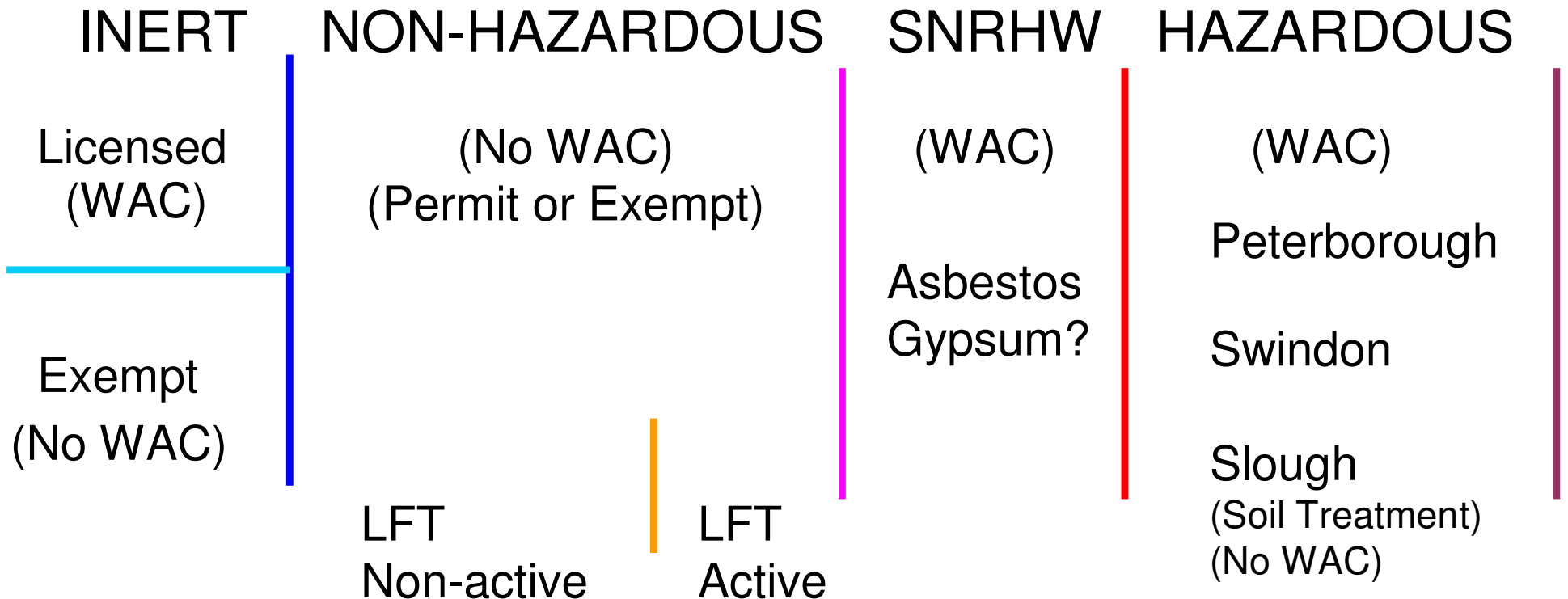
If any of the materials require treatment prior to re-use whether on site or off then that treatment is considered a waste activity and requires a license, but the treated material, provided it complies with the WRAP “quality protocol for the production of aggregates from inert waste”, will be considered a product and not a waste.



## Not waste?

- No requirement to “discard”
- Suitable for use without treatment
- Only quantity necessary for specified works
- Certainty of use
- Lines of evidence\*

## WASTE CATEGORIES & DISPOSAL



Hazardous Waste Regs  
Landfill Directive  
Waste Acceptance Criteria

## HOW TO CLASSIFY WASTE!

- Use dry weight testing to define concentrations against Approved Suppliers list
- Use Haz Waste Regs calculation to define Haz or Non-haz toxicity Hazard Codes: H7 Carcinogenic, H14 Ecotoxic
- Now categories using EWC code; Construction Soils: 17 05 03 Haz and 17 05 04 Non-haz

# Waste Assessment

## Summary for zinc:

Property	Zinc Sulphate	Zinc Oxide
H14 Ecotoxic at:	1,009 mg/kg	2,000 mg/kg
Solubility	Soluble in water	Insoluble in water
Uses	Restricted use (Rayon manufacture, food additive and wood preserver)	Wide range uses
Other tests to help in assessment	Check total sulphate concentration	None

