Use of the Definition of Waste Code of Practice

Major Projects

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Applications Used

- **Re-use on site of origin**

  Naturally occurring earthworks materials

  Aggregates recycling

- **Re-use of contaminated materials on site of origin**

  Landfill Arisings

  Tar Bound Materials

- **Direct Transfer between sites**

  Both imported and exported

Re-use on Site of Origin – M25 DBFO

- **M25 30 year concession to improve and maintain**

- **Initial Upgraded Sections – Motorway Widening**

  Junctions 16 to 23 and Junctions 27 to 30

  1,900,000 m^3 of surplus cut to fill balanced

- **Later Upgraded Sections – Managed Motorway**

  Junctions 5 to 7 and Junctions 23 to 27

  300,000 m^3 of surplus cut to fill balanced

Management of Earthworks Operations – M25 DBFO

- Site investigation and quality control of materials placed
- Specific soils managed and stockpiled for re-use
- Design and build to optimise material re-use
- Environmental Bunds Designed
  Permanent visual screen provided
  Noise levels reduced by up to half
  Landform returned to agriculture
  Sustainable solution

- Planning and landowner agreements
- Regular inspections by County Planning Landscape Officer

Re-use in Earthworks Bunding – M25 DBFO

“I have especially enjoyed my relationship with SBB and am very proud of what we have achieved in such a short time’’
Hertfordshire County Council Restoration Manager Spatial and Land Use Planning

Aggregates Recycling – M25 DBFO

- **Initial Upgraded Sections – Motorway Widening**

  Junctions 16 to 23 and Junctions 27 to 30

  Net importer of Construction & Demolition Waste

  Over 1m tonnes processed into recycled aggregates on site

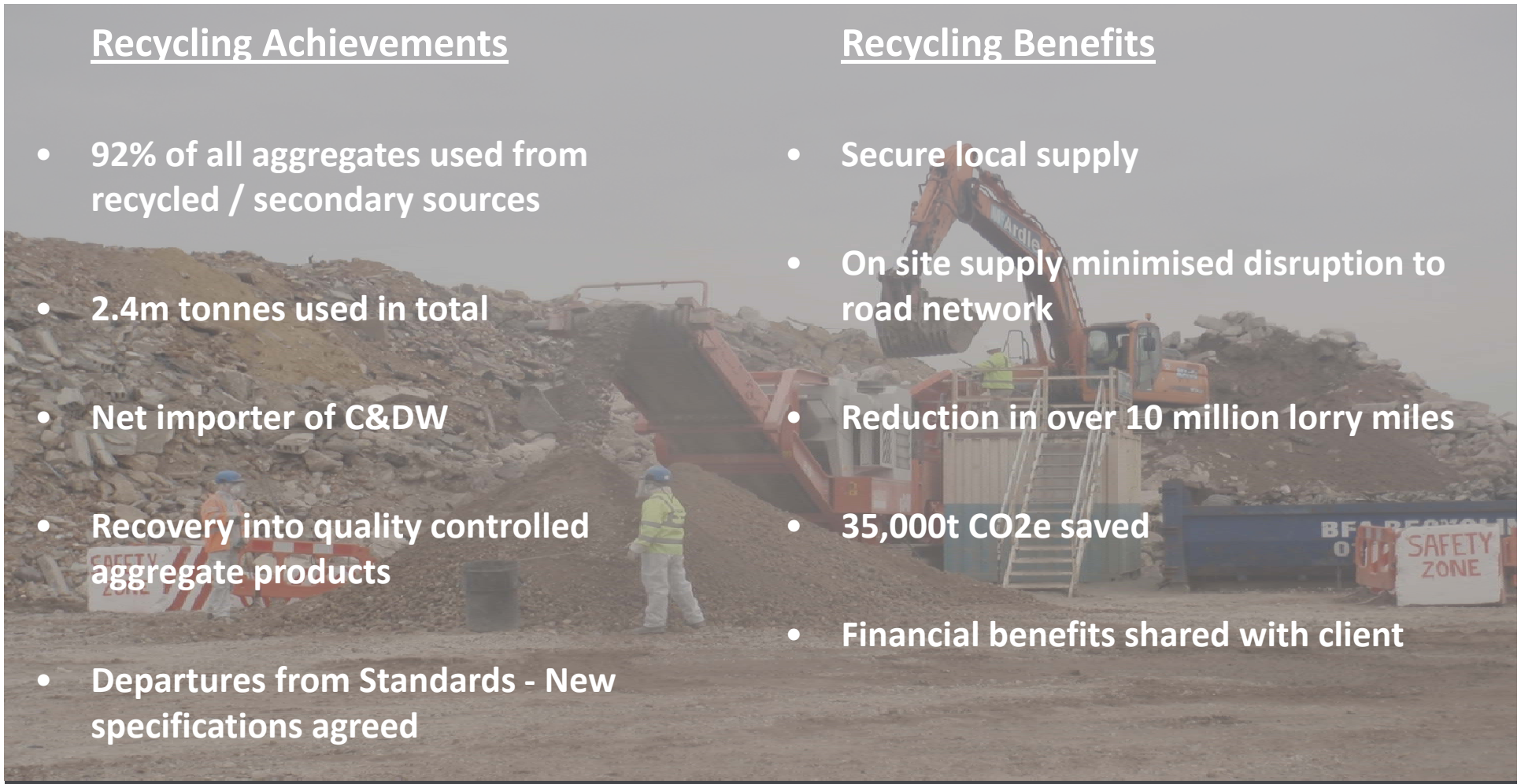
- **Later Upgraded Sections – Managed Motorway**

