SUPPLY CHAIN SUSTAINABILITY SCHOOL

National Highways SDF Save a Skip – a Waste & Resource Efficiency Workshop

23rd May 2024 – 1.00 - 2.30pm

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Welcome & introductions

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@SupplyCSSchool

Overview

1. The waste reduction policy agenda
2. Cost of waste
3. Waste and Resource Efficiency Management Planning
4. Q&A

Introduction

Outcomes

At the end of this session you will:

- Have revisited some of the reasons to take action
- Examined the opportunity to improve
- Considered ways to improve site waste management and resource efficiency
- Be better placed to explain requirements to others.

Please Participate

If you have **QUESTIONS**, please shout up or write them down in the Q&A

Cameras on are helpful, mute mics if not speaking to help the sound quality

Remember to give your opinions too, plus links to any useful information for colleagues

SLIDES will be distributed afterwards

We need your feedback please

You will receive a link after the event:

SUPPLY CHAIN SUSTAINABILITY SCHOOL

National Highways SDF / PDF Suppliers

Productivity to Predictability- Leadership Strategies Workshop

Wednesday, 26 June 2024, 09:00-15:30

Online - Zoom

REGISTER NOW

This face to face workshop is for leaders and managers from SDF/PDF supply chain to learn more about productivity as a tool to deliver business benefits and the National Highways approach. Find out about key benefits including reducing waste and errors, improving processes, leading to greater efficiency and productivity. An interactive, engaging session led by BBI Services.

Aimed at: one representative from each supplier company due to limited places aimed at managers or leaders with a responsibility for improvement and productivity.

Featuring: Providing an opportunity to network, engage and share practice.

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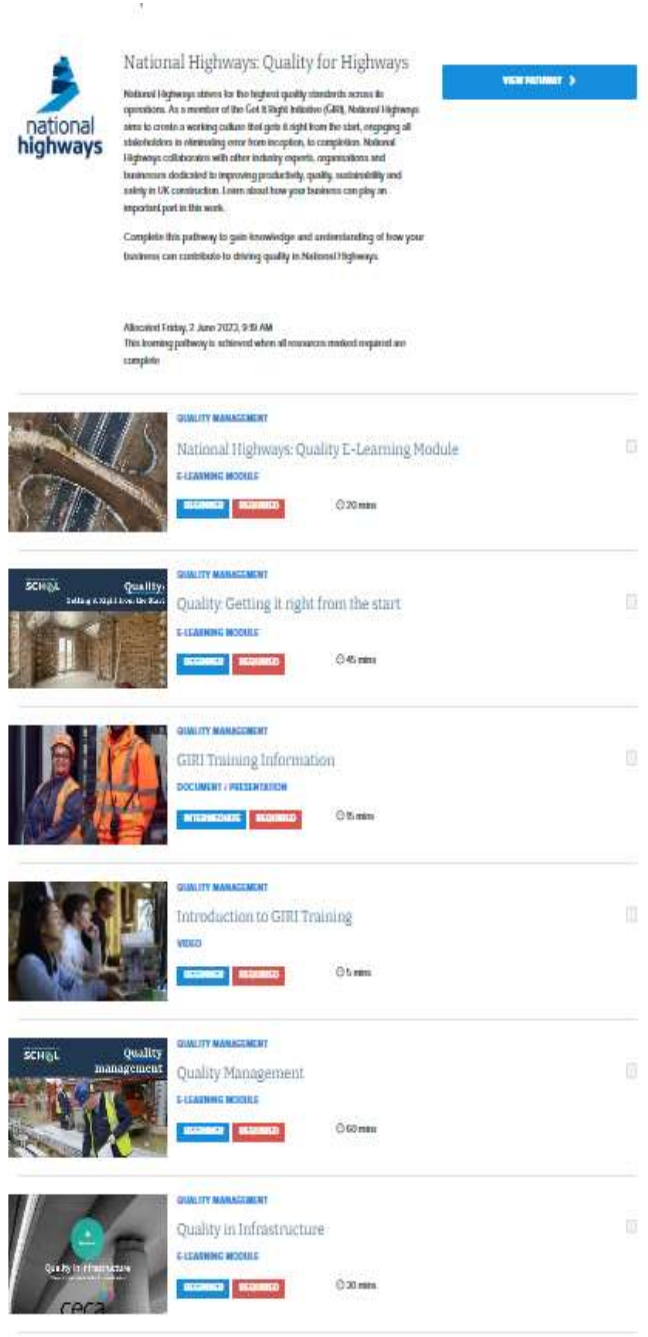
New National Highways E-Learning Pathways

Pathways

Register on the links below to complete this online learning

- NEW Business Improvement and PPC – User Guidance for Suppliers
- NEW Business Improvement, Productivity and PPC (Percentage Plan complete)
- NEW An Introduction to Health and Safety
- NEW Quality for Highways
- NEW Compensation Events
- NEW Productivity and Lean Construction
- Social Value Pathways 1 & 2
- FIR Pathways Level 1 & 2
- Customer Experience Pathways x 3 – Strategic Procurement, Roadworks & Supplier Customer Maturity
- Supplier Development System
- Core 1 & 2 Pathways
- Sustainability and Net Zero Pathway



