CL:AIRE Definition of Waste: Development Industry Code of Practice (DoW CoP)

An Introduction to...
Objectives

- CL:AIRE Background
- Objectives & Challenges
- The DoW CoP
- Training & QPs
- Regulators
- Register of Materials
- The Big Picture
- Case Studies.
CL:AIRE

- Members – Public & Private
- Industry Problems - Solutions
- Capture best practice
- Standards & Training

© CL:AIRE 2015
• AWE
• Bristol & Avon Transport & Recycling Ltd
• Celtic Ltd
• DEC UK Ltd
• Defra
• Dept. of Env. Northern Ireland
• Environment Agency
• ERM
• Homes & Communities Agency
• Kier Group Plc
• Mick George
• National Grid Property Ltd
• Shell Global Solutions (UK)
• SPASF Priroda
• VertaseFLI
• Willmott Dixon

• AECOM
• A L P Ambrose Minerals
• ALUN Griffiths (Contractors) Ltd
• Arcadis
• Arup
• Atkins
• Babcock
• BAE Systems Properties Ltd
• BAM Nuttall
• Beech Consultants
• BIOGENIE
• Biosoil
• Blue Sky Bio
• Bone Environmental Consultant
• British Solar Renewables
• BT O’Sullivan Construction Solution Ltd
• Caerphilly County Borough Council
• Cavendish Nuclear
• CH2M Hill
• Constructing Excellence
• Cranfield University
• CRB Environmental Ltd
• Crossfield Consulting Ltd
• Cuddy Group
• Darlow Lloyd & Sons Ltd
• Deep Soil Mixing Ltd
• DETS Ltd
• Dunton Environmental
• DWL Environmental Ltd
• Ecologia
• The Environmental Protection Group Ltd (EPG)
• EnviroSurveying Ltd
• Firth Consultants Ltd
• Foot Anstey LLP
• Geo2 Remediation Ltd
• Geo-Environmental Services
• Geosyntec
• Grontmij
• Ground-Gas Solutions Ltd
• Hazardous Waste Management
• HBR Limited
• H Fraser Consulting Ltd
• The Hub
• Hyder Consulting Ltd
• Hydrock
• HYDROGEO Ltd
• Kalex Limited
• LBH WEMBLEY Geotechnical & Environmental
• Listers Geotechnical Consultants Ltd
• Lithos Consulting
• McAuliffe Civil Engineering
• MDK Environmental Ltd
• Oracle Environmental Experts Ltd
• Opus International Consultants Ltd
• Parsons Brinckerhoff
• Paulex Environmental
• Peroxychem Environmental Solutions
• Peter Brett Associates
• r3 environmental technology ltd
• Rabbit Group
• Ramboll Environ
• RAW Group
• Regenesis
• RCCAO
• Rodgers Leask
• Rolton Group
• Roundhay Environmental Consulting Limited
• RPS
• RSK Group
• Rural Arisings
• SEnSe Associates
• Soilfix
• Sollutions Ltd
• Southern Testing
• Stephenson Harwood
• The Sirius Group
• Tamdown Group Ltd
• T & P Regeneration Ltd
• trm
• Universite de Liege
• University of Birmingham
• University of Sheffield
• University of York
• URS Infrastructure & Environment
• VHE Construction Plc
• Wardell Armstrong
• Ward Homes
• Waterman Energy, Environment & Design Ltd
• WSP Group
• WYG
Note 1: Budget 2014 - increase in the standard & lower rates in line with inflation (RPI) rounded to the nearest 5 pence, for disposals of waste made...after 1 April 2015. …the rate will not fall below £80 per tonne from 6 April 2014 to 5 April 2020.
Context

