

Circular Economy Workshop – National Highways SDF

23rd August 2023 – 10.00am to 12.00 noon

Welcome & introductions

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Waste & resource use



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[@SupplyCSSchool](https://twitter.com/SupplyCSSchool)



Outcomes

At the end of this workshop you will:

- Have an improved understanding of the circular economy and the drivers that influence it
- *Considered this in the context of your own standards and requirements*
- Have considered opportunities to introduce circular ways of working within your own organisation and on behalf of your clients
- Be able to better explain the challenges and opportunities to your colleagues, customers and supply chain.

Please Participate!



Please use your microphones and cameras – just switch the mics off when not speaking



If you have **QUESTIONS**, feel free to shout out – we are very informal!

Also use the **CHATBOX** please



Join in with the various exercises on Jamboard – I'll explain this in a minute!



SLIDES will be distributed afterwards

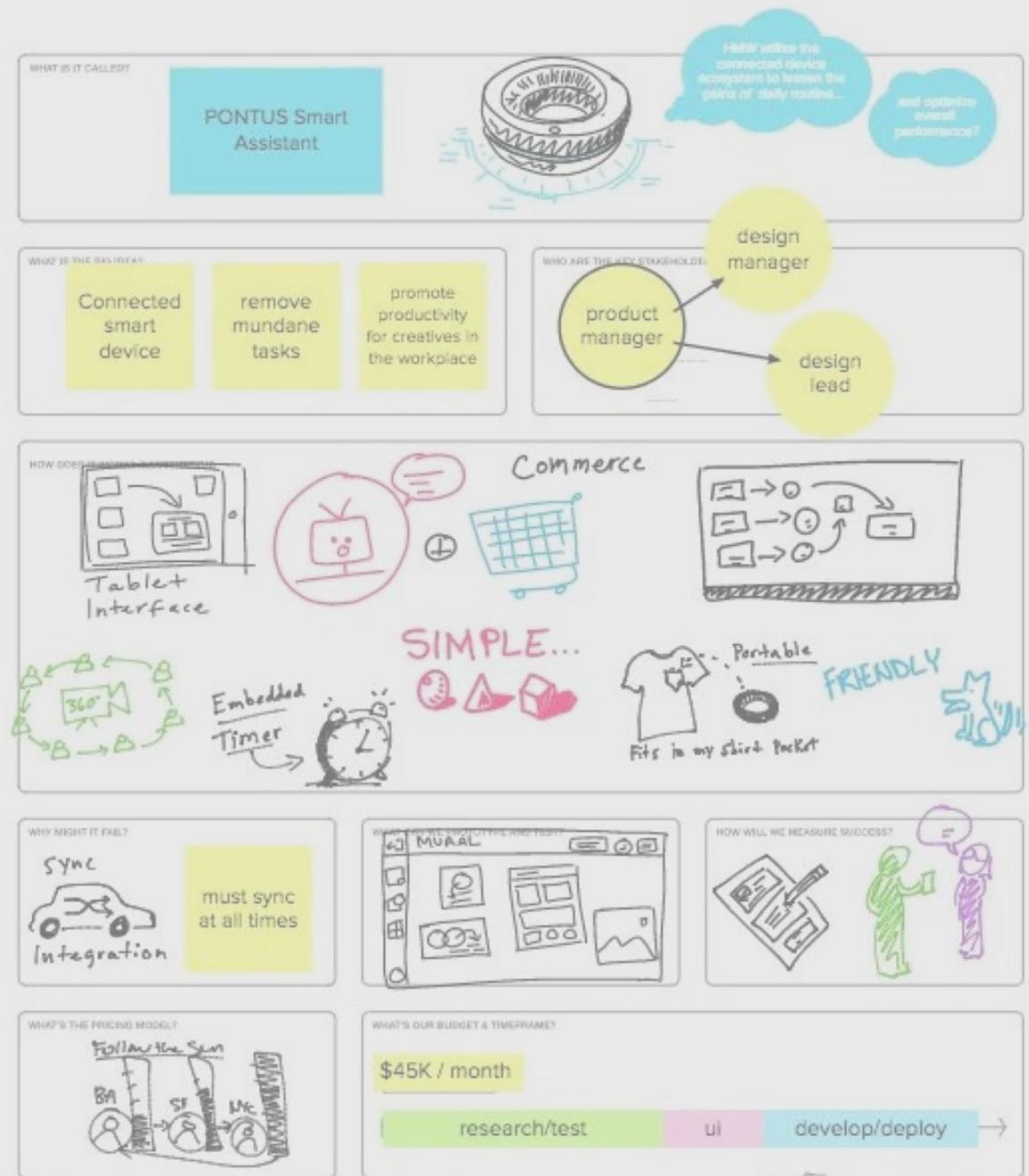
Introductions, using Jamboard and Chat box

- We will introduce Google Jamboard shortly – you just to open this as an interactive document via your browser – use the link we sent you by email or the one we have added in the Chat function of Teams
- If you can't access Jamboard or have something else to ask, just use the Chat function. Again this is in the Teams toolbar
- Also use this to add other comments, keep notes of anything you think could be useful to the group, add your questions etc
- Feel free to shout out – I'm very happy to be interrupted.

<https://jamboard.google.com/d/1jtZoJnB-Ub8BCT46R6R4yGmym2ZR06llq3-f8eGljDc/edit?usp=sharing>

Jamboard

- **FOLLOW** the **link** we sent to your email
- **CREATE** a post it note, double click on an empty space and start writing
- To **MOVE** your post it note around, click on and drag it
- To **DELETE** your post it note, click on it and press the 'Delete' button on your keyboard
- PLEASE DON'T press the "clear form" button!



WE NEED YOUR
FEEDBACK PLEASE



THIS LINK WILL BE AVAILABLE ON THE CHAT:

[LINK](#)

The School is a common approach to...

1. Assessing supply chain sustainability competence
2. Developing suppliers' sustainability knowledge



200+ Partners

22,000+ companies

45,000+ individual learners

200+ Partners

22,000+ companies

45,000+ individual learners

Everything is...



The School's Waste & Resource Use Category Group

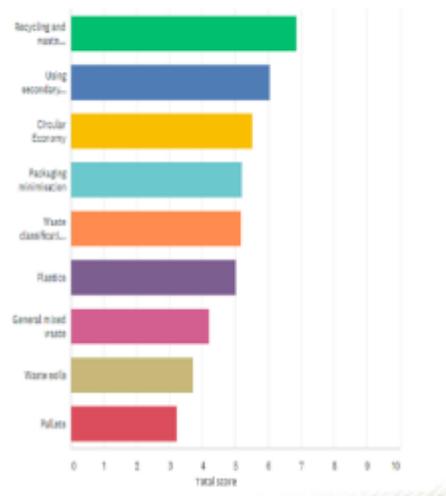


Refreshed
 -Landing page
 -Resources (new and old)



Material Exchange Platforms Mapping
 - Skanska collaboration

Q1. Which aspects of waste and resource efficiency are of interest to you and why? (Ranked from 1-9)



Surveys
 -Member interest
 - Partner plastic waste



Partner case studies

Leadership group support

Our Waste and Resource Use work programme

| Construction project lifecycle waste* | Developing resources to improve outcomes |
|---|--|
| Designing out waste and design for deconstruction | Guidance and events, promoting circularity |
| Understanding limitations of UK waste management infrastructure | |
| Supporting procurement processes | Developing model tender questions and responses |
| Materials consolidation centres | |
| Plastics and aggregate reprocessing companies | Mapping and developing knowledge on how to engage |
| Data | material passports and waste performance reporting templates |
| Materials exchange platforms* | Set up and promote a map showing where these are, how to use etc |
| Zero waste to landfill | including greater input from waste management providers and demolition contractors |
| Embodied carbon and net zero pathways | |
| Packaging projects | Guidance, events, collaboration, research – Infra/Fit Out/M&E? |
| Social value and supporting social enterprises | Research and collaboration opportunities |
| Soils and aggregates | Guidance and exchange platforms |
| Subcontractor guidance | Site practice and site waste management tools |
| Informing School on policy / legislative changes * | Plastic Packaging Tax, Circular Economy, Producer Responsibility etc |
| Collaboration with other groups | Addressing SDGs, working with Carbon Group on scope 3 etc |

Reminder:

What is waste?

... and who is

interested?

What is Waste?

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

(Waste Framework Directive)





Waste? ...

Or resources?

What is a circular economy?

A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

The Circular Economy



Ellen MacArthur Foundation

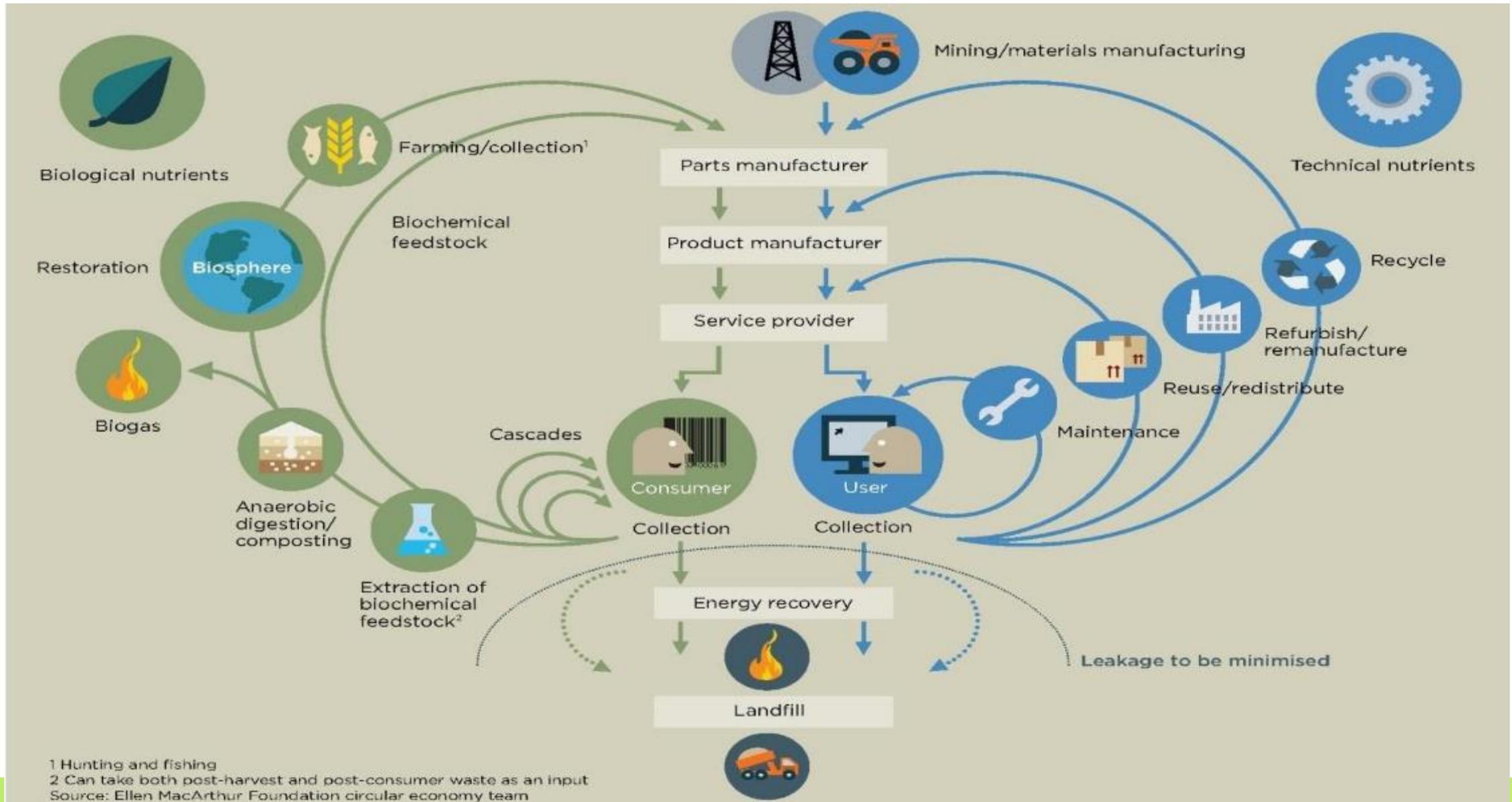
“The circular economy is based on three principles, driven by design:

- Eliminate waste and pollution*
- Circulate products and materials (at their highest value)*
- Regenerate nature*

It is underpinned by a transition to renewable energy and materials. A circular economy decouples economic activity from the consumption of finite resources. It is a resilient system that is good for business, people and the environment”

Source: <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>

More detail



Circularity isn't just recycling...