Using Jamboard and Chat box

- We will introduce Jamboard shortly – you have 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 Zoom

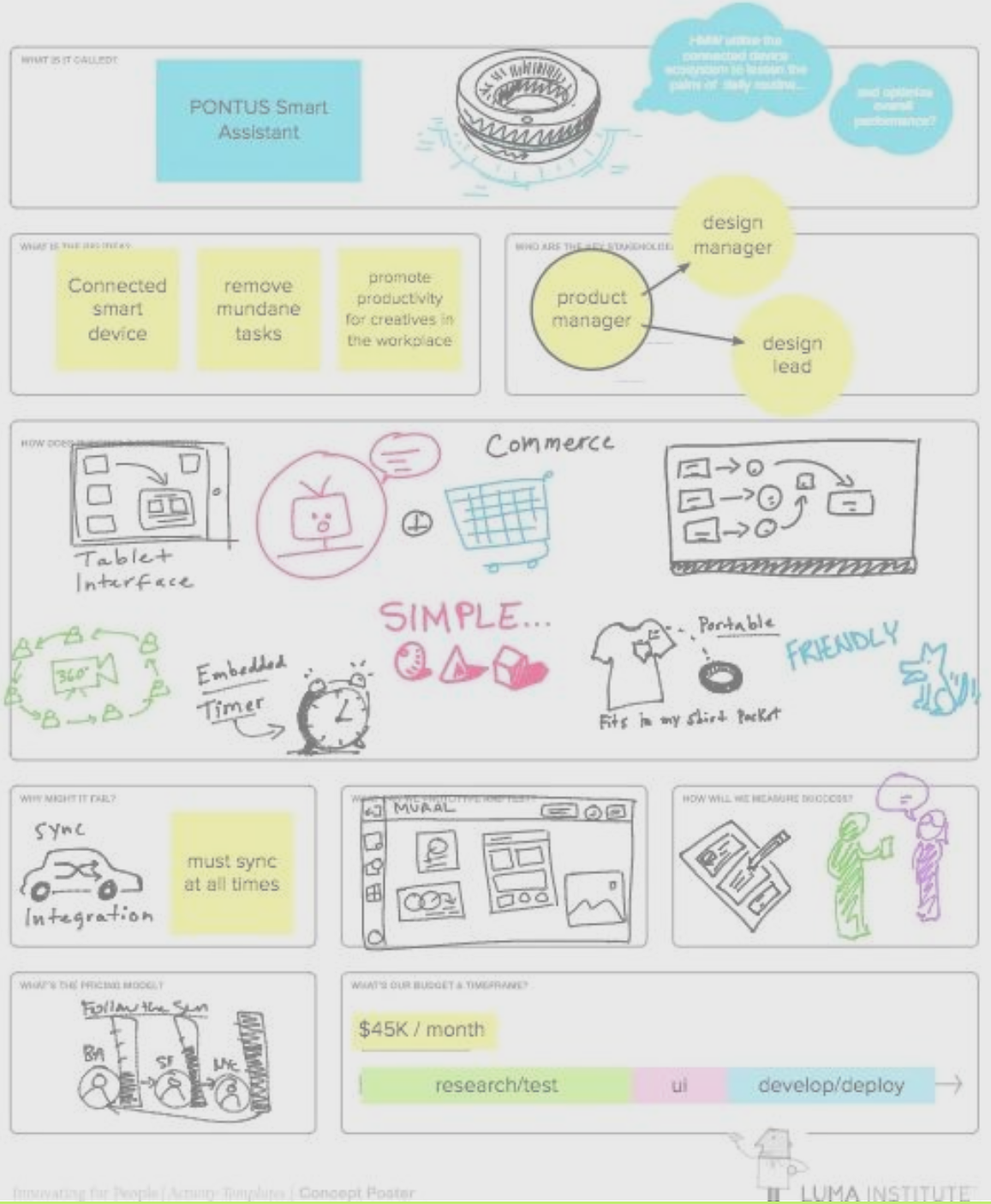
- If you can't access Jamboard or have something else to ask us, just use the Chat function. Again this is in the Zoom toolbar. Use this to add other comments, add your questions, or just introduce yourself to the group

- Feel free to shout out – I am very happy to be interrupted!

https://jamboard.google.com/d/1UruZ8KofBB4QBHwhT14juokS0H4-0EqoCna6vmvfFVQ/viewer?f=0

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!



The School is a common approach to…

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

220+ Partners

14,000+ companies

40,000+ individual learners

220+ Partners

20,000+ companies

80,000+ individual learners

What is Waste?

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

(Waste Framework Directive)

Stakeholders?

Who is interested?

