



# Materials Management Planning

— — —  
Opportunities & Pitfalls

Danny Hope – Technical Director

Hydrock 

# Introduction

- Legislation & guidance
- CL:AIRE Code of Practice
- What is required
- Scenarios
- Verification
- Case studies
- Opportunities
- Pitfalls
- What's new



# Legislation

- Complex waste management legislation
  - EU Waste Framework Directive
  - Hazardous Waste Regulations
  - Environmental Permitting Regulations
  - Landfill Regulations
- Land Contamination
  - Town & Country Planning Act 1990
  - Part 2A Environmental Protection Act 1990
  - Contaminated Land Regulations
  - Water Resources Act 1991
  - Water Framework Directive



# Guidance

- Materials Management
  - CL:AIRE Definition of Waste Code of Practice
  - Environmental Permitting
  - Exemptions
  - WRAP
- Land Contamination
  - Part 2A Statutory Guidance
  - National Planning Policy Framework
  - CLR11 Model Procedures
  - BS10175 Investigation of Contaminated Land
  - Risk assessment modelling



# Waste Definition

- Waste is defined by the EU in the Waste Framework Directive as:

“any substance or object that the holder discards, intends to discard or is required to discard”

- With regard to soil this can be interpreted as any materials excavated from the ground become a waste.
- Hence, UK government needed to act so that the construction industry was not overly burdened by the definition.



# CL:AIRE Code of Practice

CL:AIRE Definition of Waste: Development Industry Code of Practice:

- Provides a clear, consistent and efficient process which enables the reuse of excavated materials on-site or their movement between sites.
- Supports the sustainable and cost effective development of land.

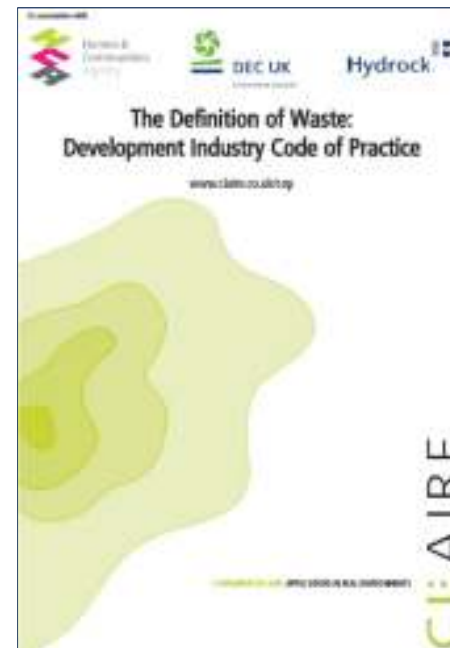


# CL:AIRE Code of Practice

- V1 2008, allowed for materials movements within ‘a site’ – known as a ‘site of origin’ movement.
- V2 2011, also allows materials movements (imports and exports) of clean naturally occurring soil and mineral materials; material treated as part of a cluster project; and materials from fixed soil treatment facilities.

Risk based approach to re-use of materials

- not always destined for landfill
- can often be accommodated within the scheme by good design



# Demonstrating Compliance

Four factors required to be demonstrated:

1. Protection of human health and the environment
2. Suitability for use without further treatment
3. Certainty of use
4. Quantity of material

Demonstrating the four factors – A Materials Management Plan (MMP) – must be produced prior to excavation

Two routes:

1. Contamination present or suspected - remediation strategy
2. Contamination not present or suspected - design statement





# Route to Compliance

- Desk study
- Regulator liaison
- Ground investigation
- Remediation strategy
- Regulator liaison
- Materials management plan
- Qualified person declaration
- Verification
- Regulator sign-off



# Arisings Applicable to the Code of Practice

- Soil, both topsoil and sub-soil, parent material and underlying geology
- Soil and mineral based dredgings
- Ground based infrastructure that is capable of reuse within earthworks projects, e.g. road base, concrete floors
- Made Ground
- Source segregated aggregate material arising from demolition activities
- Stockpiled excavated materials that include the above



# Arisings NOT Applicable to the Code of Practice

- Soils which have been contaminated with invasive weeds except in accordance with best practice guidance e.g. Japanese Knotweed Code of Practice
- Specific excavated infrastructure material, such as pipework and storage tanks
- General construction wastes, e.g. plasterboard, glass, wood, etc
- Demolition wastes other than above
- Extractive waste within the scope of Mining Waste Directive



# Code of Practice Scenarios (1)

Site of Origin

(Suitable for use with no Treatment - no Permit)