Do you need it?

Can you fix it?

It's being more thoughtful and resource efficient

Could you design it better?

Could somebody else use it?

Can you save time and money?

Can you retain more value?

New
thinking?



.. Not
entirely!



Stakeholders

Who has an interest in
the circular economy?

Who has influence?

Circular Economy and Sustainability Plans

| Organisation | Aims/Objectives/Policy |
|---|---|
| Environment Agency  | 2030 Goals - <i>Optimising our use of resources</i> |
| Network Rail  | Minimal waste and the use of materials – <i>We will reuse, repurpose or redeploy all surplus resources, minimise use of resources, design out waste and embed waste life cycle/circular economy thinking into the rail industry by 2035</i> |
| National Highways   | Manufactured capital – Circular economy – <i>We will push towards a ‘circular’ approach to our management of resources: minimising our demand for primary resources extracted from the ground, and maximise the reuse of the resources already in use on the network. Reutilising them in as high a value function as possible</i> |
| Palace of Westminster  | Circular Economy Policy – <i>sets out the Programme’s ambition to embed the principles of a circular economy into the Restoration and Renewal Programme</i> |
| HS2  | Circular Economy Principles – <i>keep resources in use for as long as possible; recover and regenerate resources at the end of each use; keep resources at their highest quality and value at all times</i> |
| Anglian Water  | Our Goals - <i>zero waste. Get it right first time, every time; to deliver a 70% reduction in capital (embodied) carbon by 2030 from a 2010 baseline</i> |
| Expo 2020 Dubai  | Programme wide Sustainability Strategy – <i>Minimise depletion of natural resources; Promote use of sustainable materials; Reduce wastes and minimise quantity of waste to landfill</i> |

The UN Sustainable Development Goals



The Circular Economy and National Highways

Be resource efficient and reflect a circular approach

National Highway's approach to material sustainability is set out in documents:

- Sustainable Development Strategy (Highways England, 2017)
- Circular Economy Approach and Routemap (Highways England, 2016)

The greatest opportunities for improving resource efficiency occur early in the civil engineering life cycle. Therefore, the design of the Project has pursued the objective of designing out material consumption.

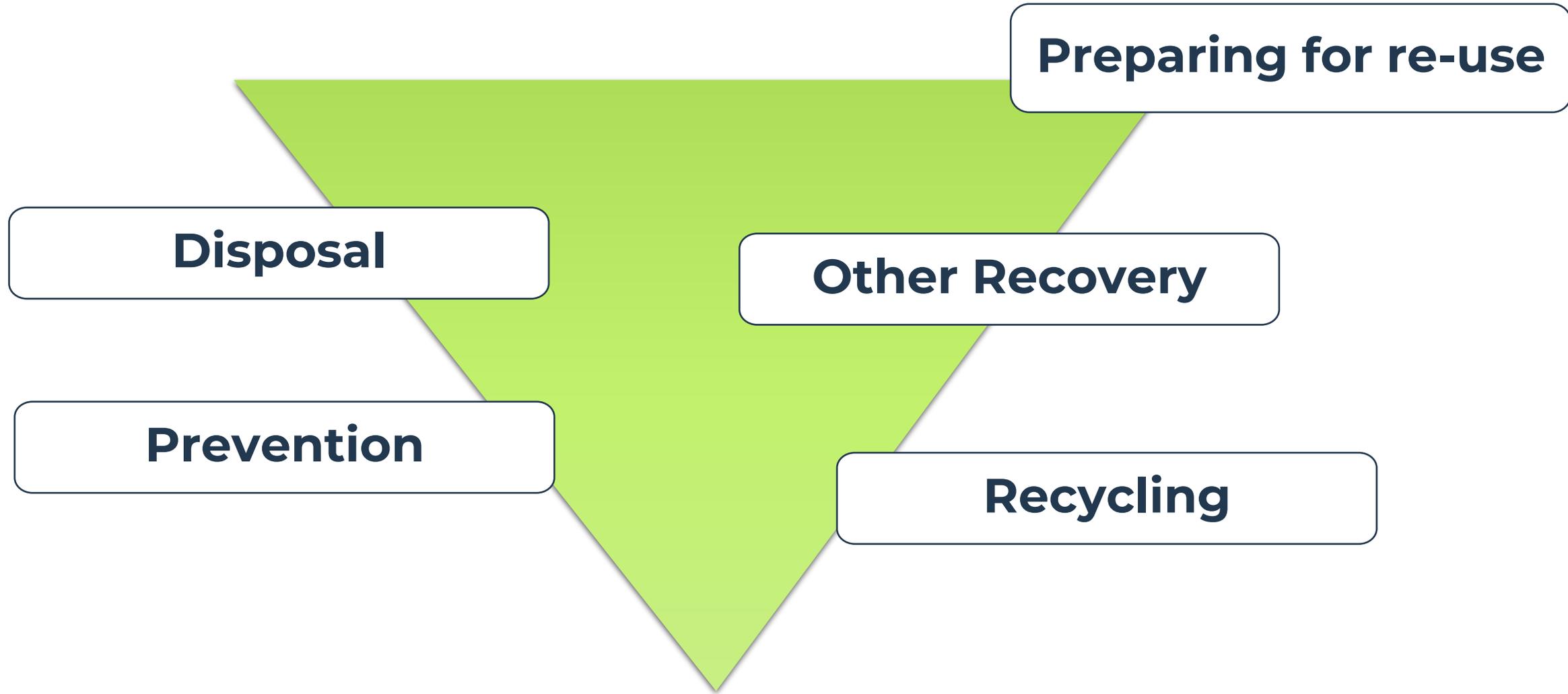


Legislative impetus

Some Relevant Waste Legislation



The Waste Hierarchy



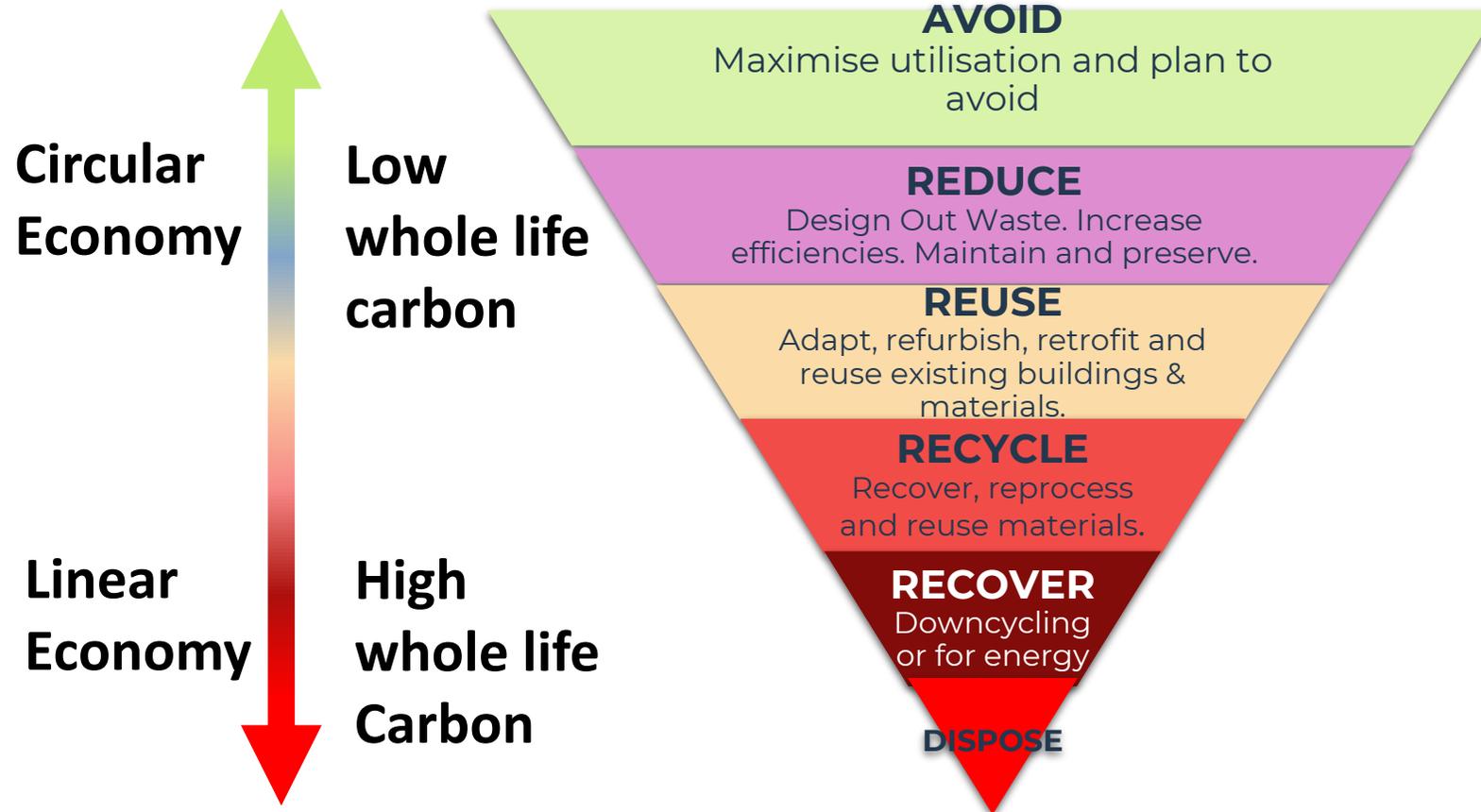
TWO QUESTIONS

1. Which do you think is the most sustainable option in the waste hierarchy?
 - Preparing for reuse
 - Other recovery
 - Recycling
 - Prevention
 - Disposal
2. Which do you think is the least sustainable option in the waste hierarchy?
 - Preparing for reuse
 - Other recovery
 - Recycling
 - Prevention
 - Disposal

The Waste Hierarchy



The Waste Hierarchy applied to the built environment





Policy

New and future UK Waste Regulations

- THE LONDON PLAN (2019) includes requirement for all major construction projects to produce Circular Economy statements, including how the project will enable building materials, components and products to be disassembled and re-used.
- UK/EU Circular Economy Strategy
- UK ENVIRONMENT ACT sets a framework for increasing recycling and includes legal powers to ban the export of plastic waste to developing countries.
- Plastic Packaging Tax
- EXTENDED PRODUCER RESPONSIBILITY for packaging
- Net-zero by 2045 (Climate Change (Scotland) Act 2009)
- Scotland - 4th National Planning Framework
- Circular Economy (Scotland) Bill – now published.

Circular economy is a systematic response that addresses a design problem NOT a waste problem



Principles for design approach

‘Adopting a design approach that focuses on materials resource efficiency so that less material is used in the design (i.e. lean design), and/or less waste is produced in the construction process, without compromising the design concept.’