## HOW TO CLASSIFY WASTE!

- Decide where the material is to be disposed of: Permitted or Exempt site, what are the entry requirements?
- Permitted Hazardous Landfill; WAC required
- Permitted Treatment Facility; No WAC required
- Permitted Non-hazardous Landfill Facility; No WAC required
- Exempt location; No WAC
- Permitted Inert Landfill; WAC required

# Exemptions

- 7A Spreading benefit for agriculture or ecological improvement
- 9A Spreading (reclamation and improvement of land)
- 13 Manufacture of soil
- 19A Use in “relevant works”
- 41 Temporary storage of waste at the site of production

MOST EXEMPTIONS ARE TO BE REPLACED BY STANDARD RULES PERMITS  
OCT 2009

## Landfill Tax (Qualifying Material) Order 1996

### Column 2, Group 1 (of 9)

“Rocks and soils, naturally occurring”, “Group 1 includes clay, sand, gravel, sandstone, limestone, crushed stone, china clay, construction stone, stone from the demolition of buildings or structures, slate, topsoil, peat, silt and dredgings.”

Landfill tax is collected by the Landfill Operators using the above definition

WRG won court case to show LFT does not apply to landfill engineering materials including daily cover

LFT Exemptions last submission Nov 08 to be applied by Dec 2012

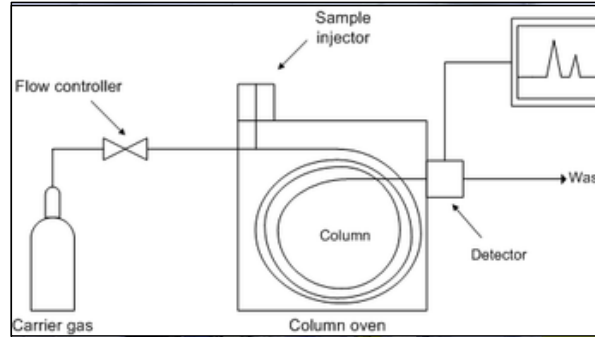


## WASTE TESTING

### DRY WEIGHT TESTING

GC used for volatiles  
Gas Chromatography  
(Sample 10g)

ICP/OES used for metals  
Inductively Coupled Plasma  
Optical Emission  
Spectrometer  
(Aqua Regis Sample 1g)