Site of Origin

(Suitable for use with Treatment - Permit Required)



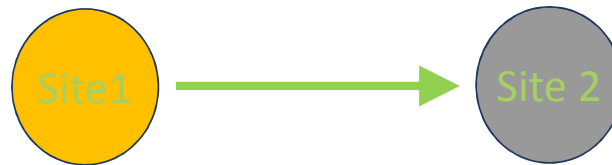
# Code of Practice Scenarios (2)

Greenfield to Greenfield (no Permit)



Direct Transfer

Greenfield to Brownfield (no Permit)



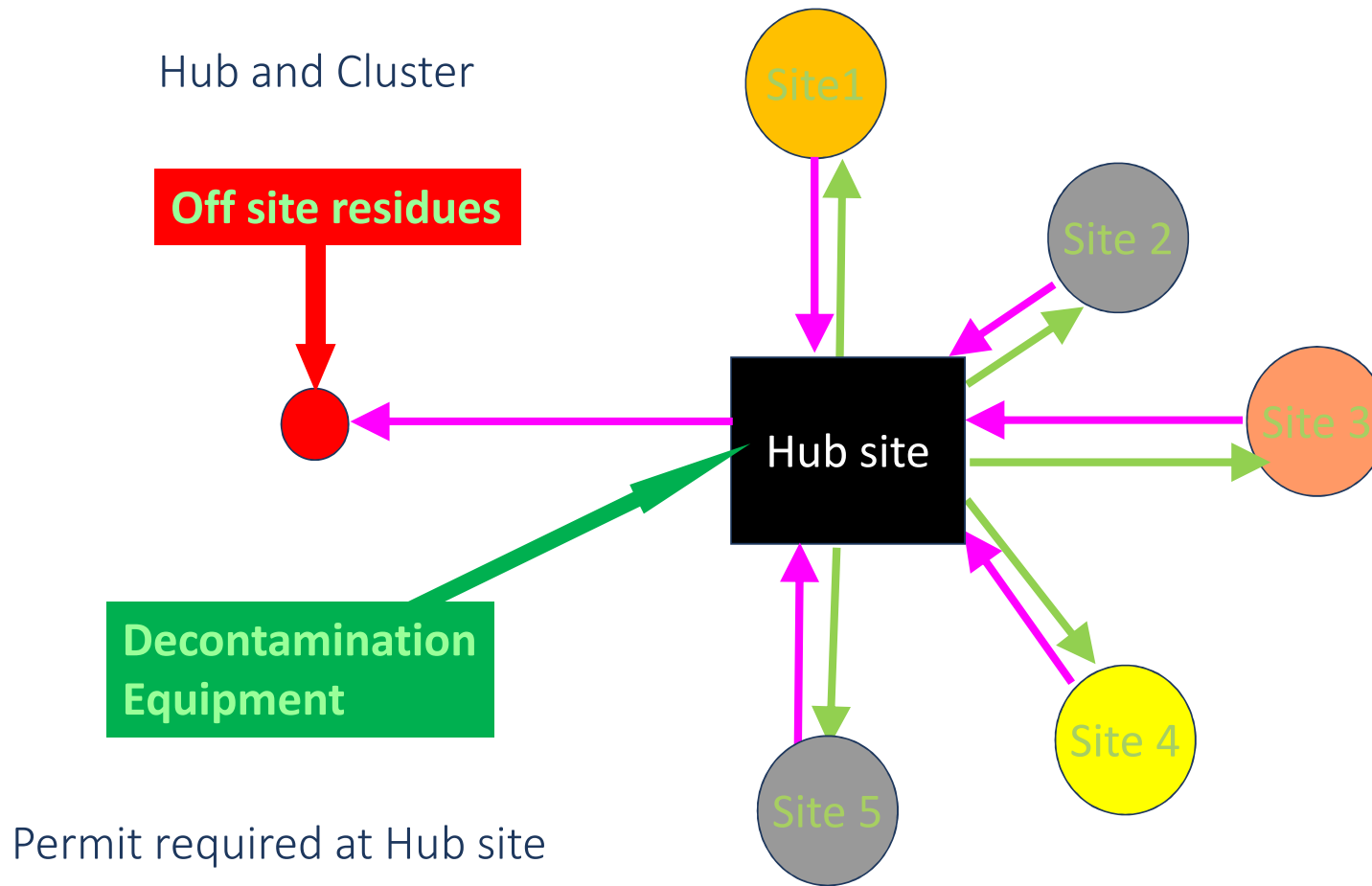
Direct Transfer

Brownfield to Brownfield (Permit on one of the sites)