[Design Out Waste Guide, Zero Waste Scotland](#)

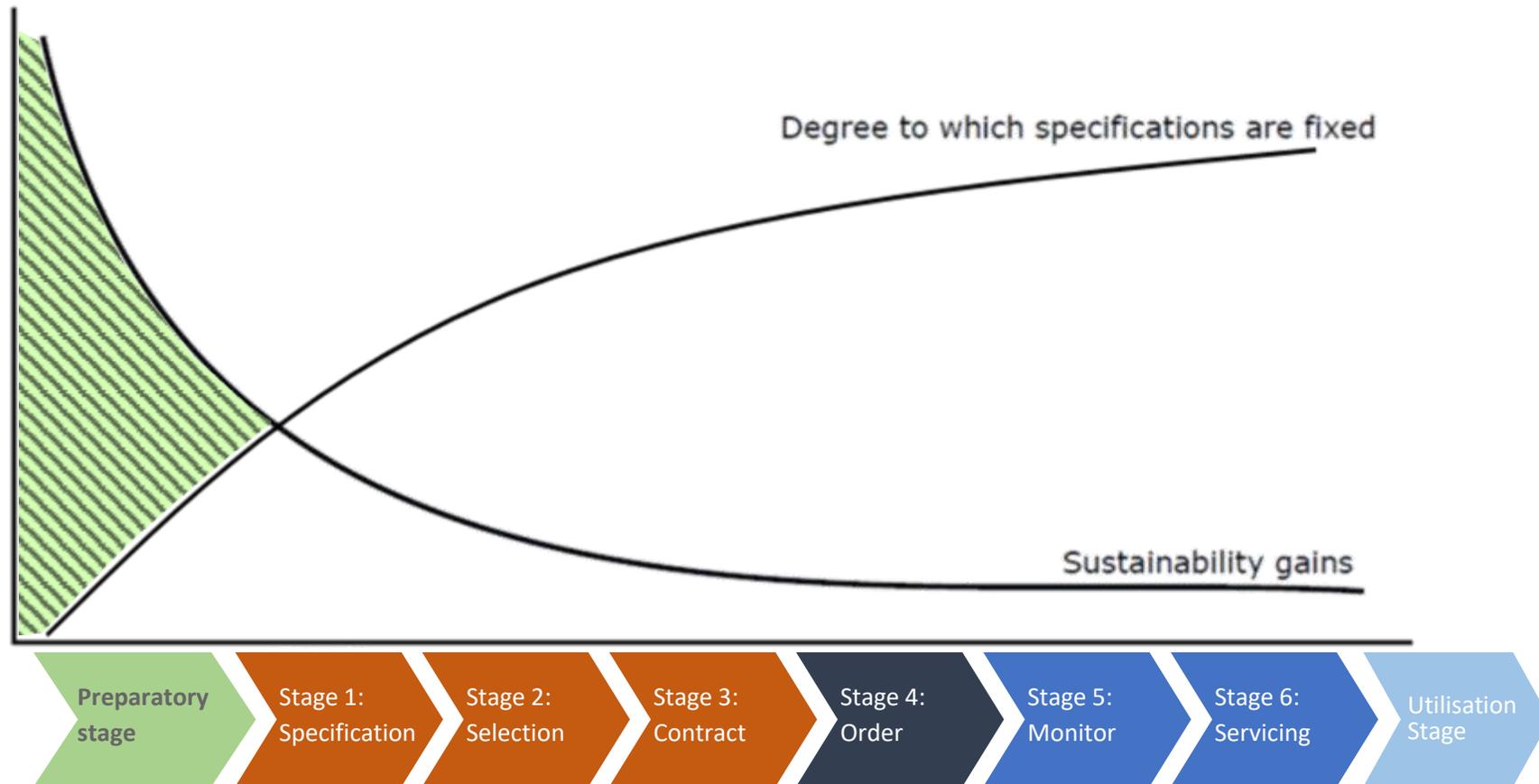
Core designing out waste principles

Design for:

1. Resource-efficient procurement
2. Materials optimisation
3. Off-site construction
4. Re-use and recovery
5. Deconstruction and flexibility



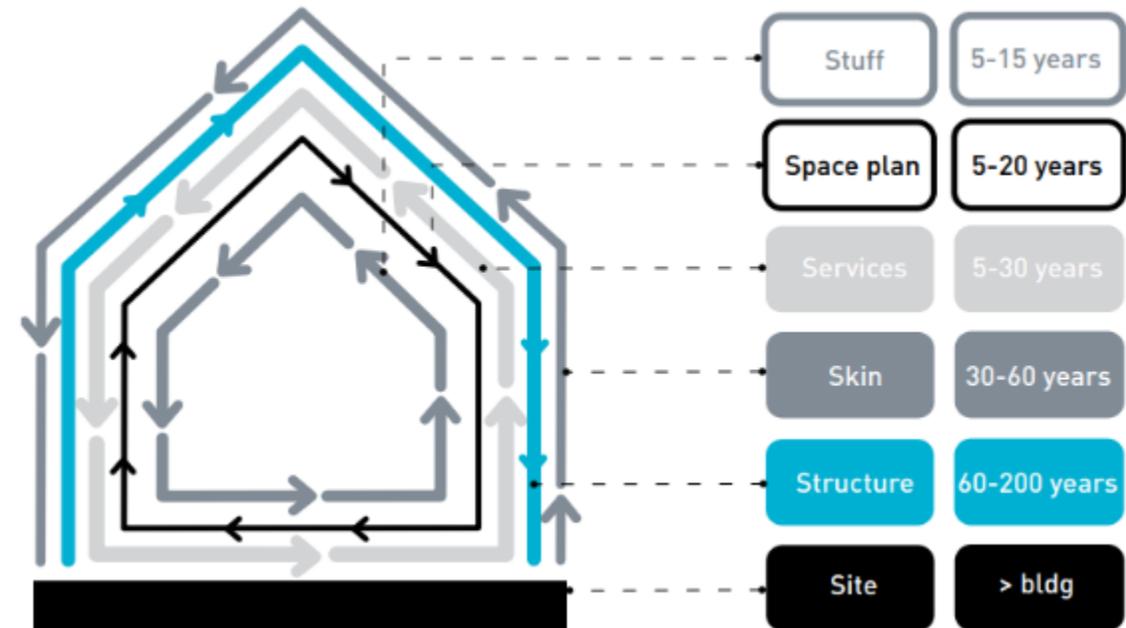
Pre-procurement planning = biggest impact



Design for re-use and recovery

Think about:

- The different layers of a build
- The accessibility and reparability of the components and materials
- The use of durable materials and products
- The use of standardised components
- The use of standardised tools
- The use of mechanical fixings and reduction of chemical bonding



Sketch: John Gilbert Architects based on 'How Buildings Learn', Brand (Viking, London 1994)

“An adaptive building has to allow slippage between the differently-paced systems of Site, Structure, Skin, Services, Space Plan, and Stuff. Otherwise the slow systems block the flow of the quick ones, and the quick ones tear up the slow ones with their constant change.”

Brand, 1994



The Routemap for Zero Avoidable Waste in Construction

Introduction

Waste costs the construction industry an estimated £11 billion per annum and emits 3.5 million tonnes of CO₂e, yet waste can be reduced, materials used more efficiently, and buildings and structures at end of life repurposed, refurbished or dismantled to enable products and materials to be a resource for new activities.

This Routemap aims to catalyse actions by all parts of the supply chain to reduce and ultimately eliminate all avoidable waste. It adopts the interpretation of Zero Avoidable Waste in construction published by the Green Construction Board (GCB) in 2020 and adopts the principles of the waste hierarchy and life cycle assessment.

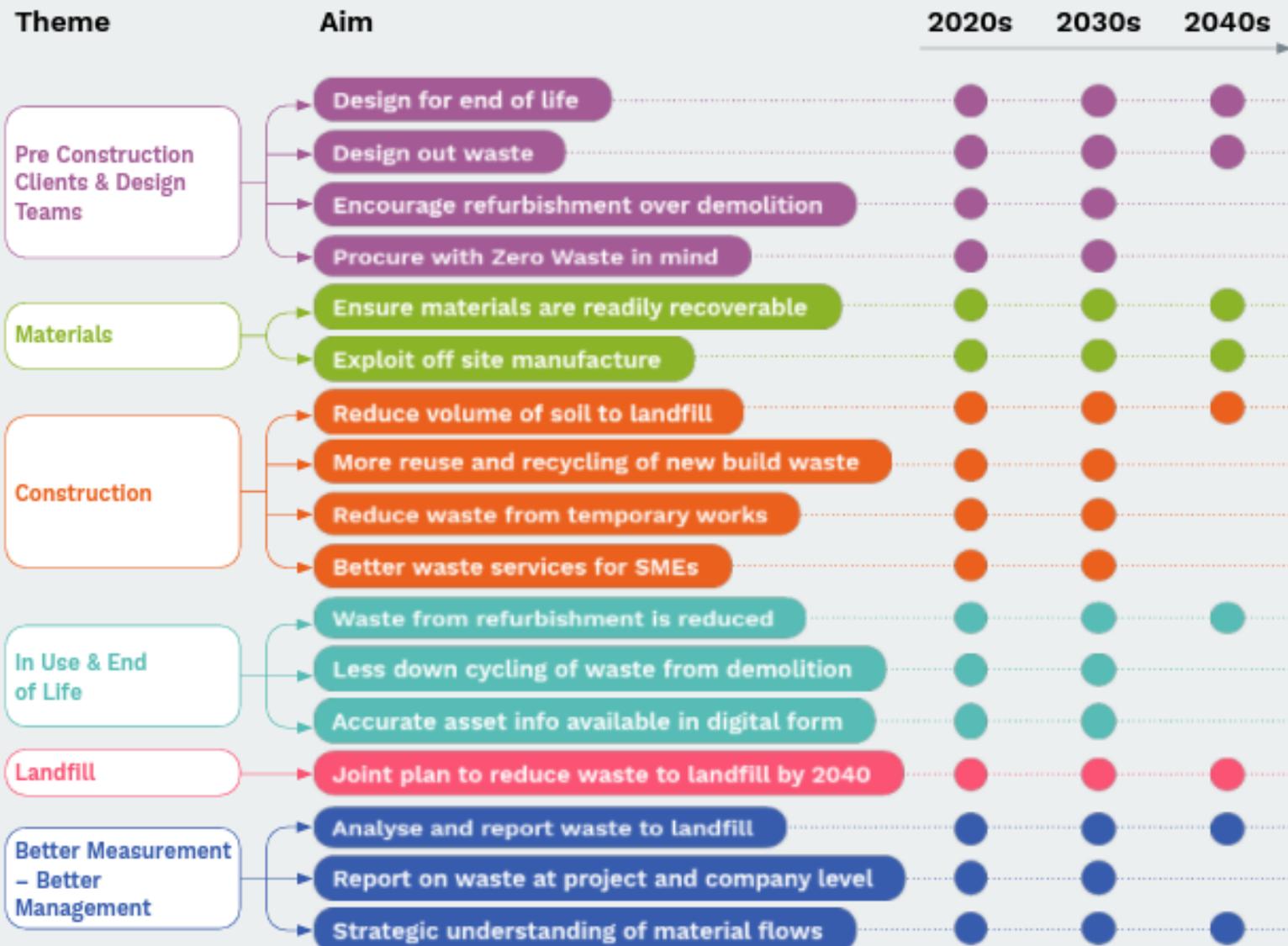
The Routemap is an interactive infographic identifying aims, actions, context and guidance. Click on an Aims button and a new page appears. Hover over Context and an explanation appears. Click Guidance and a new page links to published guidance.

It has been prepared by the GCB's Resources and Waste Task Group with the principal authors being Katherine Adams, Rob Pearce and Jane Thornback. The project received financial support from BEIS, and was in collaboration with Defra.

[Click for Context](#)

[Targets and Guiding Principles](#)

[Click for Acknowledgements](#)



Design out waste

Aim: The use of materials is optimised in the design of the buildings and structures and waste is designed out throughout the design and construction process

2020s

- Waste reduction targets are commonplace in most construction projects.
- Professional institutions develop training and CPD.
- BS8895 is widely adopted throughout the design process for major projects.

2030s

- By 2030 costs are reduced by 10% through designing out waste and material optimisation.

2040s

- The amount of waste generated from new build construction is minimal.