  Junctions 5 to 7 and Junctions 23 to 27

  Environmental Permit for crushing and screening on site

  Over 100,000 tonnes processed and re-used on site

Aggregates Recycling – M25 DBFO



Recycling Achievements

- 92% of all aggregates used from recycled / secondary sources
- 2.4m tonnes used in total
- Net importer of C&DW
- Recovery into quality controlled aggregate products
- Departures from Standards - New specifications agreed

Recycling Benefits

- Secure local supply
- On site supply minimised disruption to road network
- Reduction in over 10 million lorry miles
- 35,000t CO_2e saved
- Financial benefits shared with client

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Use of Recycled Aggregates – M25 DBFO

Road Foundation layers

Widened Earthworks slopes

Re-use of Contaminated Materials – M25 DBFO

- **M25 passed in cutting through 6 former landfill sites**
- Contamination leached into surrounding soils
- Detailed Ground Investigation and risk based analysis
- Specific zones to accommodate materials
- Acceptance criteria developed for each zone

- Colour coding and tracking system – Tickets and lorry windscreen cards

- Simple system of workforce engagement

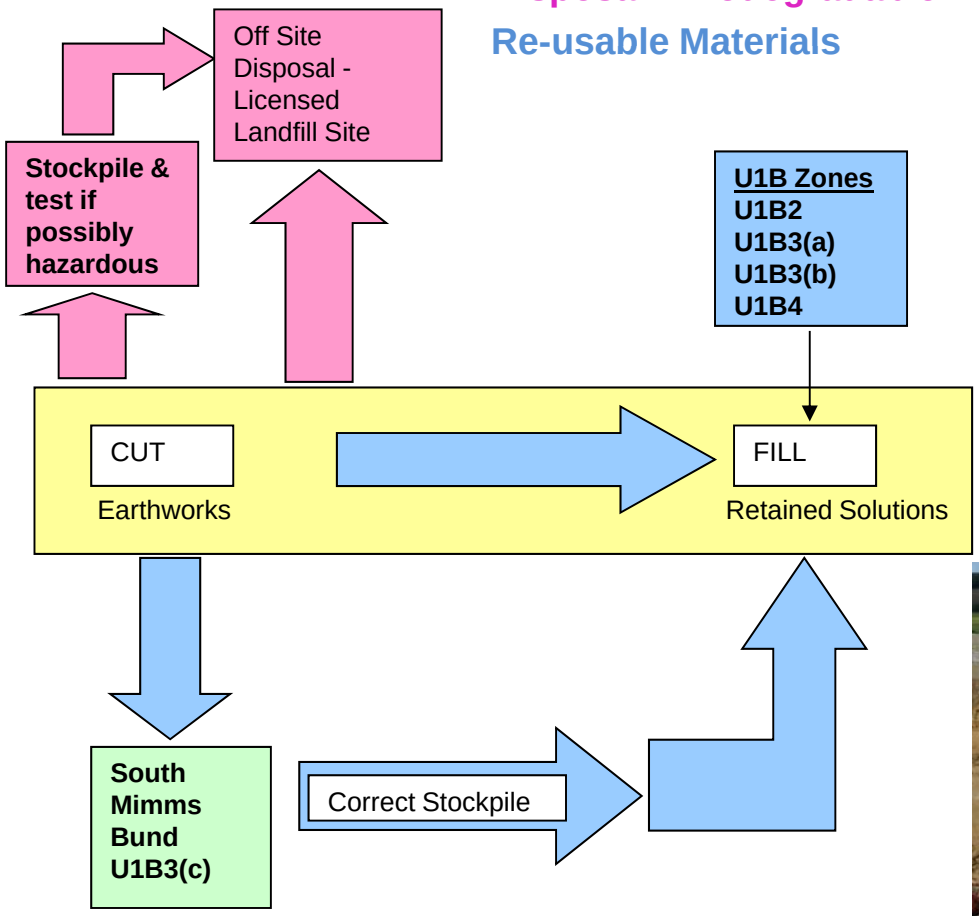
- Volume of disposal reduced significantly