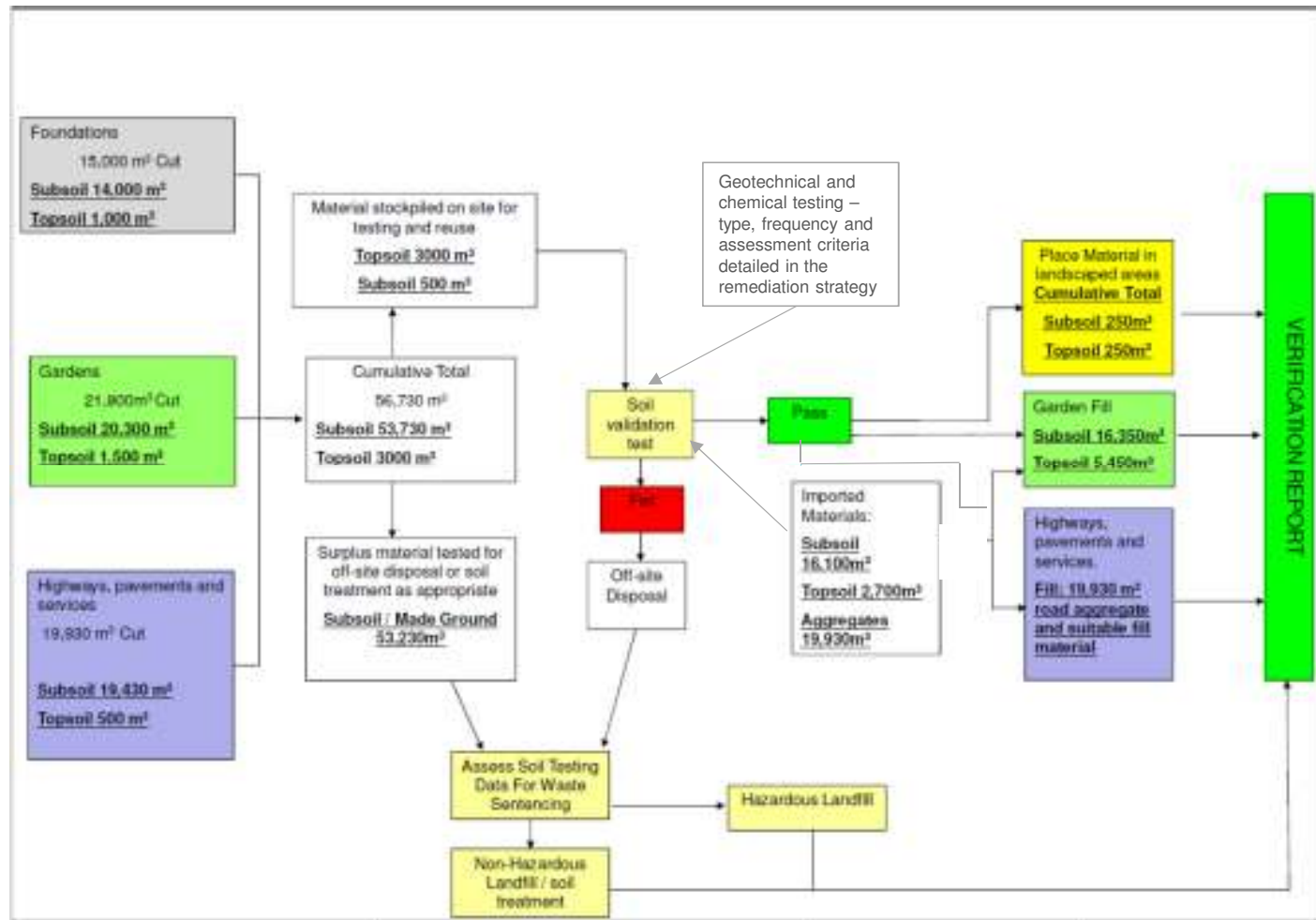


Regardless of whether there is actual treatment

# Code of Practice Scenarios (3)



# Example Materials Movement Schematic



# Good Practice & Verification

- Audit trail to show that materials and wastes have gone to the correct destination
- Document any changes that may have been made to the MMP
- Description of how the use of materials links with the Remediation Strategy
- Reference to site investigation data / risk assessments / earthworks specification
- Validation testing and comparison to appropriate assessment criteria
- Treatment records (if any)
- Laboratory analysis certificates and appropriate sampling plans
- Waste transfer notes (if waste disposal) / Delivery tickets (if imports) / test results
- Record of contingency arrangements that had to be implemented (if any)
- Record of quantity of materials used
- Photographic records, including segregation / stockpiling