[Click for Guidance](#)

Act now

- Clients, design teams and contractors set project waste reduction targets during design and construction.
- Design teams share their learnings and best practice on designing out waste within their practices and externally through their networks.
- Design teams write up case studies on how designing out waste has been considered within the design process and what changed as a result.
- Design teams implement waste reduction practices in their design work.
- Design teams undertake material optimisation through design choices and material selection working with manufacturers.
- Professional institutions and universities and colleges include designing out waste in training, CPD and academic courses.
- If participating in environmental certification schemes, such as BREEAM, LEED etc pursue the credits that relate to waste reduction and material efficiency.
- At project level, contractors and quantity surveyors, reduce the wastage allowances that are set for materials and do not over order.
- Contractors incentivise subcontractors to reduce waste.
- Contractors and subcontractors manage materials on site carefully to avoid damage.
- Manufacturers and contractors collaborate to implement reusable packaging schemes.

The School has developed new pages containing practical advice and examples based on this model -

We would love to include your own content

Project lifecycle waste web feature

A practical guide to

Reducing construction lifecycle waste

These resources help users from all parts of the built environment value chain reduce construction lifecycle waste.

Explore themes and topics for practical examples, learning about the different stages and aspects of a wide variety of construction projects.

1. Pre Construction Clients & Design Teams

From procuring with zero waste in mind to encouraging refurbishment instead of demolition

2. Materials

Learn how to ensure materials are readily recoverable, and about the use of low carbon and circular materials.

3. Construction

Actions that can be taken on the construction site to reduce waste to landfill and encourage reuse and recycling

4. In Use and End of Life

Find out more about how waste can be mitigated during refurbishment and demolition of buildings

5. Eliminating Landfill

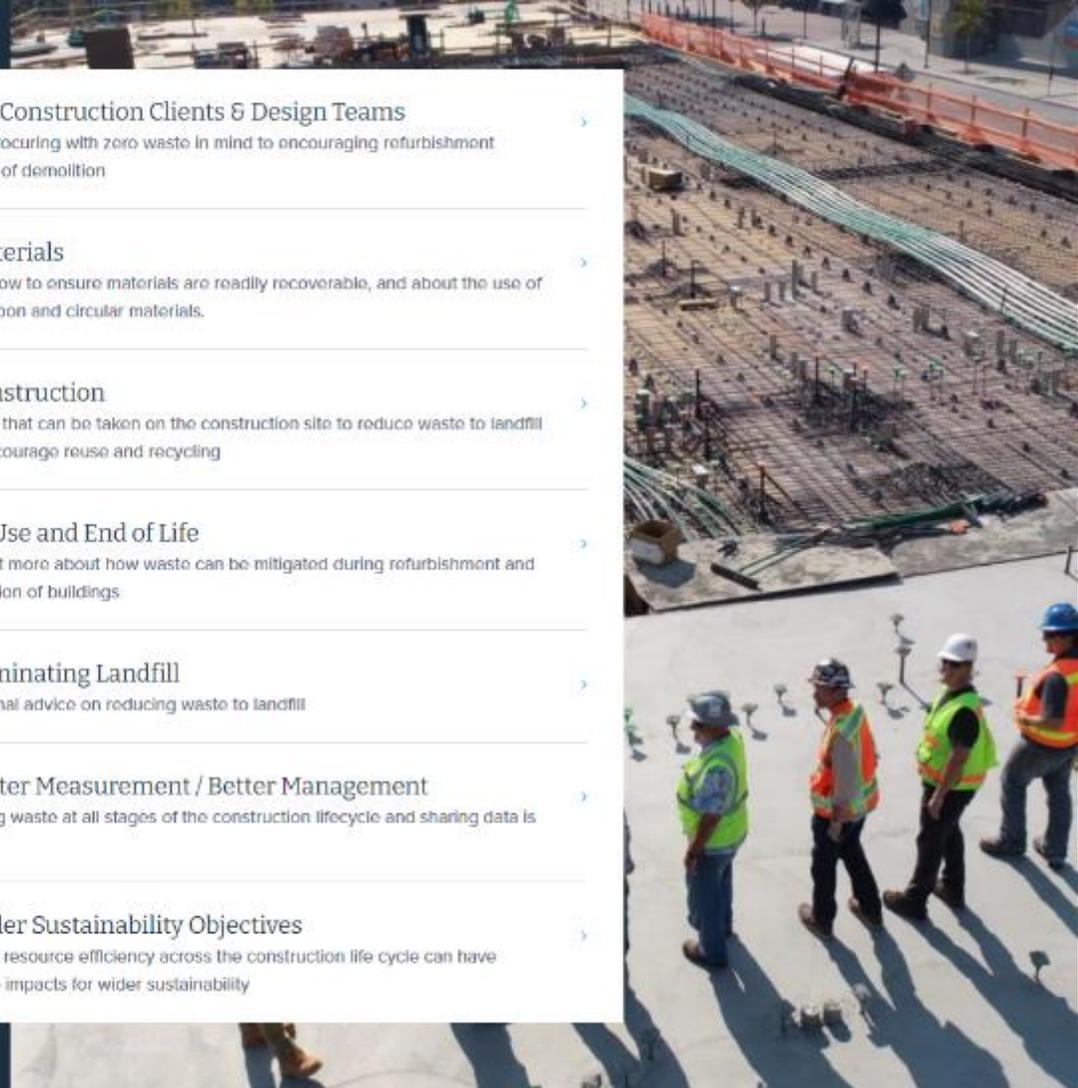
Additional advice on reducing waste to landfill

6. Better Measurement / Better Management

Tracking waste at all stages of the construction lifecycle and sharing data is vital

7. Wider Sustainability Objectives

Greater resource efficiency across the construction life cycle can have positive impacts for wider sustainability





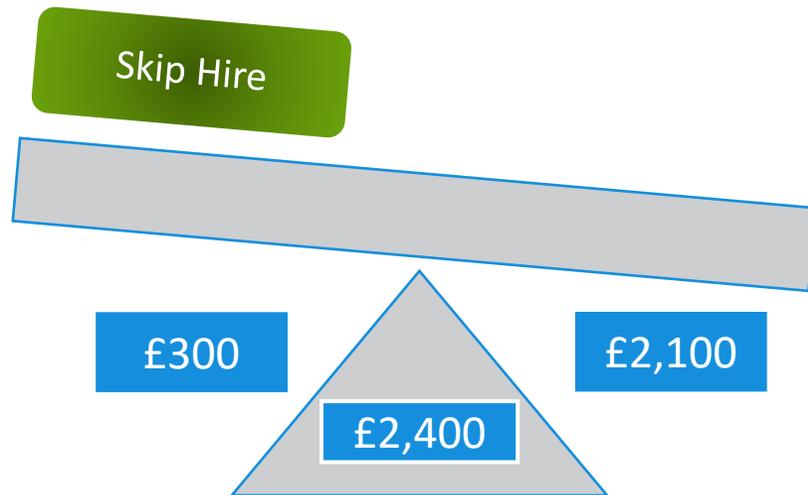
The financial case

Waste costs!

Let's ask ourselves why?



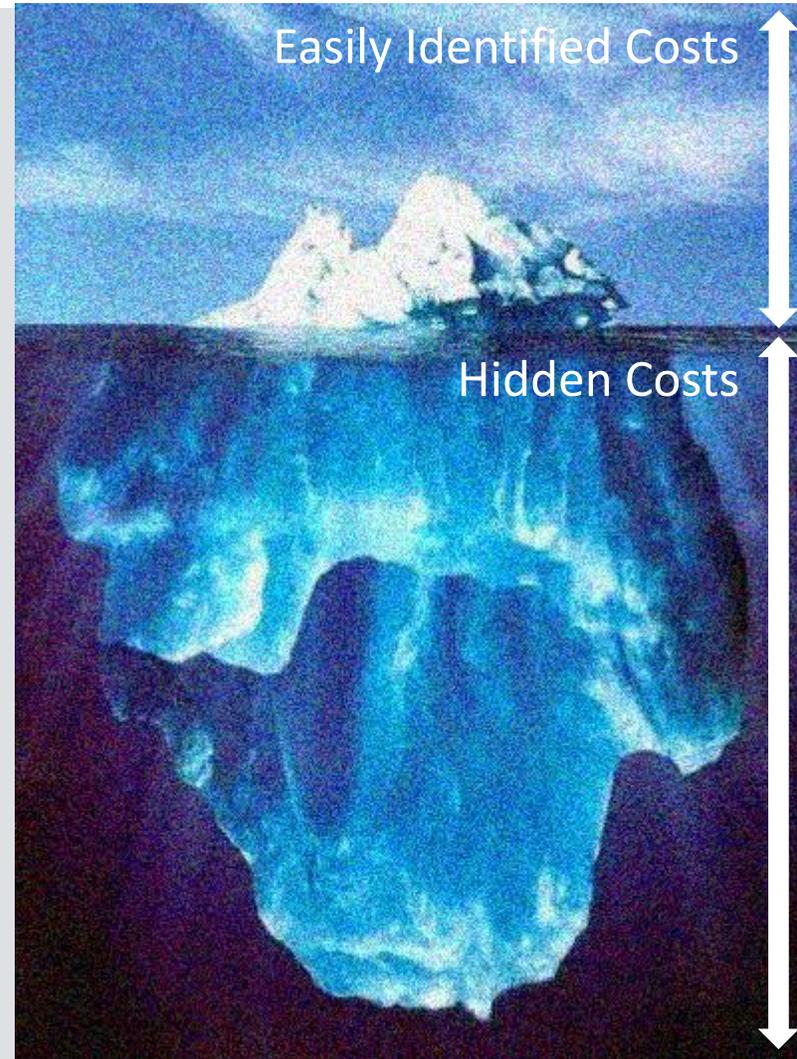
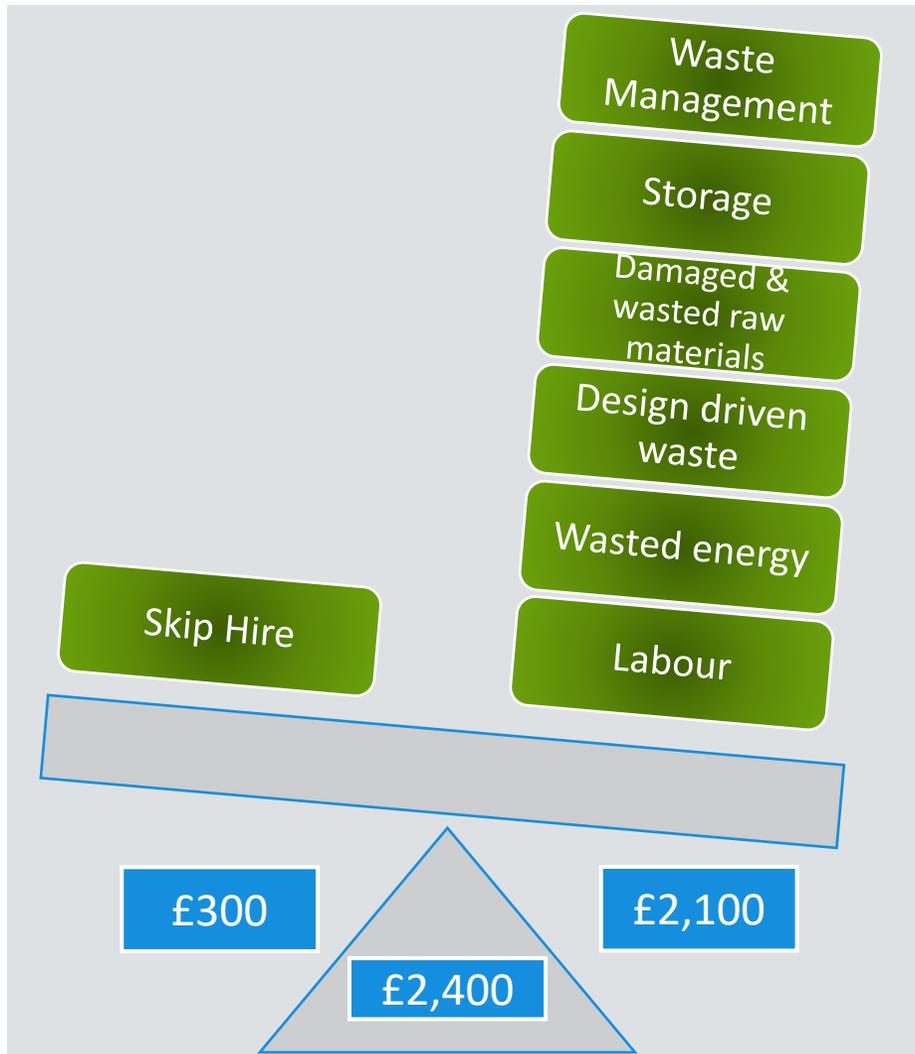
True Cost of Waste



QUESTION – PUT YOUR ANSWERS ON THE JAMBOARD

What are the other contributing factors to the true cost of waste?