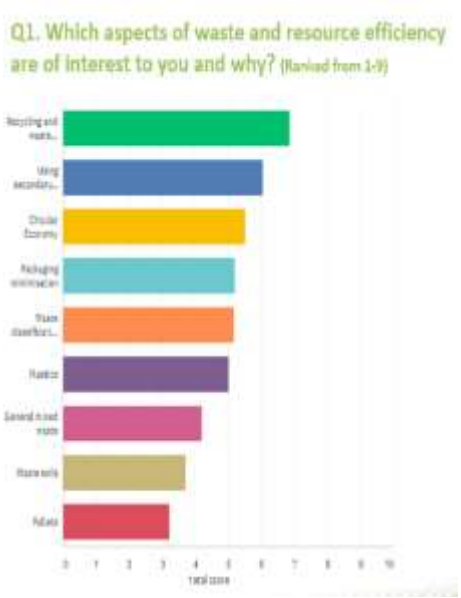
https://jamboard.google.com/d/1UruZ8KofBB4QBHwhT14juokS0H4-0EqoCna6vmvfFVQ/viewer?f=0

SUPPLY CHAIN SUSTAINABILITY SCHOOL

The School's Waste & Resource Use Category Group

Refreshed
-Landing page
-Resources (new and old)

Material Exchange Platforms Mapping
- Skanska collaboration



Surveys
-Member interest
- Partner plastic waste

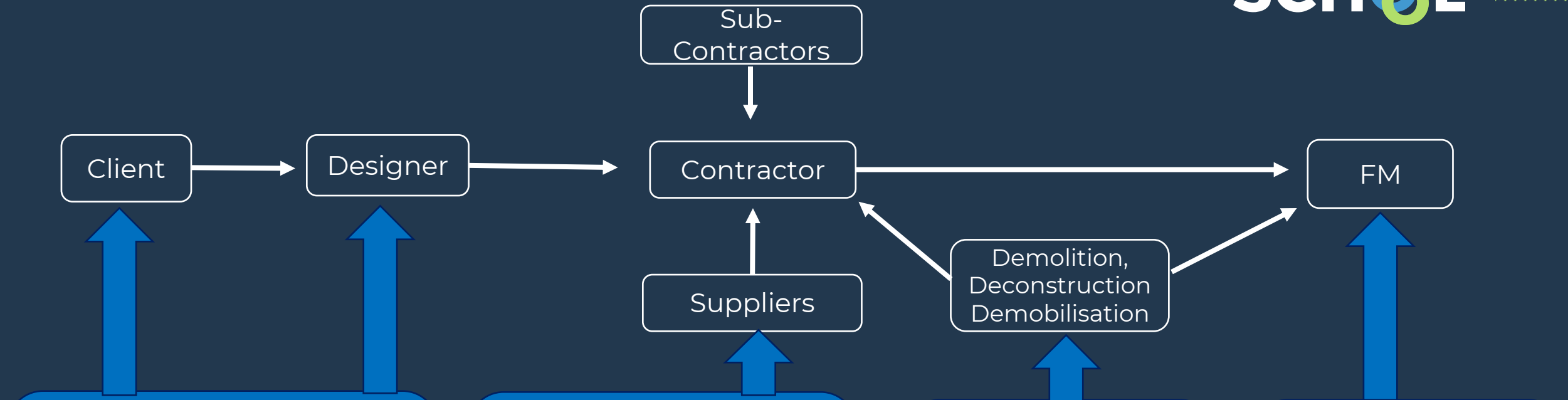
Partner case studies

Leadership group support

Our current priorities

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	So we can work within these and push for improvements
Supporting procurement processes	Developing model tender questions and responses
Materials consolidation centres	Implementing these will help to reduce waste and carbon
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	Waste = carbon
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

Intervention points



Continuous link to circular economy

The UN Sustainable Development Goals

Sustainability: Waste and Resource Efficiency – National Highways

Optimising resource and energy use

Our ambition

The principles of circularity (reusing materials for their highest value purpose and treating 'waste' as a resource), will be embedded into our business.

https://nationalhighways.co.uk/media/g5yfcl3m/nh-environmental-sustainability-strategy_final_020523.pdf

Sustainability: Waste and Resource Efficiency – National Highways

What will we do and when?

2024

Environmentally responsible sourcing

Establish principles of environmentally sustainable procurement and develop an implementation plan.

2025

Resource exchange mechanism

Trial and evaluate a resource exchange mechanism at a regional level and publish our findings and next steps.

2025

Embed circularity into our design, construction, operations and maintenance

Develop performance metrics and baselines for circularity.

2030

Integrate circularity assessment requirements into all relevant design and maintenance standards, including reduction of virgin materials, waste management processes and material flows.

https://nationalhighways.co.uk/media/g5yfcl3m/nh-environmental-sustainability-strategy_final_020523.pdf

What type is it?

“Inert”

- Non bio-degradable material
  - E.g. Non-contaminated subsoil, aggregates, etc.