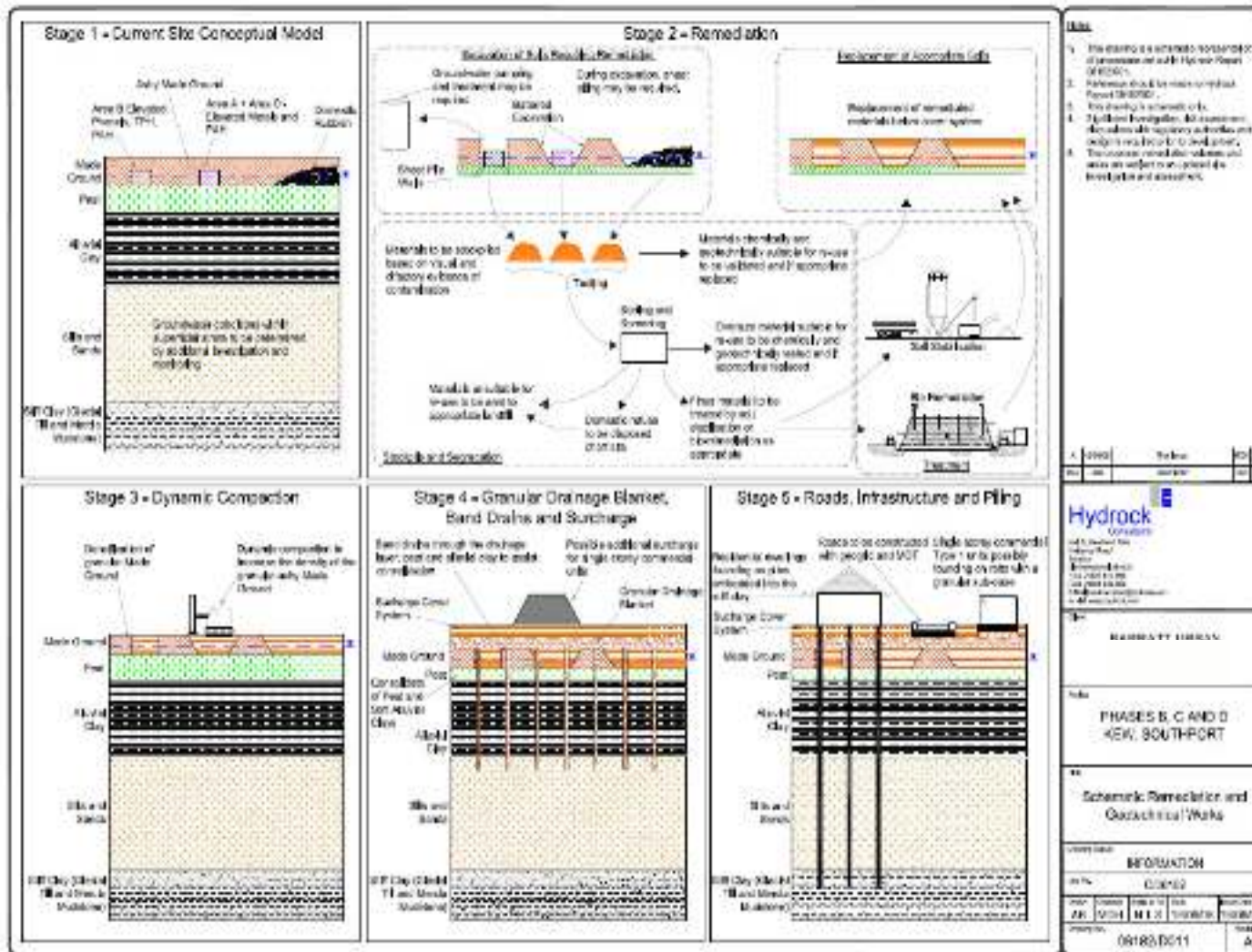


# Case Study 1 – Town Lane, Southport

- C.200,000m<sup>3</sup> requirement for materials for the enabling works
- Materials required, mixture of greenfield and brownfield sources
- Hub and cluster MMP arrangement
- Hub site (Town Lane) permitted
- Groundwater collection and treatment system
- Surcharge mounds
- Piling of access road to enable early development phase
- Dynamic compaction
- Bioremediation
- Stabilisation