Re-use of Contaminated Materials – M25 DBFO

Key:

Disposal - Biodegradable

Re-usable Materials



Colour code classification zones:

U1B1 = **Red**

U1B2 = **Orange**

U1B3a = **Yellow**

U1B3b = **Blue**

U1B3c = **Green**

U1B4 = **White**

Colour coding classification included on permit to dig

Each deposition zone marked with colour classification

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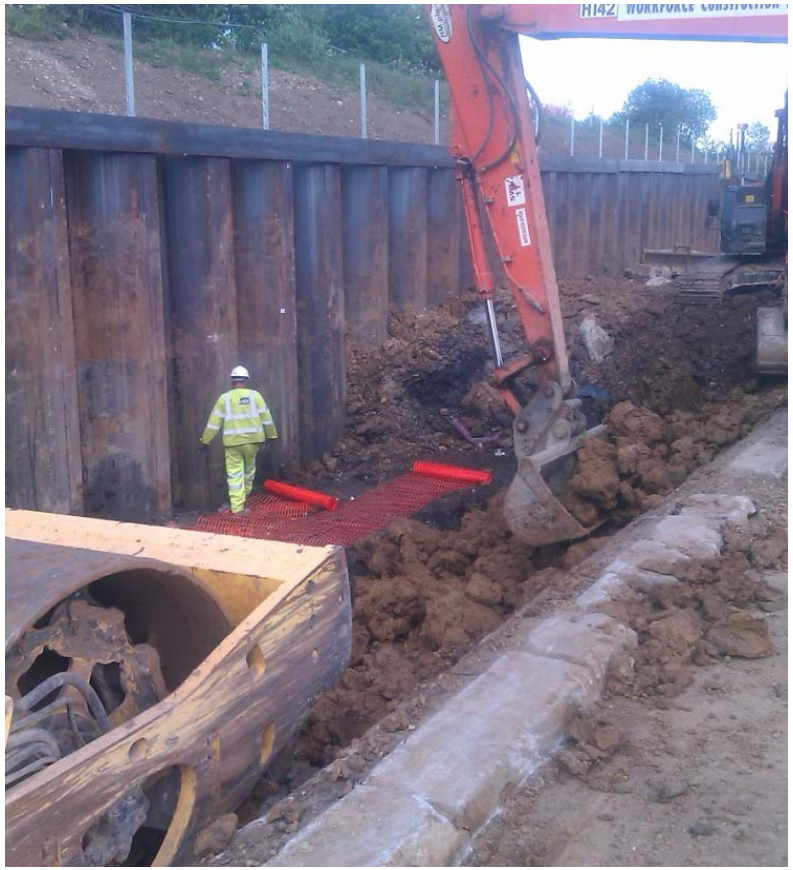
Contaminated Materials – M25 DBFO

Winner in category ''Best Re-use of Materials'' – Brownfield Briefing Awards 2011

Separation and excavation of landfill material



Indicator layer installed prior to backfilling with clean material for installing services

Re-use of Tar Bound Materials – A3 Hindhead

- 4,500m3 tar bound materials identified in existing A3
- Planings used as aggregate in bound road foundation layer
- Planings screened to required size – 20mm down
- Planings mixed with cement / PFA and bitumen through plant
- Foamix bound material laid with paver and compacted with vibratory rollers
- Saving in disposal off site – Hazardous Waste
- Saving in primary aggregates required