True Cost of Waste



Causes of construction (materials) waste

Client and Design Influence

- Ignoring buildability
- Materials of unsuitable dimensions (standard sizes)
- Client/designer change of mind
- Specification failing to match quality of building required
- Resistance to adopt alternative materials

Delivery of Products

- Over-ordering
- Method of packaging
- Method of transport
- Inadequate data re: time/method of delivery
- Inadequate details re: performance/quality/site facilities

Site Management and Practices

- Poor management system: stock control/organisation/supervision
- Untidy construction sites
- Poor storage/handling e.g. breakage, damage, losses
- Excess materials at workplace/over-sized foundations and other elements
- Undue cutting, fixing, application and residue waste
- Inadequate protection to finished work (other trades/vandalism)
- Learning curve/lack of training

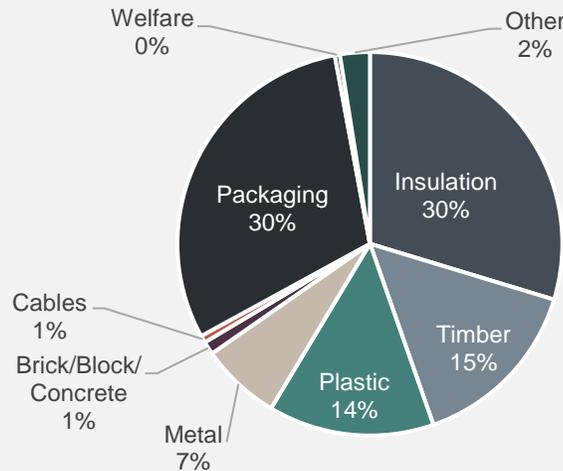


Site Waste Reduction Protocol

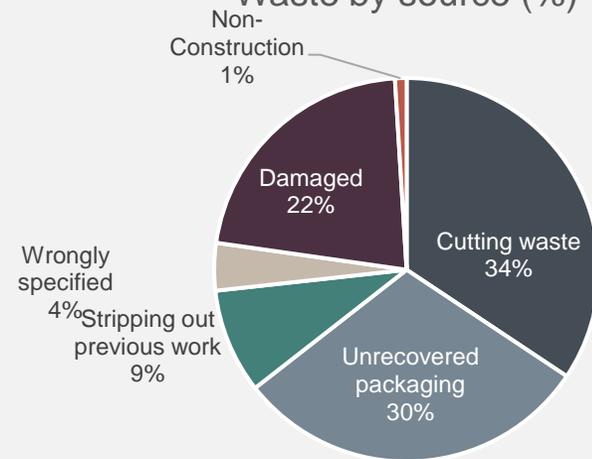


| | |
|--|------------------|
| 4.55 cubic meters of materials | £1,250.72 |
| Labour | £11.08 |
| Cost of damages and errors | £823.43 |
| Equipment (telehandler fuel)* | £0.20 |
| Skip Hire (8 yard mixed waste)* | £207.00 |
| VAT (0% Labour & Building Materials; Other Costs* 20%) | £103.40 |
| TOTAL | £2,395.83 |

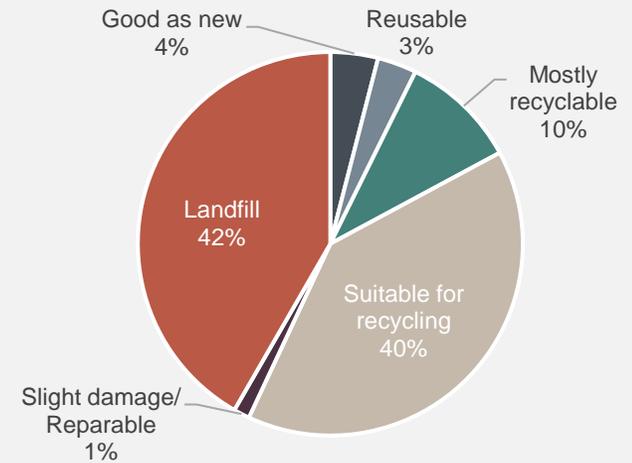
Waste by volume (%)



Waste by source (%)



Condition of waste (%)



We must also consider issues like business reputation and brand...



..... Supply chain security and availability of stock/raw materials



A FEW EXAMPLES OF THE CIRCULAR ECONOMY IN ACTION



Question:

What percentage of plastics production is packaging?

1. 7%
2. 26%
3. 44%

Question:

What percentage of plastics waste is packaging?

1. 17%
2. 44%
3. 63%

WHY PLASTIC PACKAGING?: SOURCES OF PLASTIC WASTE

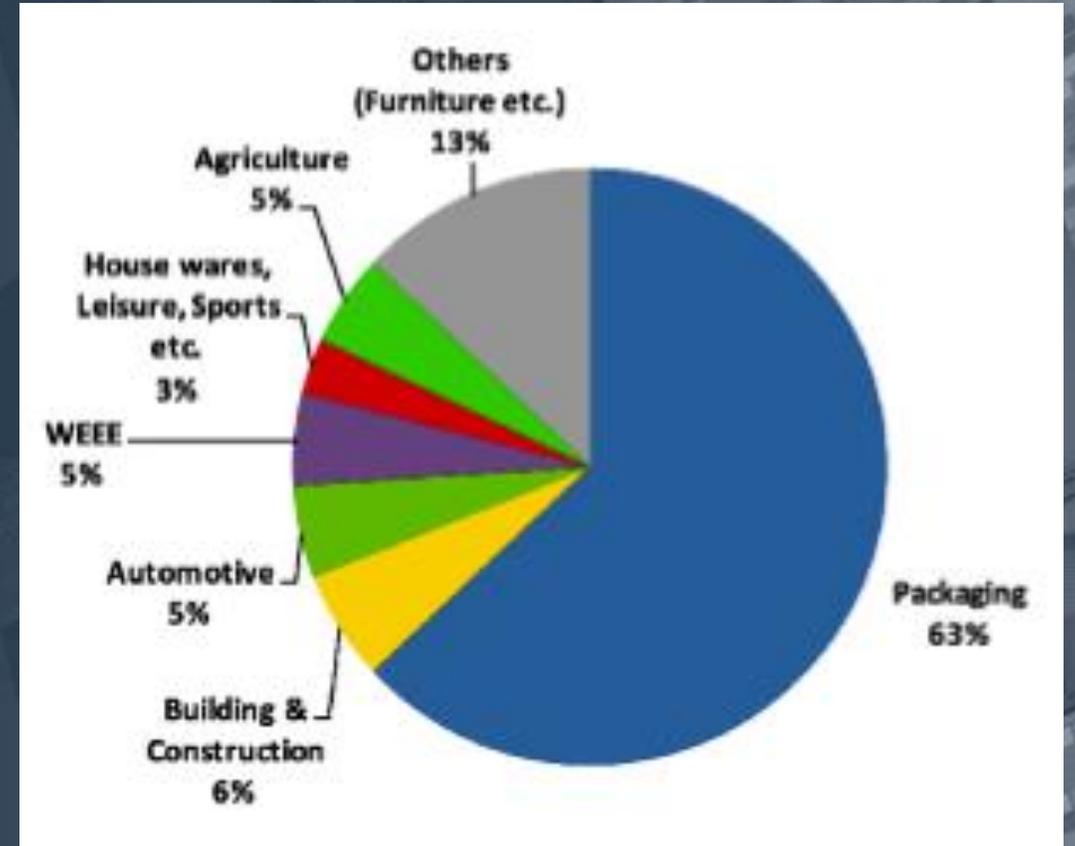
“Plastics and plastic packaging are an integral and important part of the global economy.

Plastics production has surged over the past 50 years, from 15 million tonnes in 1964 to 311 million tonnes in 2014, and is expected to double again over the next 20 years, as plastics come to serve increasingly many applications.

*Plastic packaging is and will remain the largest application; currently, packaging represents **26%** of the total volume of plastics used”*

Source:

https://www.ellenmacarthurfoundation.org/assets/downloads/AllenMacArthurFoundation_TheNewPlasticsEconomy_29-1-16.pdf



Source:

https://ec.europa.eu/environment/integration/research/newsalert/pdf/IR1_en.pdf

Plastic Packaging Tax



SOME KEY POINTS:

- A tax of £210.82 per tonne
- Applies since April 2022
- Applies to manufacturers and importers
- Applies to plastic packaging manufactured in or imported into the UK containing less than 30% recycled plastic
- Intended to discourage use of virgin material and help develop use of recycled content
- Expecting high annual revenues.



Extended Producer Responsibility (EPR)

- The likely Reporting structure under Extended Producer Responsibility (EPR) becoming clearer
- How businesses categorise their packaging will be vital from a reporting point of view
- Payment of any EPR fees delayed by up to a year (c.2025), however policy already introduced into law holds producers responsible for packaging data collection and eventual cost of physical collection, sorting, recycling, or disposal of their product packaging
- Though in the Short term there are no obligated fees, obligated business must still accurately declare what packaging they are consuming
- UK businesses who handle packaging will eventually need to fund total cost of managing household and non-household packaging waste (from production to removal) in addition to current liability.

- EPR will by design, reward circularity, reduction and reuse of packaging materials, encouraging brands to think more sustainably about the lifecycle and fate of their packaging
- EPR data collection also contains an additional category called “shipment” packaging, which refers to goods sent direct to households such as e-com packaging, also referred to as web retail packaging
- A significant factor is that EPR will also expect packaging to be classified and split in terms of data reporting into “household” or “non-household”
- It will be essential to declare this, as higher fees could be applied to the “household” proportion
- For clarity, under EPR all primary and shipment packaging should be declared as “household”, then all secondary and tertiary packaging as ‘non-household’.

School Members

Protec - Proplex





Circular Case Study: 'Upcycling' Cheshire Police HQ



2,000Kg
Raw
Material
Saved

23W
energy
saved per
fitting

1.5 tonnes
packaging
reduction

£30
Cheaper to
re-use

A New Circular Business Model



Whitecroft Vitality

- Circular Design and Manufacture
- Highest Through Life Utility
- Regeneration and Recovery



Our world is changing...

Climate

Earth's average **temperature** has increased by 1C° since 1900. In 2050, global temperature is set to **increase by 2C°**.

Resources

Earth **overshoot day** fell on July 29th in 2021. In less than eight months, humanity has exhausted Earth's budget for the year.

Health

We spend **90% of our time** indoors and indoor air is **2 to 5 times** more contaminated so clear air and healthy spaces matter.

...Making conscious choices, has never been more important

Circular Selection

Looking for circular products?

We've made sustainable flooring easy for you by bringing together our post-use recyclable products in one collection.

Recyclable post-use

- ▷ there is a functional system to collect installation waste and post-use waste,
- ▷ the waste is transported to a facility where the material is recycled into new raw materials or products.

Phthalate free

Today, all our European vinyl collections are phthalate free.