# Case Study 1 – Town Lane, Southport



# Case Study 1 – Town Lane, Southport



## Case Study 2 – Cemex Lytag Plant, Eggborough

- Underground fuel line and fuel storage tanks
- Complex demolition and crushing of reinforced concrete
- hardstanding and factory foundations
- Screening of lagoon sludge
- Stabilisation of silts
- Bioremediation of fuel oil contaminated soil



## Case Study 2 – Cemex Lytag Plant, Eggborough

- Breaking out of reinforced concrete foundations and ground floor slabs up to 7m deep
- Removal of drainage and service ducts
- Removal & remediation of a bund (previously used to screen the factory from local residents)
- Screening of lagoon sludge to remove hard materials
- Geotechnical stabilisation of lagoon silts via amendment
- Ex-situ bioremediation of hydrocarbon-impacted soils
- Free product skimming from perched water and disposal



## Case Study 2 – Cemex Lytag Plant, Eggborough

- Extraction and crushing of concrete foundation blocks, each larger than 100m<sup>3</sup>
- Over 95% of materials remediated, recycled and reused on site
- Hydrocarbon contaminated soils from around the former fuel lines and tanks treated on site via ex-situ bioremediation
- Delivery of a site suitable for commercial/ industrial development within a 3 month programme

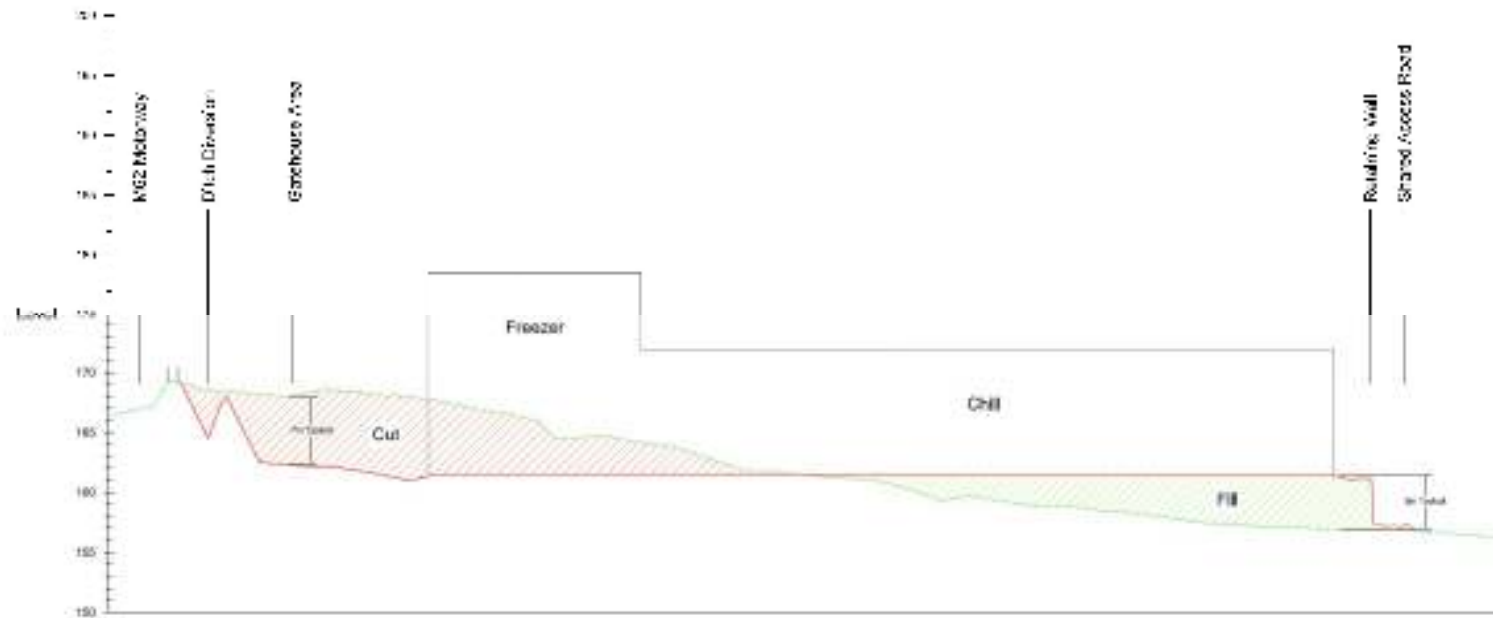


## Case Study 3 – ASDA CDC, Rochdale



# Case Study 3 – ASDA CDC, Rochdale

- C.300,000 m<sup>3</sup> materials movements within site of origin
- 7m cut, 6m fill depths