Financial Times 19\textsuperscript{th} June 2013

- Viridor – Aim = shut 18 / 21 LF\textsubscript{s} by 2020
- Estimate 50\% void space left unused ~ 40,000,000 m\textsuperscript{3} to 62,000,000 m\textsuperscript{3}
- Sita – stated intentions to close – only 21 sites remaining.
- Article indicates significant shrinking market ∴ limited void space ∴ increased costs
- 2010 - 2011 only 1,000,000 m\textsuperscript{3} of new void space created – at the same time 13,000,000 m\textsuperscript{3} withdrawn / refused.
- Avg. non hazardous gate fee in 2012 per tonne (source: WRAP, 2013) 21 pounds (£)
Defra aims to simplify all of its guidance by spring 2015. Guidance will be designed entirely around users’ needs so they can quickly access clear information on what they need. We expect a reduction in volume of at least 80% based on experience so far, potentially saving businesses £100million.

“You can make significant savings, both in time and money if all legislation and particularly guidance and policy were written in plain English.”

Red Tape Challenge Website Respondent

Purpose of the DoW CoP

Good practice when -

Site Specific

Following Treatment
What is Best Practice?

3 Basic Steps –

1) Adequate Materials Management Plan – site specific

2) MMP based on appropriate Risk Assessment

3) Ensuring materials used as planned – captured in Verification report.
Who is Using the DoW CoP?

Appointed Engineers

Utilities

Developers / Land owners

Contractors

Waste brokers / STFs

Regulators

…the whole project team must understand the requirements of this DoWCoP.
When to Use the DoW CoP?

Excavation & reuse of material – on site or on another site

Brownfield & greenfield sites - contaminated or clean
When to Use the DoW CoP?

On large or small projects – complex or “routine”

If treatment of contamination is needed or not – on or off site
There are Other Options

Dig & Dump

WFD Exemption

Exemption

Negotiate

EA WRAP Aggregates

Permit

‘Just do it!’
Benefits of Using the DoW CoP

“The straightforward structure and ease of use of the DoW CoP has been as much a part of its success as the aims it was created to achieve....”

Preface to Version 2 of DoWCoP, March 2011
The Role of CL:AIRE

Manage

Website

QP Register

Register of Materials

Best Practice

Improve & Expand
The DoW CoP Principles and Scope
Principles - The 4 Factors

When is a Waste not a Waste?
For Excavated Materials


2. Suitable for use

In all cases

3. Certainty of use

4. Quantity
Suitability (no further processing)

Route A: Model Procedures + Remediation Strategy
- Chemically + geo-technically

Route B: Design Statement
- Risk based – Environment Agency’s CLR11
Quantity

Cut and fill / mass balance calculations:

- Pre-construction / final contours
- Specified in planning
- Remediation strategy / Design Statements
Certainty

- Specified in planning
- Legally binding contracts:
  - Roles & responsibilities
- Contingency plans
- Off-spec. materials - who pays?
Scope
Excavated Materials – included

- Soil, parent material & underlying geology
- Soil & mineral based dredgings
- Ground based infrastructure - capable of reuse
- Made ground
- Source segregated aggregate material arising from demolition activities
- Stockpiled excavated materials that include the above
Excavated Materials - Excluded

- Soils - contaminated with injurious invasive weeds
- Specific excavated infrastructure material - pipework & storage tanks
- General construction wastes
- Demolition wastes not included in the previous slide e.g. brick, concrete
- Extractive waste (Mining Waste Directive)
Process

1) Adequate characterisation of material(s) and site(s)

2) Risk Assessment – tiered

3) Remediation Strategy / Design Statement

4) Materials Management Plan Form

5) Declaration

6) Verification Report
Materials Management Plan

- Scenario covered
- Organisation
- Site details
- Landowners
- Summary & Objectives
- Plans & Schematics
- Parties & Consultation
- Lines of Evidence / Contingency arrangements
- Tracking system
- Records
- Verification Plan
- Environmental Benefits - optional
Tracking System

- All materials tracked if subject to:
  - Excavation / Disposal / Treatment and/or Reuse
- Generated an auditable trail
- Annotated plans
- Outgoing inspection procedures
- Registered waste carrier or non-waste
- Tracking form / control sheets
- Movement through treatment facility?
- Delivery tickets - non-waste materials
- Incoming inspection procedures for non-waste materials
- Signed delivery tickets
- Record of where placed
The Qualified Person Declaration