Processing of Tar Bound Road Planings – A3 Hindhead

Screening of planings to size

Mixing of foamix bound material

Laying of Treated Tar Bound Road Planings – A3 Hindhead

Laying of foamix base

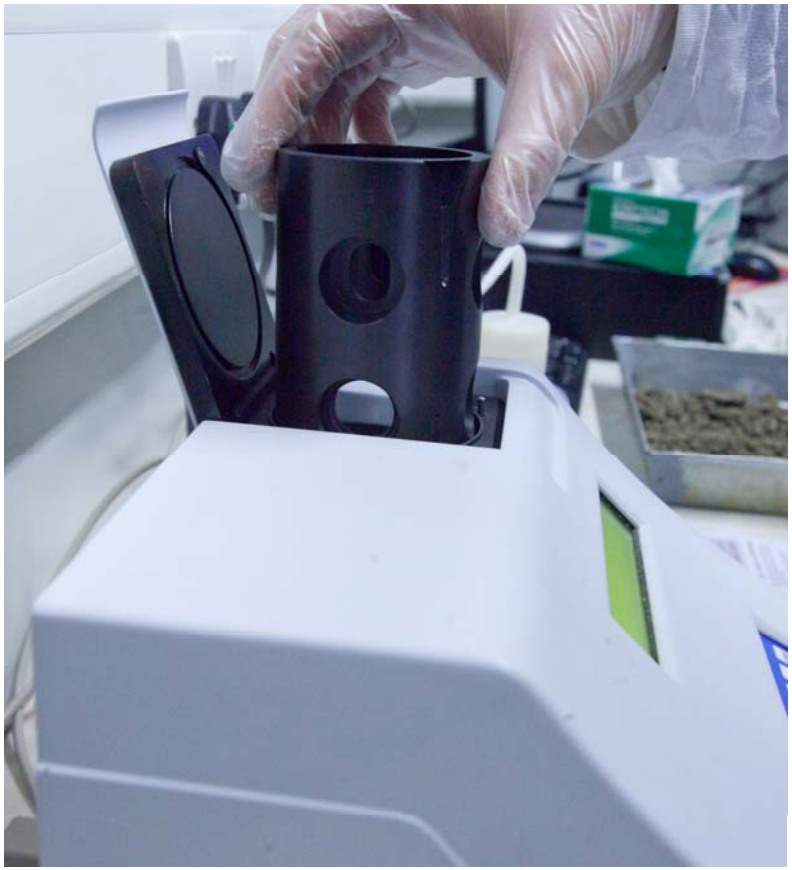
Compaction of foamix base

Re-use of Tar Bound Materials – A46 Newark

- Over 30,000 tonnes identified in existing A46 alignment
- Extensive pavement survey – all cores where tar identified from PAK-Marker spray tested for quantitative analysis
- Detailed risk based assessment to enable re-use
- Routine verification testing carried out to verify separation of tar bound and clean planings