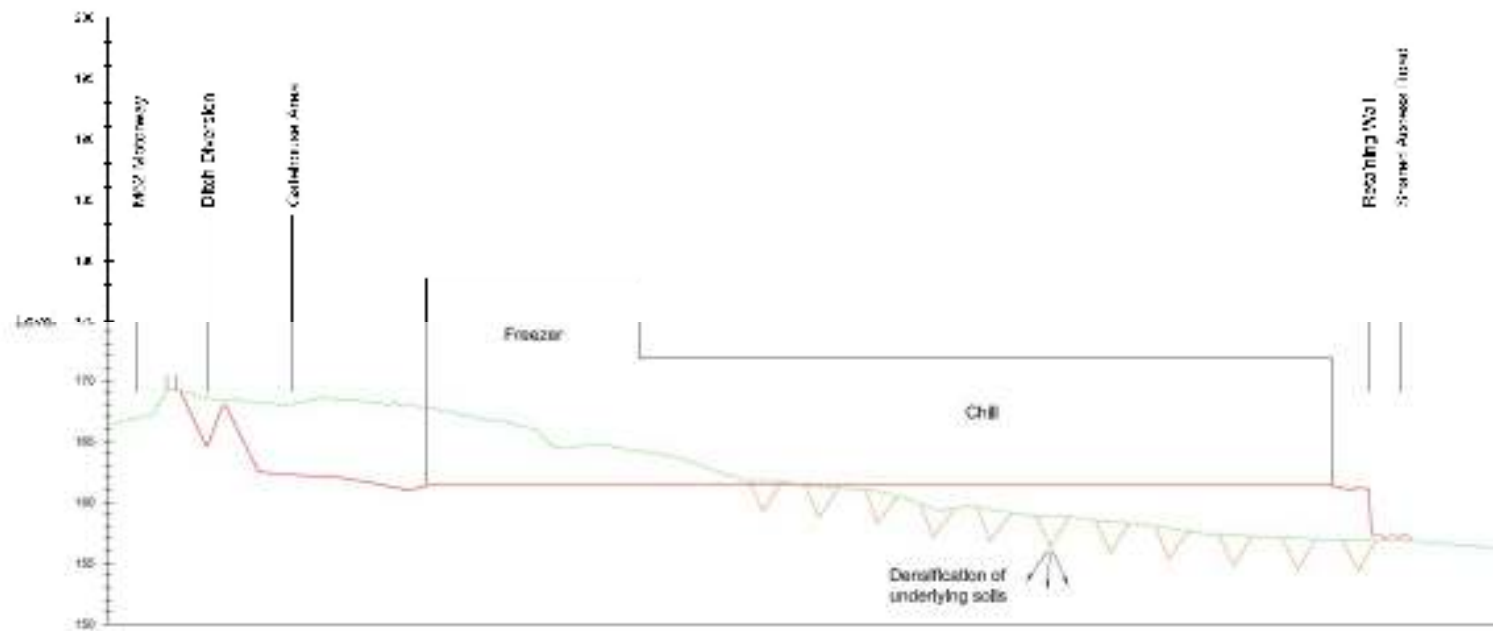




# Case Study 3 – ASDA CDC, Rochdale

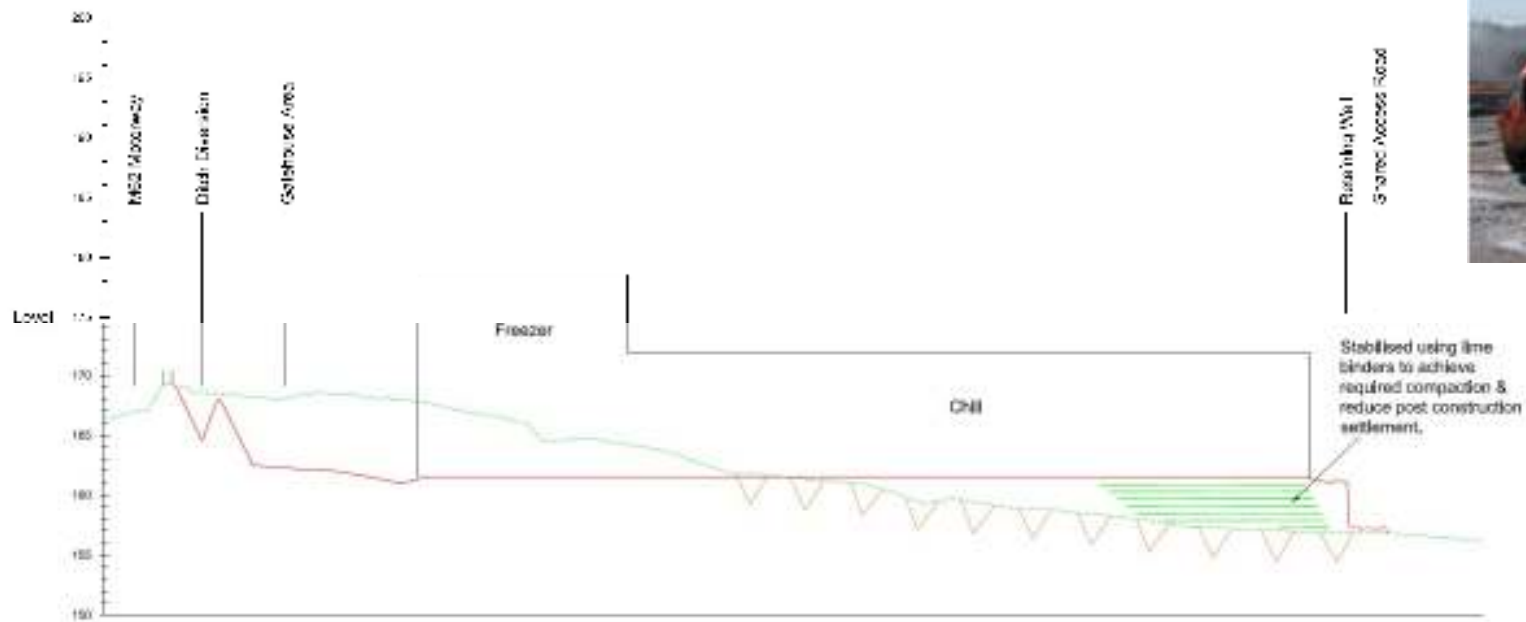
3 stage treatment:

1. Dynamic Compaction – pre materials movements



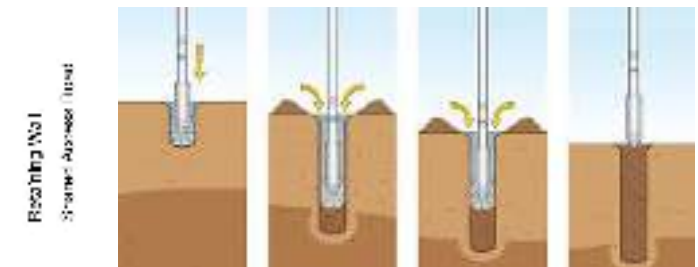
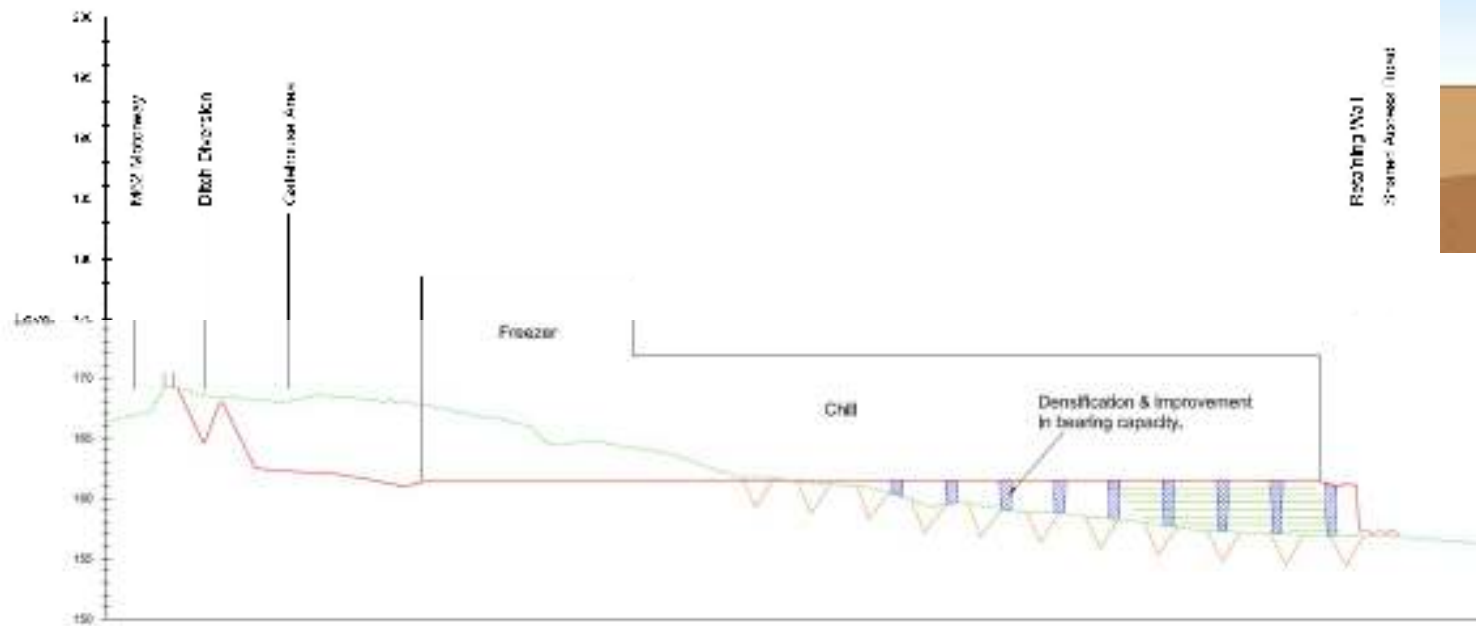
# Case Study 3 – ASDA CDC, Rochdale