- Qualified Person review
- Confirms DoW CoP followed
- Completes & submits
- Declaration Receipt -

“If the work is not carried out in accordance with the DoW CoP, then materials may be deemed to be waste. A Verification Report has to be completed – to record reality”
Verification Report

- Site plans
- Experience & qualifications – project team
- Project descriptions
- Ref. site investigation data
- Ref. risk assessments
- Ref. to MMP + Tracking system inc. any alterations
- Suitable for use criteria
- Treatment records
- Lab analysis
- Ref. to waste transfer docs. Inc. any rejected loads
- Signed delivery tickets
- Contingency arrangements implemented
- Records of quantities used
- Copies of Declarations.
Quick Break
Materials Reuse Scenarios
Materials Reuse Scenarios

Three key points:

- Principles + constants - all scenarios
- Remember the four factors
- and if it looks like .......
Use on the Site of Origin

- Simplest arrangement
- In Version 1
- Uncontaminated / contaminated material
- Anthropogenic / natural sources
- Use on site excavated,
  - without treatment,
  - or after on-site treatment,

- DoW CoP V2 1.13 Waste Framework Directive exclusion
What is “Site of Origin”?
What is “Site of Origin”?
Use on Site of Origin – Example

Excavation Area 1
500 m³

Ex-situ Bioremediation treatment

Placement sub area 1
1,500 m³

Declaration

Excavation Area 2
1,000 m³
Direct Transfer

• Version 2 - 2011
• clean naturally occurring soils and mineral materials
• from one site to another development
• receiving site does not require Environmental Permit / Waste Exemption

*DoWCoP “clean”*

“devoid of anthropogenic contamination to a degree or level that is considered harmful to living organisms”
Direct Transfer - The Materials Covered

Clean naturally occurring soil & mineral material includes:

- Soil, both top soil and sub-soil
- Parent material
- Clays, silts, sands and gravels
- Underlying geology
- Made ground consisting - above materials only
Direct Transfer – The Sites Covered

The materials must be sourced from:

- greenfield sites – no past contaminative use, or
- brownfield sites - natural soils extensively characterised / proven clean, and
- must be capable of use without the need for treatment
Direct Transfer – Elevated Levels

- Clean soils + naturally elevated concentrations of substances
- Principle: must not increase the level of risk to the environment at the site of use
Direct Transfer – Examples

Site X Excavation Area 1
2,000 m³

Site Y Placement Area 1
1,000 m³

Site Y Placement Area 2
1,000 m³

Declaration

Site X Excavation Area 1
2,000 m³

Site Y Placement Area 1
1,000 m³

Site Z Placement Area 1
1,000 m³

Declaration

Declaration
Direct Transfer – Examples

Site X Excavation Area 1
1,000 m³

Site Y Excavation Area 1
5,000 m³

Site Z Placement Area
16,000 m³

Site of Origin
Site X Excavation Area 1
3,000 m³

Site X Placement Area 1
2,000 m³

Site X Placement Area 2
1,000 m³

Site Z Placement Area 1
2,000 m³
Cluster

The simplest model:

- Close proximity
- Shared treatment facilities
- Temporary
- Predetermined
- Regulator approved
1) Hub site: Ex-situ process based technology e.g. Commercial end-use

2) Receiver site only e.g. Commercial end-use Need to lower levels (surplus materials)

3) Donor and Receiver site e.g. Commercial end-use

4) Donor site only e.g. Residential end-use Need to lower levels (surplus materials)

5) Donor and Receiver site e.g. Residential end-use

6) Donor and Receiver site e.g. Voluntary environmental remediation

7) Landfill: Accepts waste treated to meet Waste Acceptance Criteria

8) Treatment facility / exempt waste site
Brownfield to Brownfield Transfer

HUB-cum-Donor

Receiver site

HUB-cum-Receiver

Donor site

Declaration

Declaration
Fixed Soil Treatment Facilities

1 MMP structured so that it can be simply added to
4 Declarations
4 Verification reports completed
The Qualified Person
Role and Attributes
Role of the Qualified Person

Three principles:

- Confidence to regulators
- No duplication of effort
- Project responsibilities & possible liabilities – same
What a Qualified Person Does...