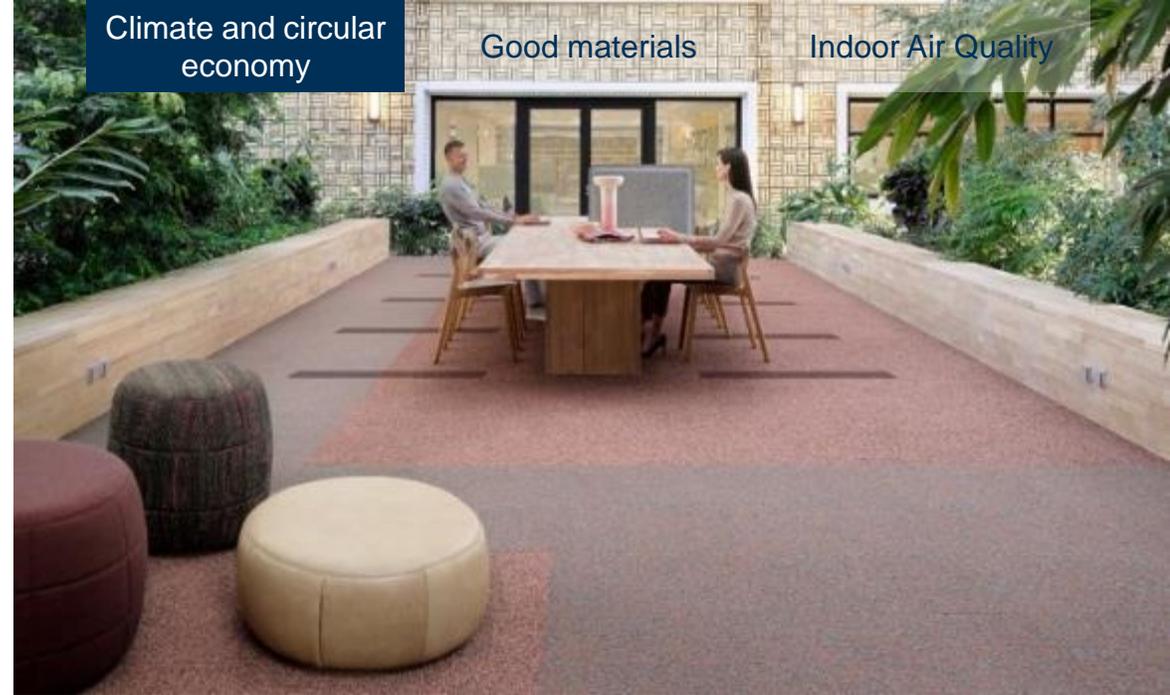
Good for people and planet.

We're investigating the health, safety and environmental credentials of our materials.

Climate and circular economy

Good materials

Indoor Air Quality



Green building certifications

Helping you hit your sustainability targets and achieve green building certifications.

Our high levels of recycled content, take-back and recycling initiatives through ReStart[®], low VOC emissions and product certifications along with our use of a phthalate-free plasticiser since 2011, can help you achieve higher standards of sustainability and reach green building labels like LEED, WELL and BREEAM.

The logo for BREEAM (Building Research Establishment Environmental Assessment Method) is displayed in a bold, green, sans-serif font.

Environment Agency

- In 2020, we started to explore with EA how eMission 2030 Goals ‘Optimising our use of resources’ and “Responding to the climate emergency” could be assisted by adopting a circular economy approach
- A collaborative workshop approach was devised working with EA and Contractor (BAM) to:
 - Brainstorm CE aims relevant to Collaborative Delivery Teams -C projects
 - Apply aims to specific EA projects across the region (Upper Thames, North London and Eastern England) and consider which business models (loosely based on CEEQUAL criteria) could enable aims to be realised
 - Exercise was recorded and presented at EA Carbon Expo 2020 and can be replicated
 - Collaborative Delivery Teams -C Hub currently working to implement actions from the workshop and to confirm/assure that approaches to each of the relevant CEEQUAL criteria is being implemented.

| Theme | Initial summary aims brainstormed |
|-------------------------------|---|
| Materials | <ul style="list-style-type: none"> - Share materials and assets - Incorporate circular economy into Procurement – e.g. leasing materials - Link elimination of waste from projects to carbon hierarchy and emissions - Whole Life Assessment - R&D, innovation and demonstrate compatibility with standards |
| Water | <ul style="list-style-type: none"> - Capture and reuse rainfall for local irrigation, groundwater replenishment |
| Energy | <ul style="list-style-type: none"> - Utilise micro-energy generation on sites - Share construction equipment to increase energy efficiency |
| Regeneration | <ul style="list-style-type: none"> - Use renewable materials from schemes delivering compensatory habitat - Further collaborate with communities and organisations to raise circular economic awareness in management of habitats (e.g. wetlands) |
| Programme-wide Considerations | <ul style="list-style-type: none"> - Emphasise hub level planning of circular initiatives - Analyse material needs, surpluses and timings and the potential to influence timing of works to optimise materials use/waste generation. - Consider materials logistics strategy identifying location for temporary stockpiling materials, assets and waste from projects. Engage with other sectors and other Hubs to utilise opportunities for sharing and reuse. - Strategic approach to habitat creation. |



United Utilities

- UU had overall ambition to adopt a principle of CE for the organization
- Jacobs undertook a systematic engagement process with UU teams overseen by a steering group to identify a vision and principles for CE relevant to UU
- This was then developed into a series of management and technical actions that would form the basis for a CE Routemap for the business
- As follow up, Jacobs are currently working on a specific project aimed at demonstrating and integrating Industrial Symbiosis into the organization.

7.2 What Does the Draft Roadmap comprise?

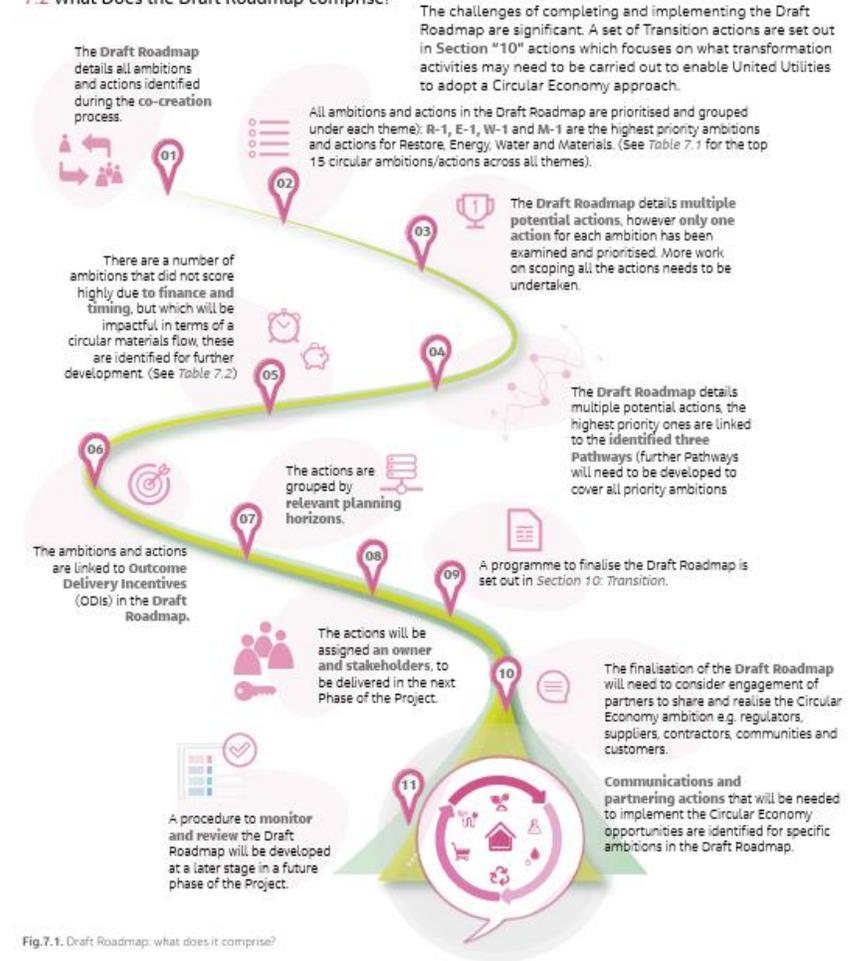


Fig.7.1. Draft Roadmap: what does it comprise?

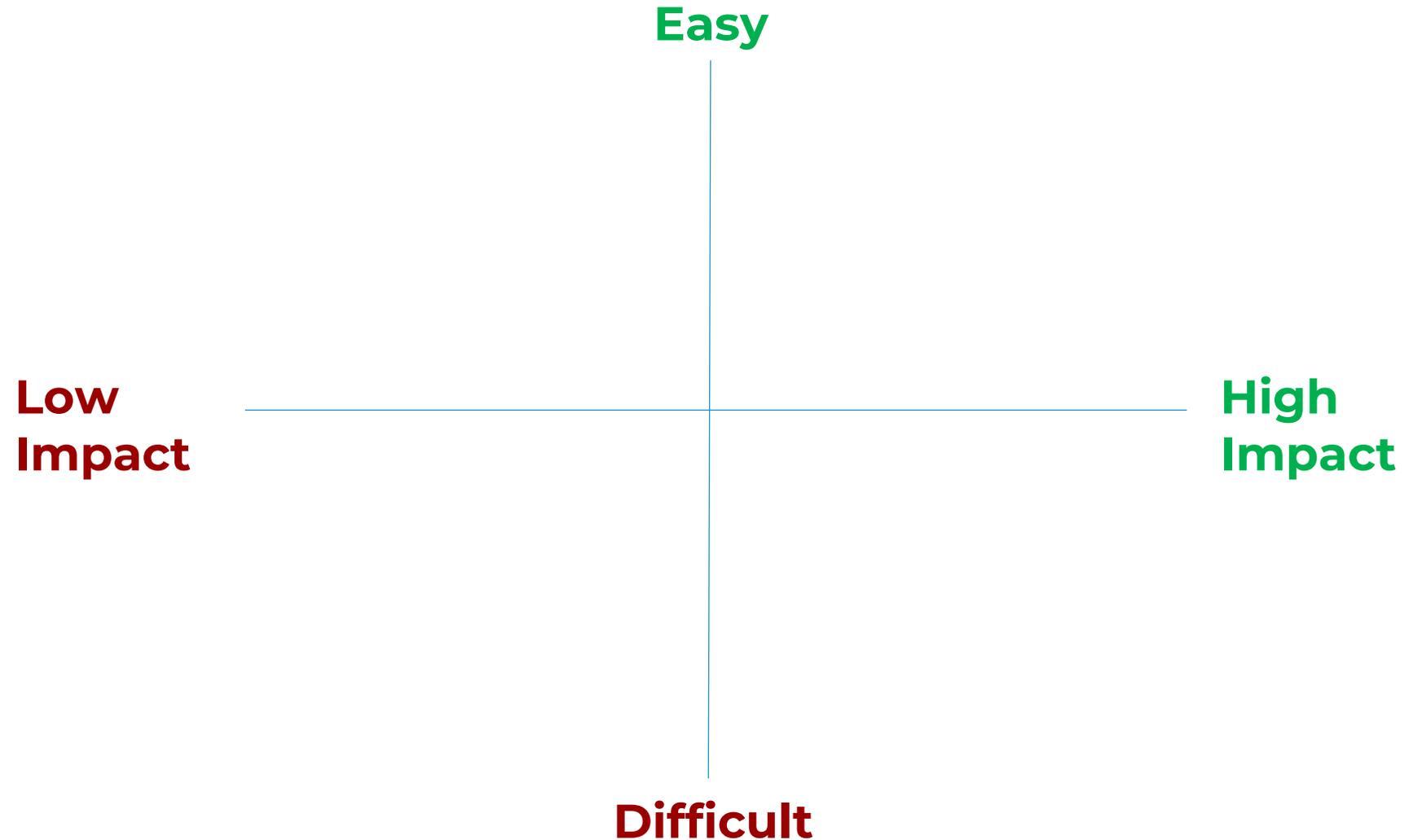
Can you think of
any good current
examples of
circularity in your
work?

What's not going
so well? Why??

What could you
introduce?
What would it
take to get there?

EASE AND IMPACT GRID – NEXT STEPS

How to best focus your effort for 22/23.