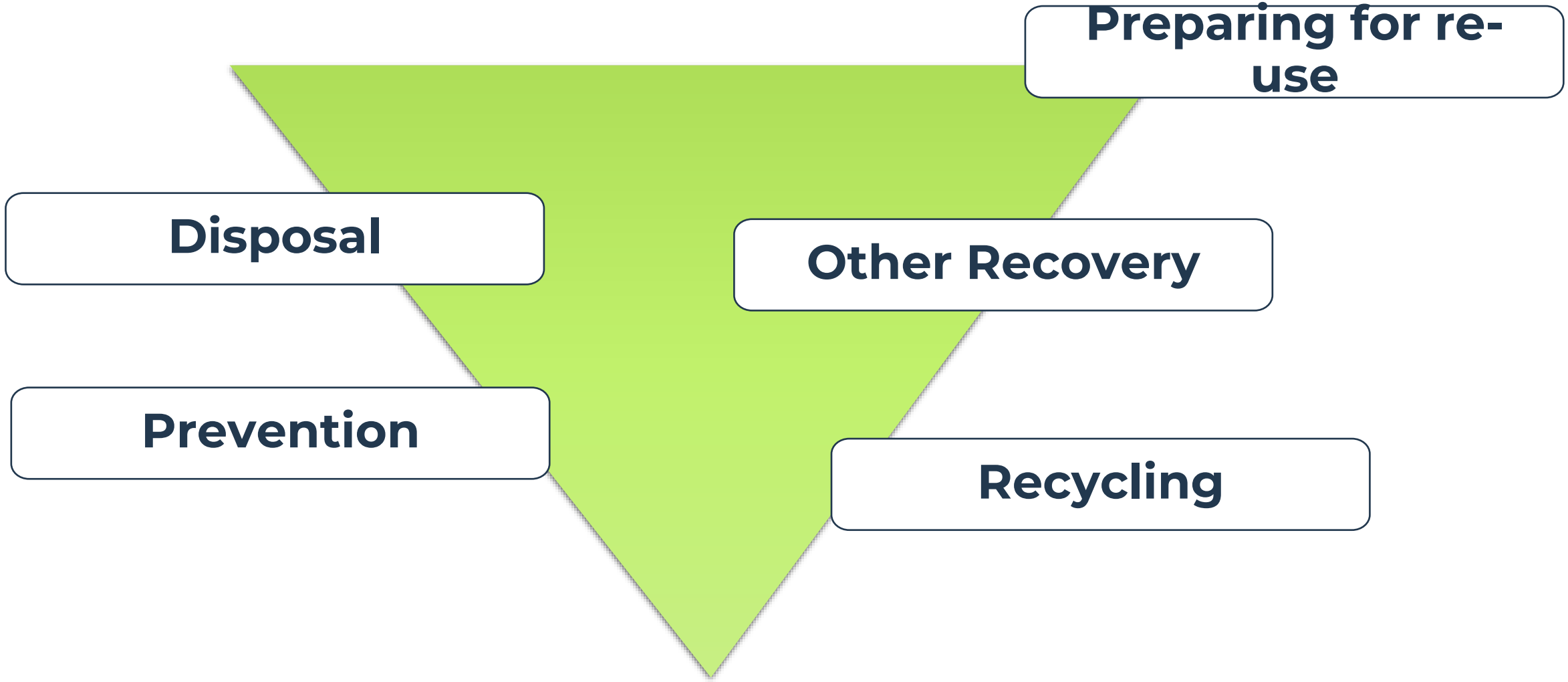
Non-hazardous

- Non-contaminated bio-degradable materials
  - E.g. Topsoil, timber, metal, plastics

Hazardous

- Contaminated material and harmful materials
  - E.g. Oils, paints and other organic liquids

The Waste Hierarchy



POLL: 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

Alert!

Mandatory digital waste tracking will be introduced from April 2025.

“Our vision and mission
Our vision is to make it easy to track waste and resources in real time throughout the economy. Our mission is to deliver a waste tracking service that is simple to use and provides value for all users.

Benefits of change
Mandatory digital waste tracking will help businesses and government move towards a circular economy by joining up and digitising currently fragmented systems to provide a single comprehensive way of tracking the amount and type of waste being produced and where it ends up.

This will also support the effective regulation of waste, transforming the way environmental regulators monitor compliance, prioritise regulatory activities and help prevent waste crime, including fly tipping, deliberate misclassification of waste, illegal waste exports and the operation of illegal waste sites. It will also facilitate a more level playing field for legitimate waste operators”

Source: https://www.gov.uk/government/publications/digital-waste-tracking-service/mandatory-digital-waste-tracking

The Future?


LINEAR ECONOMY
RAW MATERIALS
DESIGN
MANUFACTURE
CONSUMPTION
DISPOSAL


RAW MATERIALS
DESIGN
MANUFACTURE
CONSUMPTION
MAINTENANCE
REUSE/REFURBISHMENT
RESIDUAL WASTE
RECYCLING
CIRCULAR ECONOMY

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.

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

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’.