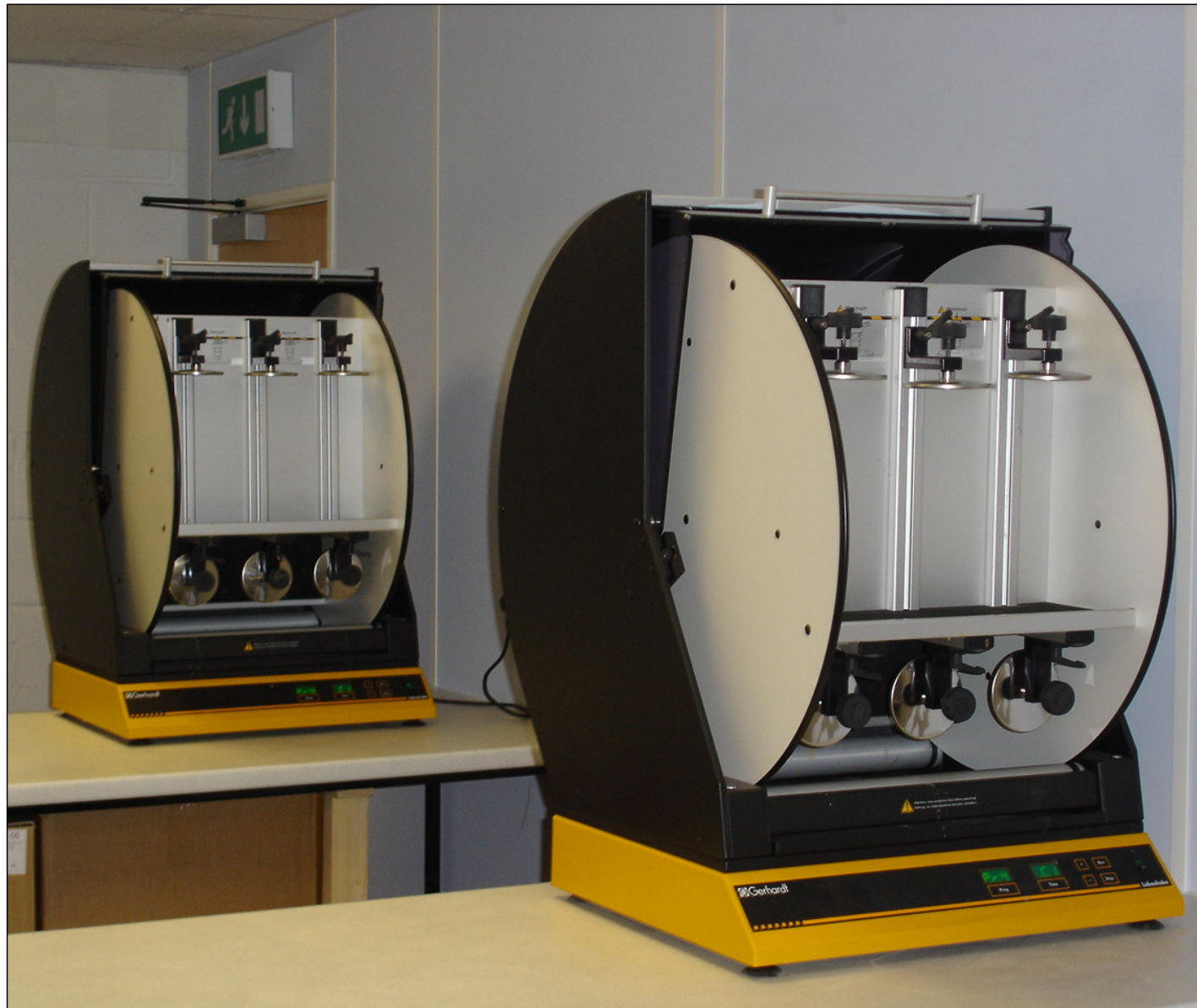


## WASTE TESTING

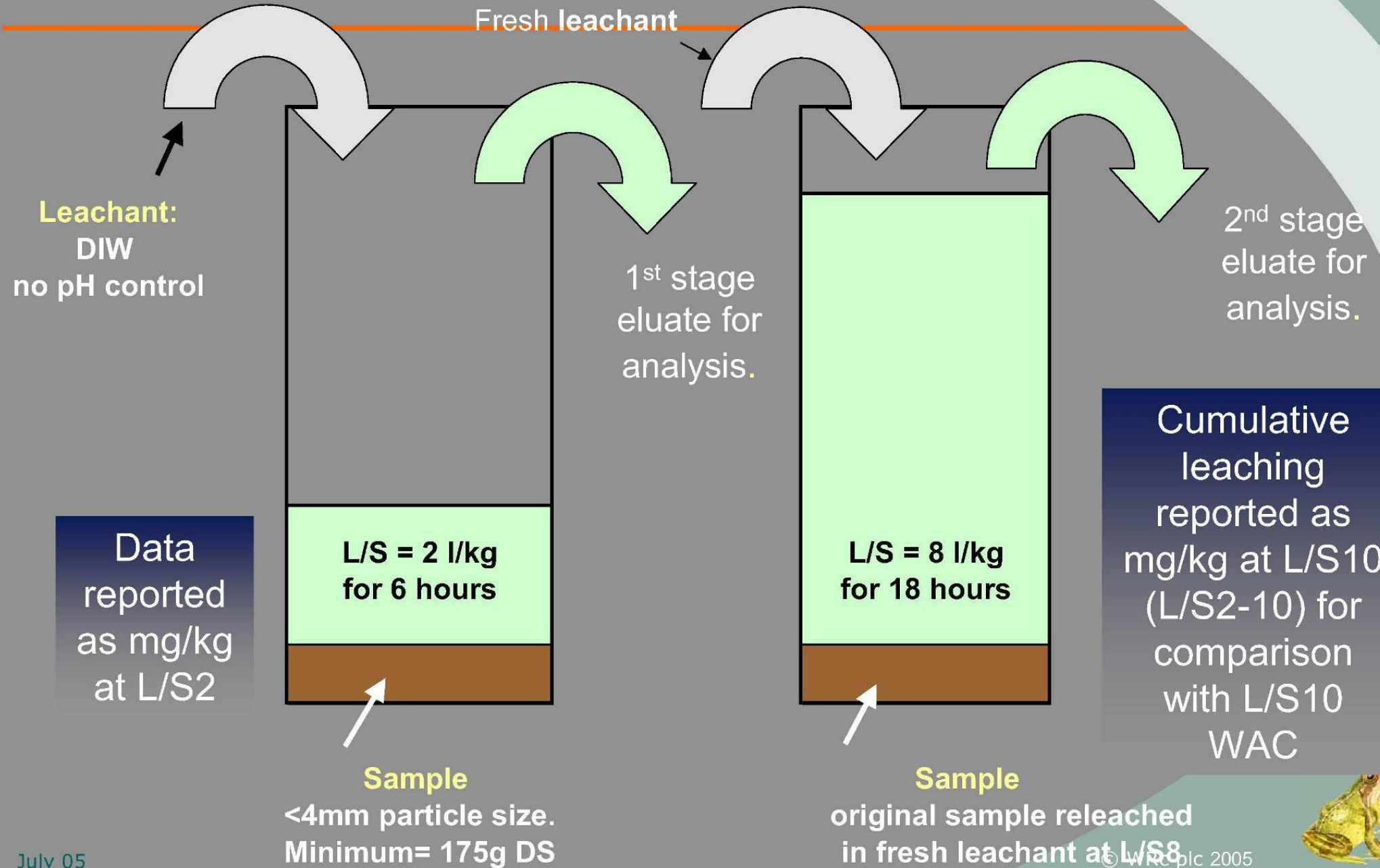
### WAC TESTING

Dry Weight:  
PCB, PAH, Mineral Oil  
BTEX, LOI, TOC, pH

Leachate Testing:  
Metals, TDS, Phenol In  
TDC



# BS EN 12457-3: summary





- Office development
- 4.5m deep basement
- 5,000m<sup>3</sup> bulk dig
- 170 pages long
- 17 exploratory holes
- 0.5 – 1.2m Made Ground
- 9 chemical tests all in MG
- Com/Ind Human Health  
Rsk Ass Uncontaminated

### 13. WASTE CLASSIFICATION

Any excavated material and excess spoil should always be classified prior to removal from site as required by 'Duty of Care' (Environmental Protection Act 1990) legislation. This means that material has to be given a proper description and waste classification prior to removal consequently, details of the materials required for disposal, together with certificates of chemical analysis should be sent to a suitably licensed waste disposal contractor for classification and to confirm compliance with their license conditions.