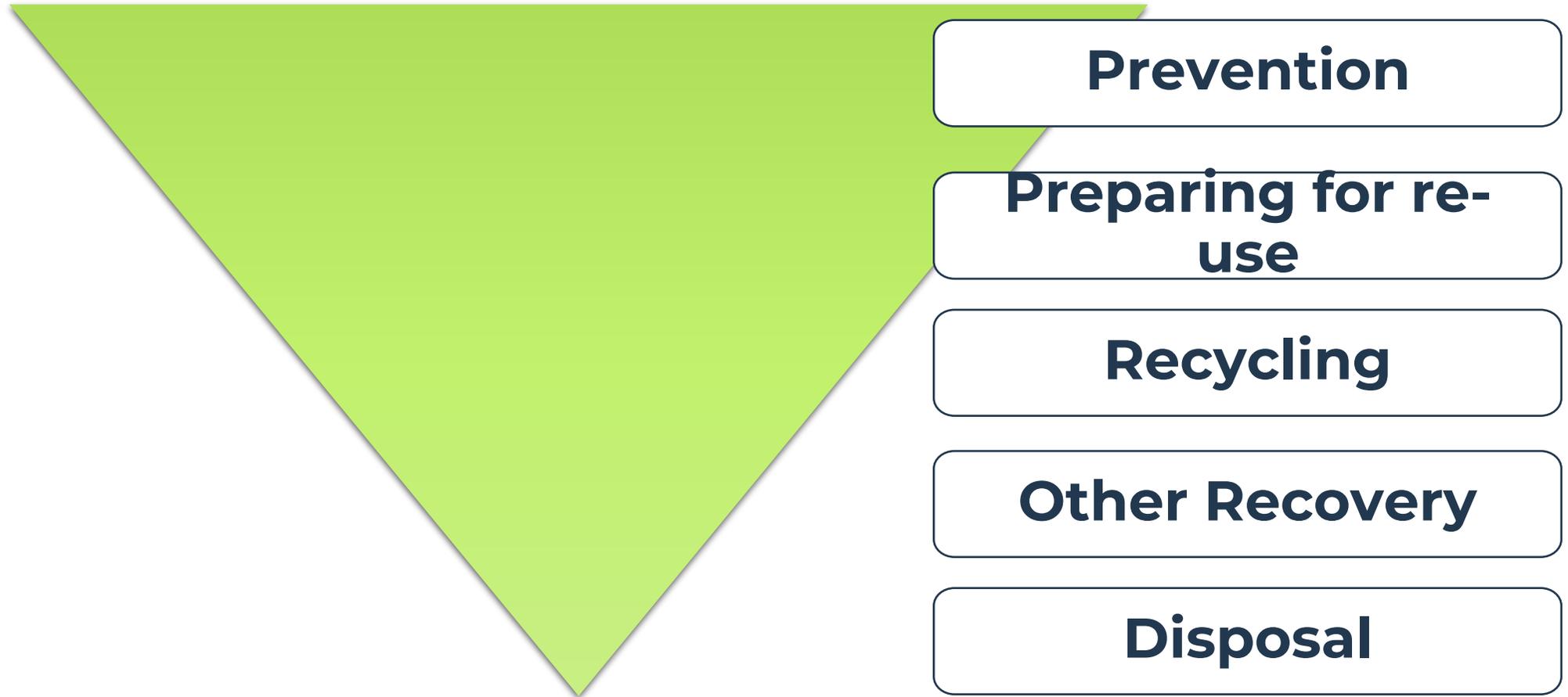


Where is it all going?

Further developing our approach
to circularity

The Traditional Waste Hierarchy

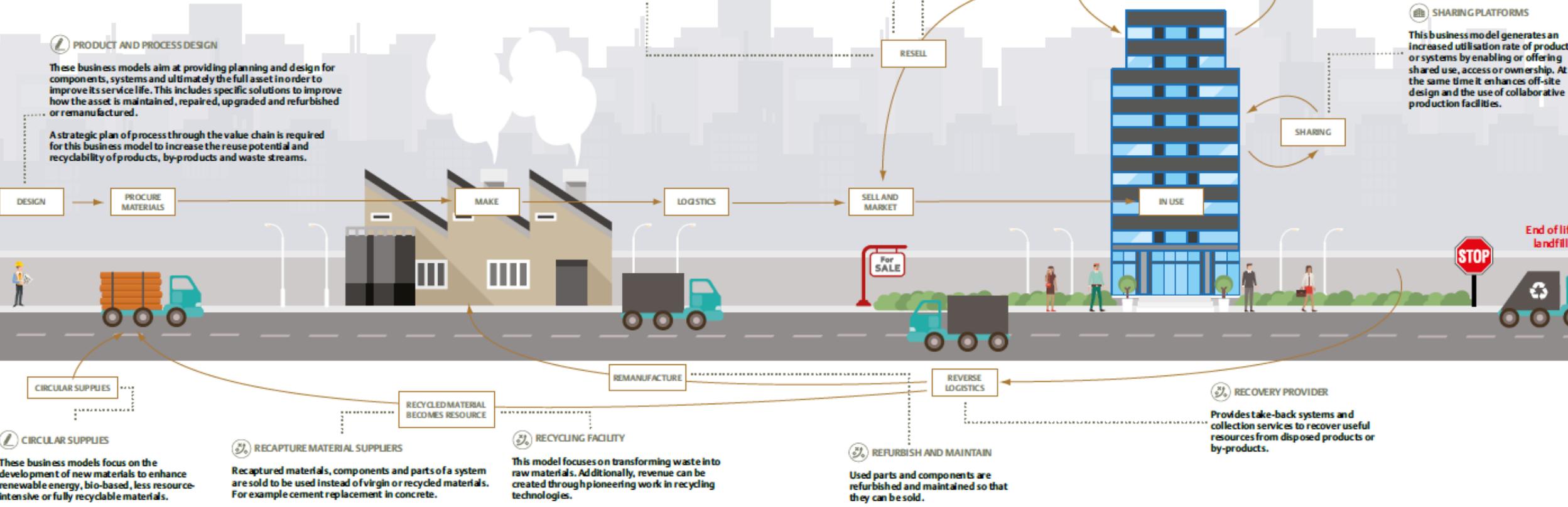
REMEMBER _ You are legally obliged to consider this!



4.1 CIRCULAR BUSINESS MODELS IN THE CURRENT VALUE CHAIN

- CIRCULAR DESIGN
- CIRCULAR USE
- CIRCULAR RECOVERY

This diagram demonstrates that there are multiple circular business models (CBMs) which can be grouped into three categories: design, use and recovery - these relate to the stage of the building lifecycle when they will be engaged.



DIFFERENT VALUE CHAIN

TRACKING FACILITY

This model aims to provide services to facilitate the tracking of materials, components and parts of a system so that they can be marketed and traded in secondary raw materials markets.

SUPPORT LIFECYCLE

Consumables, spare parts and add-ons to support the lifecycle of long-lasting products.

SELL AND BUY-BACK

In this case, a product is sold on the basis that it will be purchased back after a period of time.

LIFETIME EXTENSION

In this case, the aim is to extend the service life of products, components and systems through engineering solutions including easy disassembly and reassembly, repair, maintenance and/or upgrade.

PRODUCT AS A SERVICE

This CBM aims at delivering performance rather than products and the ownership of the product is retained by the service provider. The primary revenue stream comes from payment for performance delivered. This applies most obviously to mechanical plant, lighting, and fit out, but can potentially be extended to all parts of a building and infrastructure.

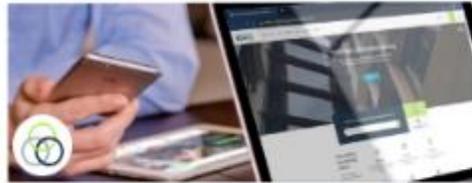
SHARING PLATFORMS

This business model generates an increased utilisation rate of products or systems by enabling or offering shared use, access or ownership. At the same time it enhances off-site design and the use of collaborative production facilities.



Further learning

Training and Awareness – loads of content in the School library



VIRTUAL: Circular Economy Workshop

Join this event to understand the drivers for moving ...

Tuesday, 21 July 2020, 11:30 AM - 1:00 PM



VIRTUAL: A Circular Economy case study: Whitecroft Lighting and BAM

Join this discussion with BAM and Whitecroft Lighting ...

Monday, 3 August 2020, 1:00 PM - 2:00 PM



Wales and the Circular Economy

The opportunities and benefits for Wales for developing a ...



"Towards the Circular Economy" reports

Ellen MacArthur Foundation



Circular Economy and Resource Efficiency

European Commission: Circular Economy and Resource ...



Circular Economy for SMEs - Project Summary

Project summary and details of European partnerships



European Circular Economy project in Wales

European Circular Economy project kicks off in Wales



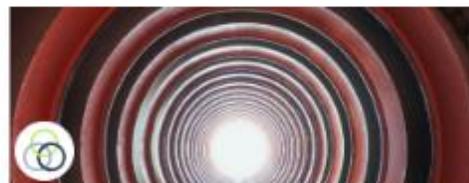
Circular Economy Metrics Case Study: Asphalt

Three of Tarmac's asphalt products were selected to ...



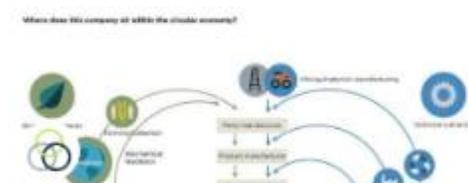
Circular Economy Metrics Case Study: Built Assets

Case study: how progress towards the circular economy ...



CE Indicators and Metrics Tool

Created to calculate the values of Circular Economy Key ...



CE Indicators and Metrics Tool Guidance

Circular Economy Indicators and Metrics Tool Guidance



Embedding Circular Economy Principles

Top Tips for Embedding Circular Economy Principles in the ...

Construction lifecycle waste web feature

A practical guide to

Reducing construction lifecycle waste

These resources help users from all parts of the built environment value chain reduce construction lifecycle waste.

Explore themes and topics for practical examples, learning about the different stages and aspects of a wide variety of construction projects.

1. Pre Construction Clients & Design Teams

From procuring with zero waste in mind to encouraging refurbishment instead of demolition

2. Materials

Learn how to ensure materials are readily recoverable, and about the use of low carbon and circular materials.