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Packaging Optimisation in the Housebuilding Sector

A report by the Waste & Resource Use Leadership Group of the Supply Chain Sustainability School

Contents

Contributions from:

- Ten project partners
- 23 manufacturers, suppliers, merchants and other intermediaries

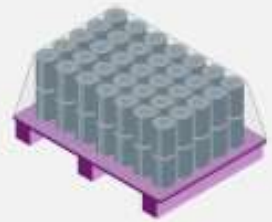
Dozens of examples and case studies
Honest examination of barriers and trials that could overcome these

Where packaging is used

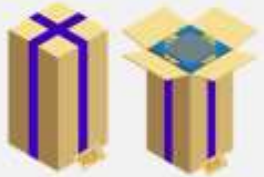
Bricks and blocks

Doors, windows, stairs, other joinery items

Drylining and insulation

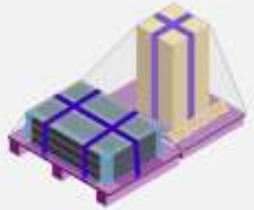


Appliances



Consumables and small items

Kitchens and bathrooms



Wrap
Aka bagging, stretchwrap, shrinkwrap
LDPE / LLDPE

Corner protectors
or edge protectors
EPS, hard plastic, cardboard, pulp

Banding
Aka strapping
PET, Polyester, polypropylene, card

Pallets
or bearers
Timber, chipboard

Sheets or sleeves
Cardboard or corrugated polypropylene

Bags
Flexible plastic or paper

Boxes
Cardboard

Packing
Polystyrene, paper

Five tips for more sustainable packaging

Text here

Question
if packaging is actually needed at all – especially plastic wrap

Image source: Vistry

Optimise
wrap use by minimising thickness, specifying LDPE or LLDPE using at least 30 percent recycled content and avoiding excessive use of branding, inks and stickers

Image source: Bellway

Switch
from plastic and expanded polystyrene to cardboard or pulp for packaging elements which protect products

Image source: Taylor Wimpey

Ensure
containers are sized appropriately to reduce the need for additional space packing

Image source: Crest Nicholson

Engage
the whole supply chain to reduce or enable more circular use of pallets

Full project report available Here:

Packaging Optimisation in the Housebuilding Sector Report

The Green Construction Board

Construction Leadership Council

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 CO_2e, 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	2030s	2040s
• 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.	• By 2030 costs are reduced by 10% through designing out waste and material optimisation.	• 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.

Project lifecycle waste web feature

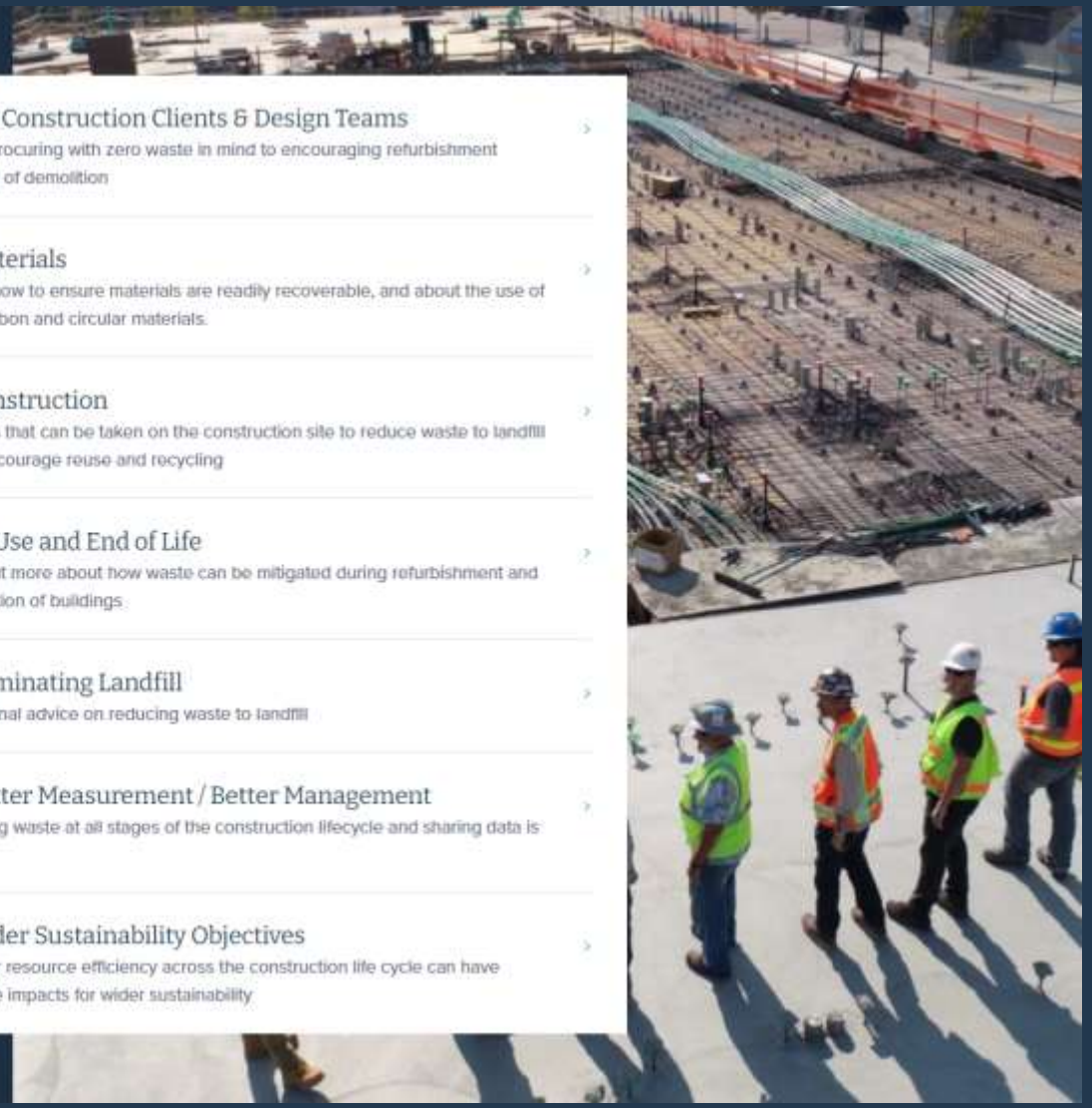
A practical guide to

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.