## 2. Stabilisation of Fill – post materials movements



# Case Study 3 – ASDA CDC, Rochdale

## 3. Vibrostabilisation



# Opportunities / Benefits (1)

- Identifies where materials can be suitably used on sites for various purposes
- Integrates the Remedial Method Statement with Value Engineering exercise (e.g. optimum level raising)
- Enables positive selection of which soils get re-used and which get disposed of from site
- Identifies mechanisms for exporting soils from site to site through appropriate Environmental Permitting (Hub and Cluster)
- ‘Self Regulated’
- Reduced haulage (reduced CO2 emissions)
- Less landfilling
- Reduced use of new aggregates (quarrying)



## Opportunities / Benefits (2)

- Lessened risk from contaminated materials
- Less cost (landfill, haulage, new aggregates)
- Reduced impacts on neighbouring residents (noise, vibration, dust, exposure to hazardous substances)
- Improvement in company CSR
- Cheaper and easier than applying for, managing and surrendering an environmental permit
- Reduced blight as a site is deemed 'suitable for use' on completion
- Contributes to achieving government targets:
  - recovering 70% of construction and demolition waste by 2020
  - ensuring that 90% of suitable brownfield sites have planning permission for housing by 2020



# Pitfalls

- Inadequate site investigation – unforeseen problems
- Badly surveyed / estimated materials types and quantities
- Poor record keeping / data management / missing information
- Staff changes / lost knowledge
- Insufficient data to provide verification – no regulator sign-off
- Incorrect interpretation of the CoP
- No contingency arrangements
- Surplus or shortfall of materials
- Programme delays
- Rising costs
- Contractual disputes / legal action
- Regulator prosecution



# What's New?

- Admin fee of £40 per declaration from 1<sup>st</sup> Oct 2016
- A recent court judgement has led to a slight change of opinion from the Environment Agency on the use of the DoWCoP. The QP now needs to enquire with the author of the MMP:
  - Whether the project has been the subject of an application for a deposit for recovery permit and if so whether that application was refused
  - Establish and record the contractual relationship in place between the supplier and recipient of soil materials
- DoWCoP V3?



# DoWCoP V3?

Streamlining for small projects:

- Threshold limit, possibly 1,000m<sup>3</sup> or 5,000m<sup>3</sup> for permitted sites
- Smaller MMP and Declaration

Expansion of direct transfer scenarios:

- Not clean - specified parameters
- Not naturally occurring - specified parameters

Manufactured soils:

- Allow PAS 100 compost





# DoWCoP V3?

Soil treatment facilities:

- Potentially a QP declaration following the treatment of 10,000m<sup>3</sup> at soil treatment facilities

Role of QP:

- Potentially greater involvement in verification reporting

Watch Point 15

- No detriment policy

Longer term storage:

- Potentially 3 years





Hydrock.com | @hydrocknews

Danny Hope

Technical Director, Land Quality

Location: Manchester

Phone: 0161 914 9760

Email: [dannyhope@hydrock.com](mailto:dannyhope@hydrock.com)