- Reviews the evidence
- Completes online Declaration
- Declaration Fee payer details
- Forwards Declaration receipt
**Declaration Fee**

Fee: £10 per 1,000m$^3$ (declared volume)

No fee for 5,000m$^3$ and below

<table>
<thead>
<tr>
<th>Declared volume up to</th>
<th>Fee (+VAT)</th>
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<tbody>
<tr>
<td>5,000m$^3$</td>
<td>£0</td>
</tr>
<tr>
<td>6,000m$^3$</td>
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</tr>
<tr>
<td>7,000m$^3$</td>
<td>£70</td>
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<td>8,000m$^3$</td>
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<td>9,000m$^3$</td>
<td>£90</td>
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<td>10,000m$^3$</td>
<td>£100</td>
</tr>
<tr>
<td>20,000m$^3$</td>
<td>£200</td>
</tr>
<tr>
<td>100,000m$^3$</td>
<td>£1,000</td>
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<td><strong>Box B: Qualified Person Checklist</strong></td>
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</tr>
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<td>-------------------------------------</td>
<td></td>
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<tr>
<td>Scenario / development route identified?</td>
<td>✓</td>
</tr>
<tr>
<td>Receiver site described?</td>
<td>✓</td>
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<tr>
<td>Regulators details?</td>
<td>✓</td>
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<tr>
<td>All parties details?</td>
<td>✓</td>
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<tr>
<td>Materials in Scope?</td>
<td>✓</td>
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<tr>
<td>Materials characterised?</td>
<td>✓</td>
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<td>MMP Complete?</td>
<td>✓</td>
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<td>MMP – Development route?</td>
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<td>All answers given?</td>
<td>✓</td>
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<td>NA + explanation?</td>
<td>✓</td>
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<td>Regulator consultation?</td>
<td>✓</td>
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<td>Suitability evidence?</td>
<td>✓</td>
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<td>Certainty evidence?</td>
<td>✓</td>
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<td>Quantity evidence?</td>
<td>✓</td>
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<tr>
<td>No regulator objections?</td>
<td>✓</td>
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<tr>
<td>Relevant Risk Assessment?</td>
<td>✓</td>
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<td>Risk Assessment conclusion?</td>
<td>✓</td>
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<td>MMP - Remediation Strategy / Design Statement aligns?</td>
<td>✓</td>
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<tr>
<td>Declaration submitted – receipt forwarded?</td>
<td>✓</td>
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</table>
… a Qualified Person Does Not

- Rework / audit risk assessments
- Inspect sites / field checks
- Audit / agree - Remediation Strategy / Design Statement
- Produce / review / agree Verification Report
- Dialogue with Regulator / Planning Authority

Identifying fundamental errors?
Qualified Person Requirements

See Appendix 6 of DoW CoP

- Corporate Authority
- Professional Standing
- Relevant Qualifications
- Experience
- Independence
- Not barred from acting
- Training
- Registration
Regulator (EA / NRW) Role

- Remedial objectives for controlled waters where necessary

- Receive Declaration from CL:AIRE

- Audit

- Check on developments where no Declaration

- Require permits or take enforcement action
EA DoW CoP Position Statement

- Modern Regulation agenda:
  - Outcomes
  - Risk-based
  - Corporate responsibility
  - Comfort + Confidence

- Better Regulation – Self Regulation

“When a Declaration is sent to us by a Qualified Person showing that excavated materials are to be dealt with as set out in the DoW CoP, we will take the view that the materials on the site where they are to be used will not be waste”

- EA using sites operating under the DoW CoP themselves
- EA have a registered Qualified Person

- Resources focused – high risk activities
Regulator savings….