https://www.supplychainschool.co.uk/partners/groups/waste-group/



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

Financial Implications

Waste Facts

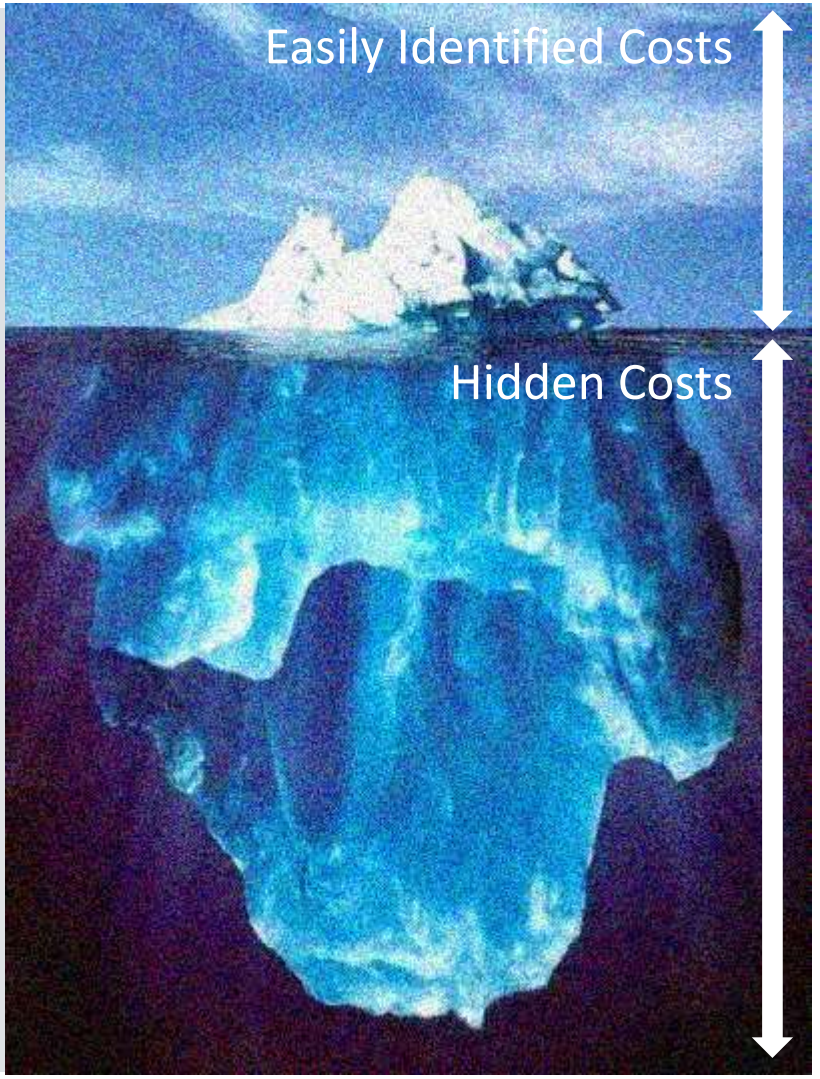
Construction Demolition and Excavation Industry

OVER 100m tonnes generated by C & D annually

Landfill Tax

The standard rate of landfill tax will rise to £126.15 in 2025/26, while the lower rate will increase to £4.05 per tonne.