Rapid Analysis of Tar Bound Materials – A46 Newark

Portable UVF testing apparatus

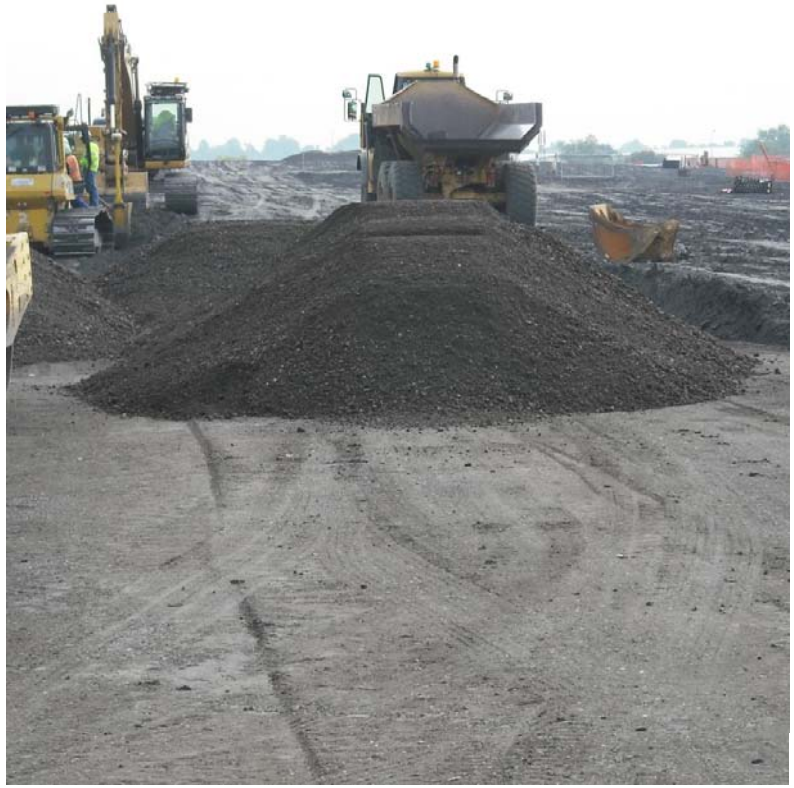


PAH levels determined to enable site control

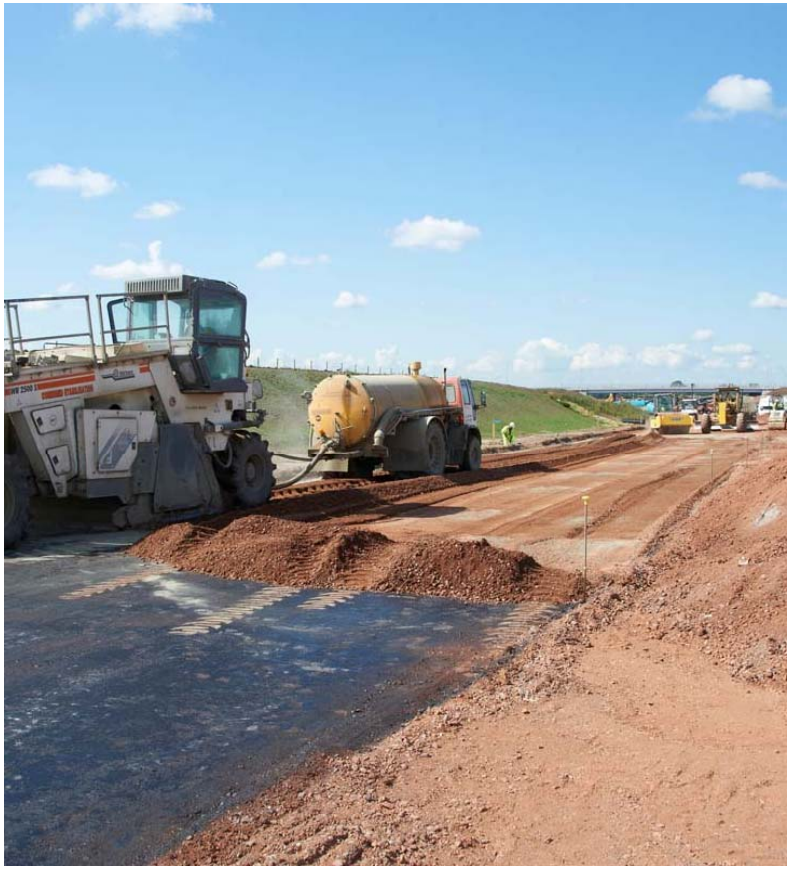
Re-use of Tar Bound Materials – A46 Newark

- Tar bound planings used as aggregate in bound road foundation layer
- Planings spread in layer to form 60/40 blend with primary aggregate
- Aggregate mixed with cement in-situ and compacted with vibratory rollers
- Saving in disposal off site – Hazardous Waste
- Saving in primary aggregates required