3. Construction

Actions that can be taken on the construction site to reduce waste to landfill and encourage reuse and recycling

4. In Use and End of Life

Find out more about how waste can be mitigated during refurbishment and demolition of buildings

5. Eliminating Landfill

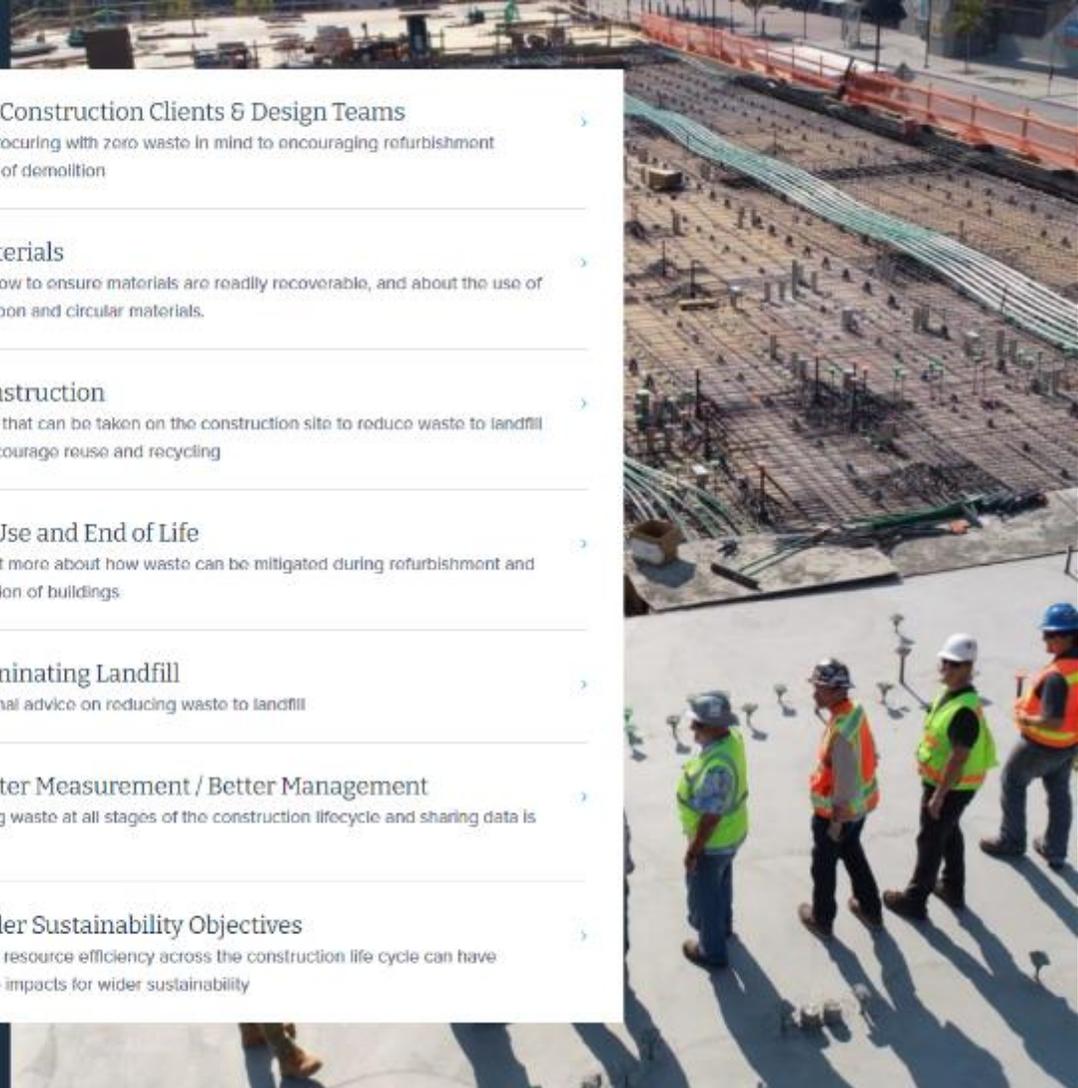
Additional advice on reducing waste to landfill

6. Better Measurement / Better Management

Tracking waste at all stages of the construction lifecycle and sharing data is vital

7. Wider Sustainability Objectives

Greater resource efficiency across the construction life cycle can have positive impacts for wider sustainability



Construction lifecycle waste web feature

1. Pre Construction Clients & Design Teams

CHANGE THEME

Select an aim using the menu below

Design for end of life

- Design for end of life
- Design for Manufacture and Assembly
- Design out waste
- Encourage refurbishment over demolition
- Procure with Zero Waste in mind



WASTE AND RESOURCE EFFICIENCY
ASBP - Designing for the Deconstruction Process
DOCUMENT / PRESENTATION
The Alliance for Sustainable Building Products examines the barriers to greater reuse of structural materials

Advanced ⌚ 60 minutes

LEARN MORE >



WASTE AND RESOURCE EFFICIENCY
Case Study: Design for Deconstruction - PassivHaus
CASE STUDY
A case study from BRE assessing the deconstruction potential of a new build PassivHaus.

Intermediate ⌚ 15 minutes

LEARN MORE >



WASTE AND RESOURCE EFFICIENCY
Design for Deconstruction
WEB LINK
BRE website which explains the benefits of designing for deconstruction

Beginner ⌚ 15 minutes

LEARN MORE >

Construction lifecycle waste web feature

3. Construction

CHANGE THEME

Select an aim using the menu below

Reduce volume of soil to landfill

Reduce volume of soil to landfill

More reuse and recycling of new build waste

Reduce waste from temporary works

Better waste services for SMEs

WASTE AND RESOURCE EFFICIENCY
Soils And Stones Report: Sustaining Our Future By Influencing Change In The UK And Beyond
DOCUMENT / PRESENTATION
Recognising soils and stones as valuable resources, rather than waste
Intermediate ⌚ 30 minutes
LEARN MORE >

WASTE AND RESOURCE EFFICIENCY
Case Study: Redrow Recycled Aggregate
CASE STUDY
1,400 tonnes of waste material processed into useable recycled aggregate
Beginner ⌚ 5 minutes
LEARN MORE >

WASTE AND RESOURCE EFFICIENCY
Sustainable reuse of Greenfield Soils
DOCUMENT / PRESENTATION
Promoting the Sustainable reuse of Greenfield Soils in Construction
Advanced ⌚ 30 minutes
LEARN MORE >

Construction lifecycle waste web feature

7. Wider Sustainability Objectives

CHANGE THEME

Select an aim using the menu below

Whole life carbon

- Whole life carbon
- Circular economy
- Smart construction
- Social Value



ENERGY AND CARBON
Greenhouse gas reporting – Conversion factors 2021
[WEB LINK](#)
DEFRA - Greenhouse gas reporting - Conversion factors 2021

Intermediate 45 minutes

LEARN MORE >



WASTE AND RESOURCE EFFICIENCY
Zero Waste Scotland Carbon Metric Publications
[WEB LINK](#)
Reports on the lifecycle impact of waste in Scotland.

Advanced 45 minutes

LEARN MORE >



ENERGY AND CARBON
Net Zero Whole Life Carbon Roadmap for the Built Environment
[WEB LINK](#)
A common vision and agreed actions

Advanced 45 minutes

LEARN MORE >

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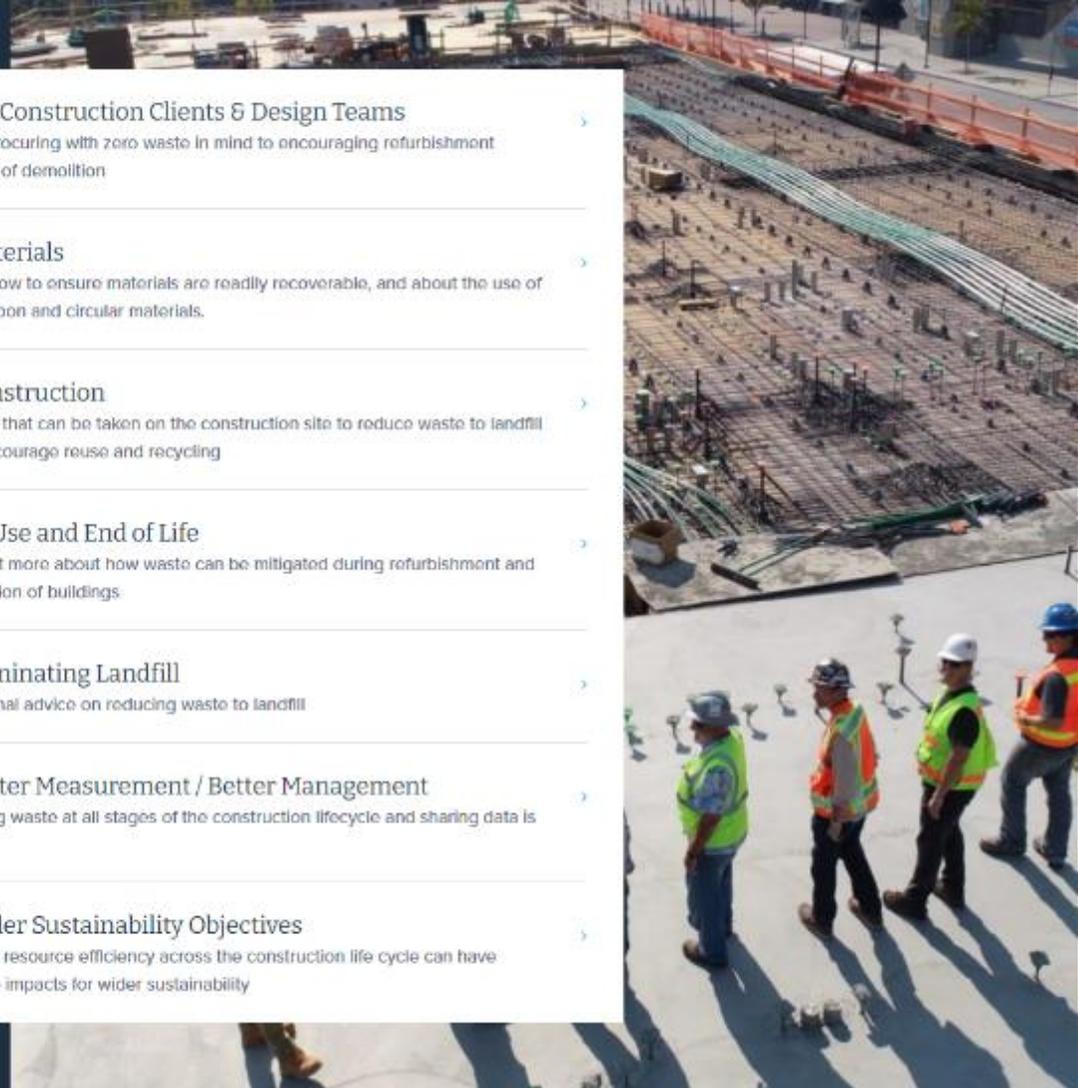
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FIND IT HERE!

[HTTPS://WWW.SUPPLYCHAINSCHOOL.CO.UK/PARTNERS/GROUPS/WASTE-GROUP/](https://www.supplychainschool.co.uk/partners/groups/waste-group/)

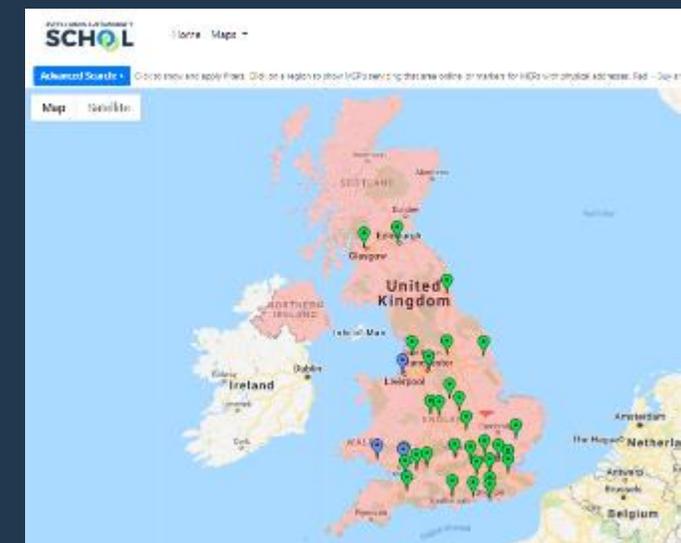
OTHER SCHOOL RESOURCES TO HELP YOU

1. 'Introduction to Waste' e-learning – available [here](#)
2. MEP map:
 - Feedback template ✓
 - Promotion & marketing ✓
 - Courtesy email to organisations ✓
 - New recommendations received ✓
 - *Now need to be added*
 - *New tags for social enterprises and academic institutions to be added*

Disclaimer:

The Material Exchange Platform (MEP) Map has been set up to provide a searchable 'directory' of information on the location and characteristics of a variety of Materials Exchange Platforms across the UK. You may have surplus stock from a recently finished project, or are looking for second hand upcycled furniture; these are some examples of how you might use MEPs.

NB: The map is as a meta data tool. The School has collated existing publicly available information on MEPs presenting it in one, easily-accessible place. Other than checking the continued existence of any given MEP, we have not added any further information, comment or qualification as to its nature. Moreover, the School is neither endorsing, recommending nor rating any of the material exchange platforms within the map. It is for the map user to do their own due diligence on any MEPs for which they get results.



THANK YOU

ANY MORE
QUESTIONS?

WE NEED YOUR
FEEDBACK
PLEASE



[HTTPS://FORMS.OFFICE.COM/E/0PTRKRH5DA](https://forms.office.com/e/0pTRkRH5DA)

SUPPLY CHAIN SUSTAINABILITY

SCHOOL



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