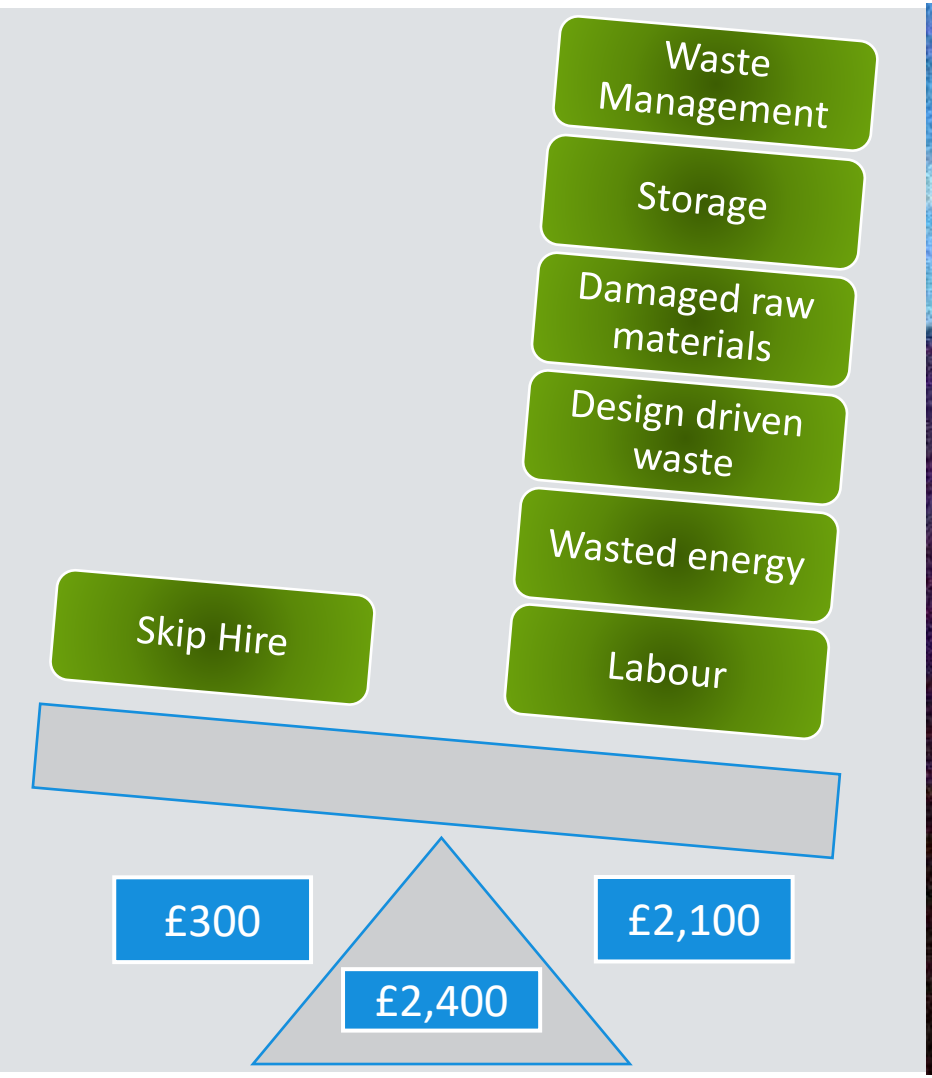
True Cost of Waste

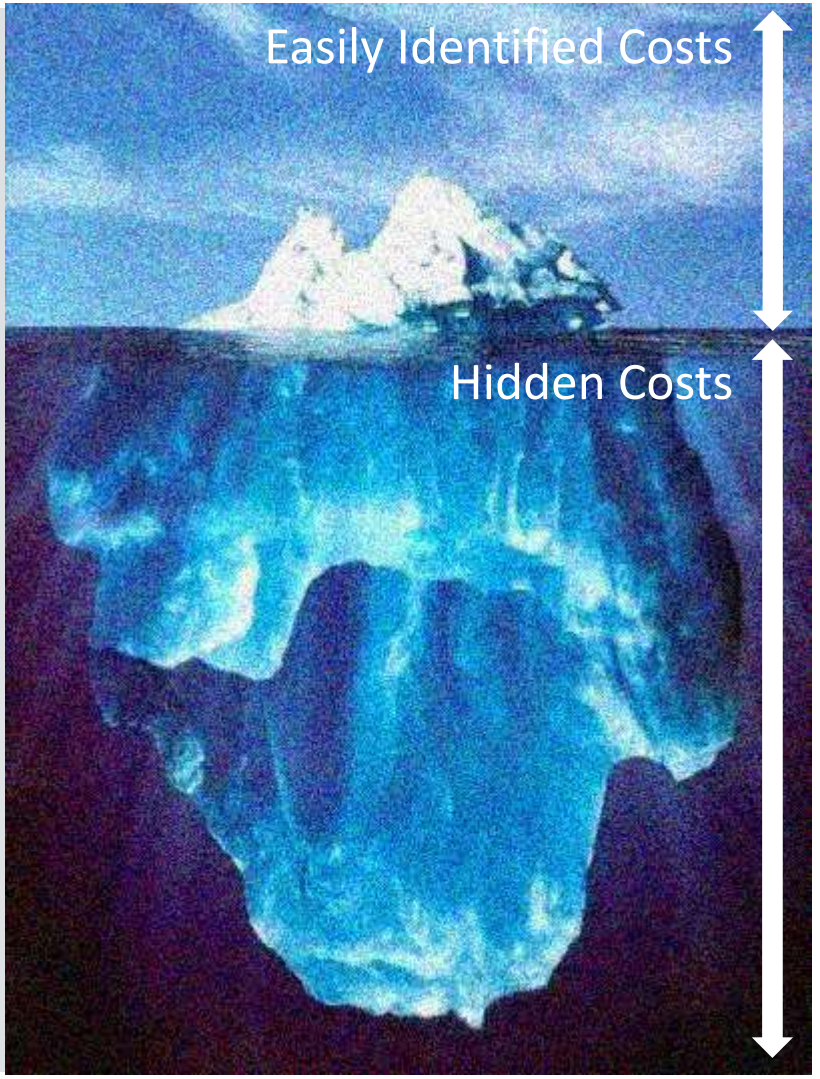


Use the Jamboard

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

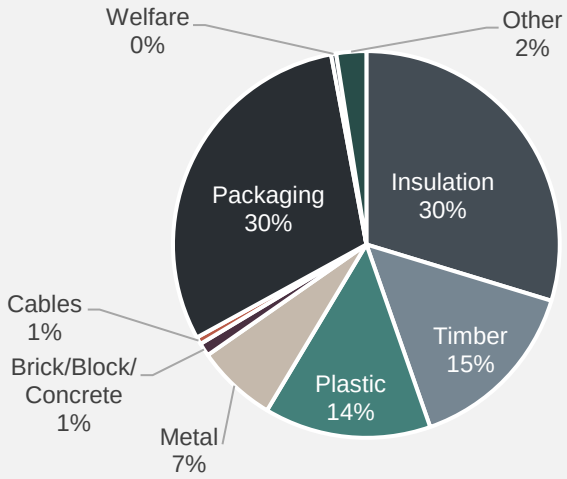
Site Management and Practices

- 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

