Recycling in Landscape
On site Recycling and use of Recycled Landscape Products

Opportunities
- regain sites,
- remediate soil,
- reuse insitu resources,
- recycle construction & demolition waste
- minimise export of exiting materials
- minimise import of new materials

Waste Arising
- of the materials delivered to the UK’s building sites,
- 90 m tonnes/year leave in mixed material skips to go straight to landfill.
- 17 - 21 m tonnes/year of packaging and protection
- 13 m tonnes/year is new and unused construction material.

Waste arising
- 33.8 m tonnes (46%) C&D waste
  - mainly hard demolition waste:
    - concrete and bricks,
  - likely to include non-inert material
    - such as timber and plasterboard

BRE facts & figures Waste
- Total industries: 400 m tonnes/year
- Mining & Quarrying: 110 m tonnes/yr
- Construction Ind C&D: 90 m t/yr

Waste Arising
- 23.7 m tonnes (33%) soil
  - including stones and rock and classed as ‘inert’
- 15.0 m tonnes (21%) mixed C&D waste and soil
  - likely to include non-inert waste

Site Autonomy
- No export from site
- No Materials imported to site
- Landscape projects in particular
Resource Efficiency
(CIRIA/VIRIDIS REPORT VR4 2002)

Additions to Built Environment 64%
Waste Generated 36%

What would you do with 36% bigger budget?

Common Waste Causes 1
- Offcuts: 33.2%
- Recyclable packaging: 18.7%
- Excess deliveries 18%
- Temporary materials: 10.3%
- Reusable packaging: 14.4%
- Site Office and Canteen: 4.1%
- Damaged through methods of work: 3.2%
- Unsuitable storage: 1%

Need to divert from landfill:
Toxic/Brownfield sites
- Insitu remediation of site and soil, chemical, filtering, injection, etc.
- Landfill capping: Methane, SO₂, Radon,
- Buildings and/or gas proof membranes
- Ventilation: Active/Passive High/Low level Central/Peripheral

Need to divert from landfill:
Excavated inert materials
- Excavated gravel from site
- Brown Roofs, recreating pebble beaches on roofs
- Excavated subsoil from site
- Redirection of excavated subsoil normally exported from site,
- Opportunities for use on site

Need to divert from landfill:
Demolition materials
- Pre-demolition audit: get involved
- to determine what materials are there and what is reusable
- Stake claim on them for your use
- Dismantle don’t demolish

Need to divert from landfill:
Construction Waste
- Plastics
- Timber
- Glass
- Metals
- Paper and Cardboard
- Concrete and Aggregate
- Road planings

Need to divert from landfill:
Demolition materials
- Reuse and recycling opportunities on site
- Gabions & novel fillings,
- Bricks & Stone in walls and paving
- Rubble in filling, hardcore,
- Gravel in paving and mulch

Site Autonomy
No export from site
Landscape projects in particular

Need to divert from landfill:
Demolition materials
- Recycled into Construction Products
- new and novel uses
Need to divert from landfill:
Landscape waste:
- Excavated soil:
  - Topsoil strip for building
  - Subsoil: Foundations, Basements, Roads, Services and Drains

Need to divert from sewer:
Surface Water:
- Recycle rainwater from roofs and paving
- In water efficient drought resistant landscape
- Porous paving
- Soakaways, SUDS, swales
- Lakes, Rivers and streams
- Leisure and sport: Rowing lakes

Need to divert from sewer:
Foul water:
- Onsite autonomous sewage treatment
- Filtre beds, Reeds, Gabions
- Nutrients for plants and fish
- Lakes and ponds
- Resource for income generation
- Fisheries

Need to divert from landfill:
Green waste:
- Tree felling and trimming
- Plants, shrubs and autumn leaves
- Grass cuttings & turf before site strip
- Weeds with care
- Site strip:
  - Reuse
  - Onsite composting for later reuse

Need to divert from landfill:
Gardener’s Green waste:
- Energy from waste
- Biomass CHP Renewable energy and heat
  - Heat for Greenhouses
  - Energy for street lighting
- PV lighting and other services

Biodiversity retention enhancement
Biodiversity, Eco-Landscape
Landscape Waste management

Need to divert from landfill:
Contractor Facilities waste:
- Recycleable Paper and cardboard
- Recycleable Printer partridges
- Recycleable Plastics polyethylene
- Kitchen and canteen waste
- Washroom and First aid room
Need to divert from landfill:
Visitors Waste
- Segregation bins around site
- Kitchen waste
- Café waste
- Retail waste
- Segregate
- Compostable
- Food waste

A few examples of commonly used recycled materials:

Reused hardwood
- path edging
- seats
- bollards

Recycled aggregate/tarmac for path surfacing
- Tarmac Recycling
- would like to use more.

Self-binding gravel for informal paths
- all quarried!
- We are tending to specify recycled stone now for path sub-bases etc.

Recycled glass aggregate
- for decorative loose paving in gardens

Recycled glass paviors
- Freeform Arts, Green Bottle Unit
- have looked at (but not used yet)

Recycled plastic
- as an alternative to timber
- path edging
- but haven't used yet
- wasn't appropriate for a nature reserve (?)
Other materials

- and other uses
- although haven’t used yet:

Recycled aggregate

- in tarmac
- and other bound surfacing
- re-using existing materials on site
- Colas offer a service turning existing tarmac surfacing into new bound surface

Steel

- railings, gates, seats
- although a lot of steel is recycled anyway
- but we would like to survey suppliers to see what % is

Recycled Construction Products & Materials

Waste

All About Waste

- Waste Facts, Figures and Waste Hierarchy
- Waste reduction in design, specification, construction and in building use.
- Waste & Recycling Websites

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Aftercare Plan

- How do delegates get further info and make it work afterwards?
- Work with NGS
- to add more information to NGS website,
- to enable access to even more useful information.

Useful Websites

- Waste, Exchange, Recycled, Local & Green Construction Product Websites

National Green Specification


Collaboration

NGS Collaboration with Practices

- Where are NGS GreenSpec now?
- Where are you now?
- Are there opportunities to collaborate in development and share the output?