Per env. Permit / exemption:-
• EA time mostly - checking operator qualifications
  • past offences
  • company registrations / finance
  • pre-application discussions (1hr SP / 15 hr BP)
• Est. Σ time ~ 21 hours / Standard Permit, not inc. technical reviews.

If all DoW CoP Declarations were permits / exemptions (Standard)

# Declarations = 1,676 since 2009 (actual number = higher as a percentage are 2+ site transfers)
• 1,676 x 21 hours = 35,196 hrs

• 35,196 hrs / 8 hr / day = 4,400 staff days

• 4,400 days / 6 years = 733 staff days per yr
Case Studies. The Bigger Picture. Next Steps
### CL:AIRE Register of Materials

#### DONOR SITE

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Date of Submission</th>
<th>Location</th>
<th>Quantity</th>
<th>Availability From - To</th>
<th>Material Type</th>
<th>Chemical Analysis Available?</th>
</tr>
</thead>
<tbody>
<tr>
<td>D055</td>
<td>Feb 2015</td>
<td>Gatwick</td>
<td>&gt;8936</td>
<td>From March 2015</td>
<td>Non-haz clay / made ground</td>
<td>Ground investigation data available</td>
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<tr>
<td>D054</td>
<td>Feb 2015</td>
<td>Balham, South London</td>
<td>&gt;7000</td>
<td>Immediate</td>
<td>London Clay</td>
<td>Analysis information upon request</td>
</tr>
<tr>
<td>D053</td>
<td>Oct 2014</td>
<td>Blackpits Recycling Centre, Helmdon, NN13 5QD</td>
<td>&gt;Unknown at present</td>
<td>Immediate</td>
<td>Soil, clay, limestone</td>
<td>Available on request – no contamination identified during soil investigation</td>
</tr>
<tr>
<td>D052</td>
<td>Oct 2014</td>
<td>Surrey</td>
<td>6,000m³</td>
<td>3 November 14 – May 15</td>
<td>Made Ground overlying Alluvium overlying inter-bedded Clays, Silts and fine Sands consistent with the Bracklesham Group</td>
<td>Available on request</td>
</tr>
<tr>
<td>D051</td>
<td>Sept 2014</td>
<td>Oxford</td>
<td>&gt;100,000m³</td>
<td>From January 2015 to December 2015</td>
<td>Oxford clay</td>
<td></td>
</tr>
<tr>
<td>D050</td>
<td>July 2014</td>
<td>Mill Hill, North London</td>
<td>25,000m³</td>
<td>Immediately</td>
<td>Reworked London Clay</td>
<td></td>
</tr>
<tr>
<td>D049</td>
<td>June 2014</td>
<td>South Coventry</td>
<td>300,000m³</td>
<td>January 2015</td>
<td>Clay and Mercia Mudstone</td>
<td></td>
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<tr>
<td></td>
<td>Volume</td>
<td># of entries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------</td>
<td>--------------</td>
<td></td>
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<td></td>
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<tr>
<td>Donor</td>
<td>933,937</td>
<td>32</td>
<td></td>
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<tr>
<td>Receiver</td>
<td>5,874,713</td>
<td>37</td>
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<tr>
<td>FSTF</td>
<td>1,927,000</td>
<td>13</td>
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## DoW CoP Adoption

Since launch in September 2008 to end July 2015:

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>DoW CoP Declarations made</td>
<td>1,676</td>
</tr>
<tr>
<td>~ vol. of material used with DoW CoP (m³)</td>
<td>29,309,463</td>
</tr>
<tr>
<td>Qualified Persons registered</td>
<td>250</td>
</tr>
<tr>
<td>Delegates on training courses</td>
<td>690</td>
</tr>
</tbody>
</table>
DoW CoP Adoption