## DISPOSAL COSTS

Typical cost impact in London

Office Block with basement 5,000m<sup>3</sup> soils disposal:

5 April 09

- Inert Exempt £152,780
- Inert Licensed £166,650
- Non-haz Inactive (or exempt) £253,600
- Non-haz Active £558,330 (£647,220)
- Hazardous £1,139,720 (£1,237,500)

Landfill Tax Exemptions end Nov 08 complete Dec 12



# Sustainable use of materials

Promote sustainable waste management based on the waste hierarchy :-

- Reduction
- Reuse
- Recovery
- Disposal



Raise ground levels

Screen materials on-site

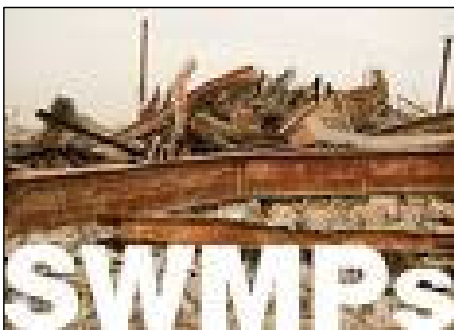
Segregate and recycle if possible

Find exempt site to avoid LFT

## OTHER REASONS TO PAY ATTENTION



4 breeam credits relate to waste with additional credits for material and land reuse.



Site Waste Management Plans mandatory for all schemes over £300k



Government through WRAP committed to halving construction waste by 2012. Intro of WRAP Protocols for Agg PFA

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THANK YOU