Re-use of Tar Bound Materials – A46 Newark

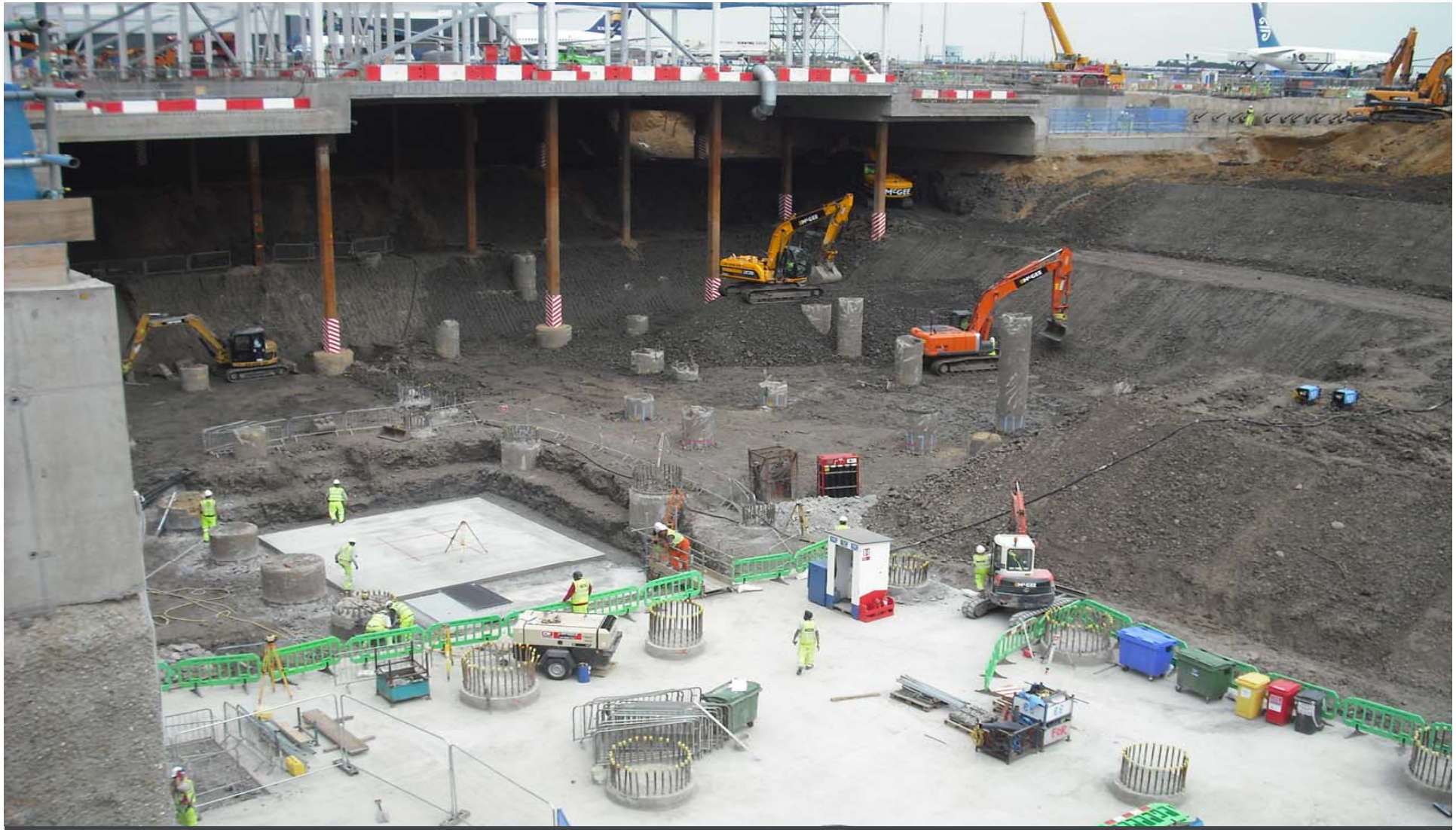


Planings spread in layer to form 60/40 blend with primary aggregate



In-situ treatment of composite aggregate (planings and granite) to form bound road foundation

Direct Transfer Between Projects – Heathrow T2b



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Direct Transfer Between Projects – Heathrow T2b

- New Terminal 2b pier building to service A380 aircraft
- Suitable London Clay supplied to local project
- 400,000m³ re-used to create engineered cap to leaking landfill site
- Planning permission obtained by landfill operator
- 400 loads per day exported from site
- Quality control of engineered clay cap

Direct Transfer Between Projects – Heathrow T2b

Direct Transfer Between Projects – Bridgwater

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Direct Transfer Between Projects – Bridgwater

- New link road to distribution centre
- 30,000m³ of suitable fill materials imported
- Sourced from local projects (mainly housing developments)
- Inspected and tested at source to confirm suitability
- MMP updated regularly
- Quality control on site

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