# Declarations

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800


# Declarations
DoW CoP Adoption
Key Features of the DoWCoP

- Voluntary
- Living initiative
- England & Wales
- Efficient-regulation
- Integrity
- Principles – non-waste status
- Risk Based Waste
- Env. Permit /Exemption
- Non-waste status sooner
- Existing Frameworks
- Established
Cluster Project
394,422m³
Type of material - Donor site: clean, inert
Type of material - Hub site: former landfill, C&D waste inc. inert waste + quarry overburden

<table>
<thead>
<tr>
<th></th>
<th>DoW CoP (Costs)</th>
<th>Dig &amp; Dump (Costs)</th>
<th>Savings by using DoW CoP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental &amp; Social costs &amp; savings</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No. of vehicle journeys</td>
<td>56,828</td>
<td>58,362</td>
<td>1,534</td>
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<tr>
<td>No. of vehicle road miles</td>
<td>56,511</td>
<td>69,712</td>
<td>13,201</td>
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<tr>
<td>CO₂ emissions (kg CO₂)</td>
<td>25,431</td>
<td>31,371</td>
<td>5,940</td>
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<tr>
<td>GHG emissions (kg CO₂e)</td>
<td>30,516</td>
<td>37,644</td>
<td>7,128</td>
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<tr>
<td>Fuel Consumption (litres)</td>
<td>25,440</td>
<td>31,386</td>
<td>5,946</td>
</tr>
</tbody>
</table>
Cluster Project
394,422m³
Type of material - Donor site: clean, inert
Type of material - Hub site: former landfill, C&D waste inc. inert waste + quarry overburden

<table>
<thead>
<tr>
<th>Economic costs &amp; savings</th>
<th>395</th>
<th>1,141,439</th>
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<tbody>
<tr>
<td>DoW CoP training (£395 pp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualified Person (£) 500 per day</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Removal to landfill &amp; purchase of new material (£)</td>
<td></td>
<td>1,142,834</td>
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<tr>
<td>Fuel cost (£)</td>
<td>64,423</td>
<td>79,472</td>
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<tr>
<td>Total financial costs including fuel (£)</td>
<td>65,818</td>
<td>1,222,306</td>
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Direct Transfer Project
1,250 m³
Type of material: clean, naturally occurring

<table>
<thead>
<tr>
<th>Environmental &amp; Social costs &amp; savings</th>
<th>DoW CoP (Costs)</th>
<th>Dig &amp; Dump (Costs)</th>
<th>Savings by using DoW CoP</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of vehicle journeys</td>
<td>192</td>
<td>384</td>
<td>192</td>
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<tr>
<td>No. of vehicle road miles</td>
<td>2,304</td>
<td>2,880</td>
<td>576</td>
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<tr>
<td>CO₂ emissions (kg CO₂)</td>
<td>1,073</td>
<td>1,296</td>
<td>259</td>
</tr>
<tr>
<td>GHG emissions (kg CO₂e)</td>
<td>1,244</td>
<td>1,554</td>
<td>310</td>
</tr>
<tr>
<td>Fuel Consumption (litres)</td>
<td>1,038</td>
<td>1,297</td>
<td>259</td>
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</table>
Direct Transfer Project
1,250 m³
Type of material: clean, naturally occurring

<table>
<thead>
<tr>
<th>Economic costs &amp; savings</th>
<th>(£)</th>
<th>(£)</th>
<th>(£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DoW CoP training (£395 pp)</td>
<td>395</td>
<td></td>
<td>70,793</td>
</tr>
<tr>
<td>Qualified Person (£) 500 per day</td>
<td>1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removal to landfill &amp; purchase of new material (£)</td>
<td>72,188</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel cost (£)</td>
<td>2,627</td>
<td>3,283</td>
<td>656</td>
</tr>
<tr>
<td>Total financial costs including fuel (£)</td>
<td>4,022</td>
<td>75,471</td>
<td>71,449</td>
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</tbody>
</table>
Summary & Questions