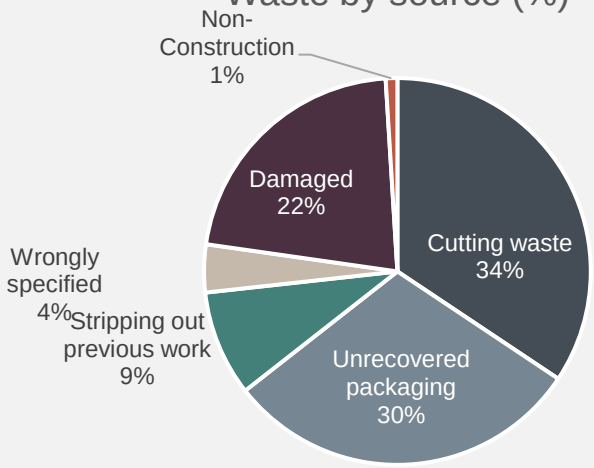
Site Waste Reduction Protocol

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**

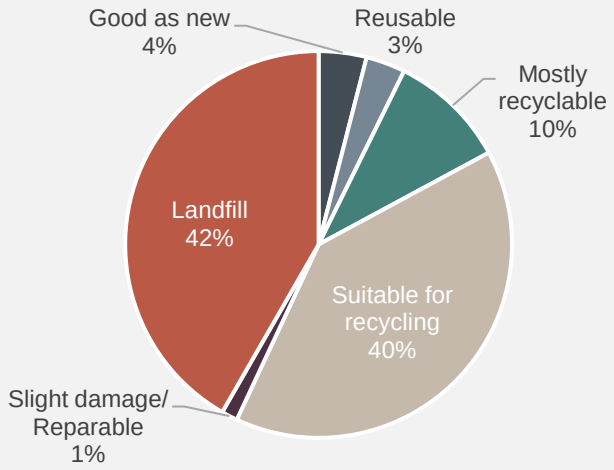
Waste by volume (%)



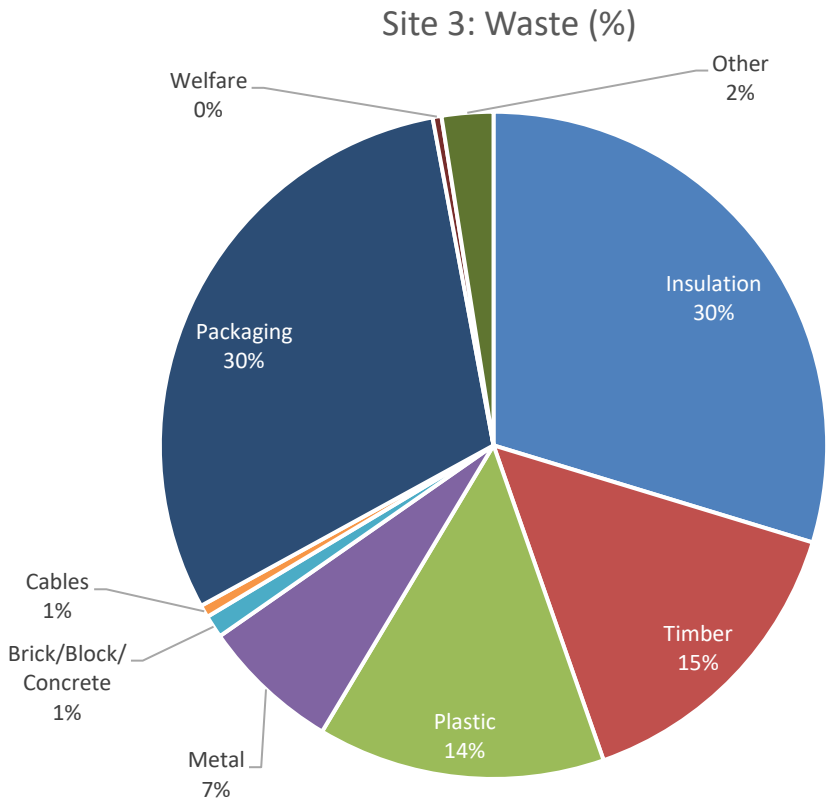
Waste by source (%)

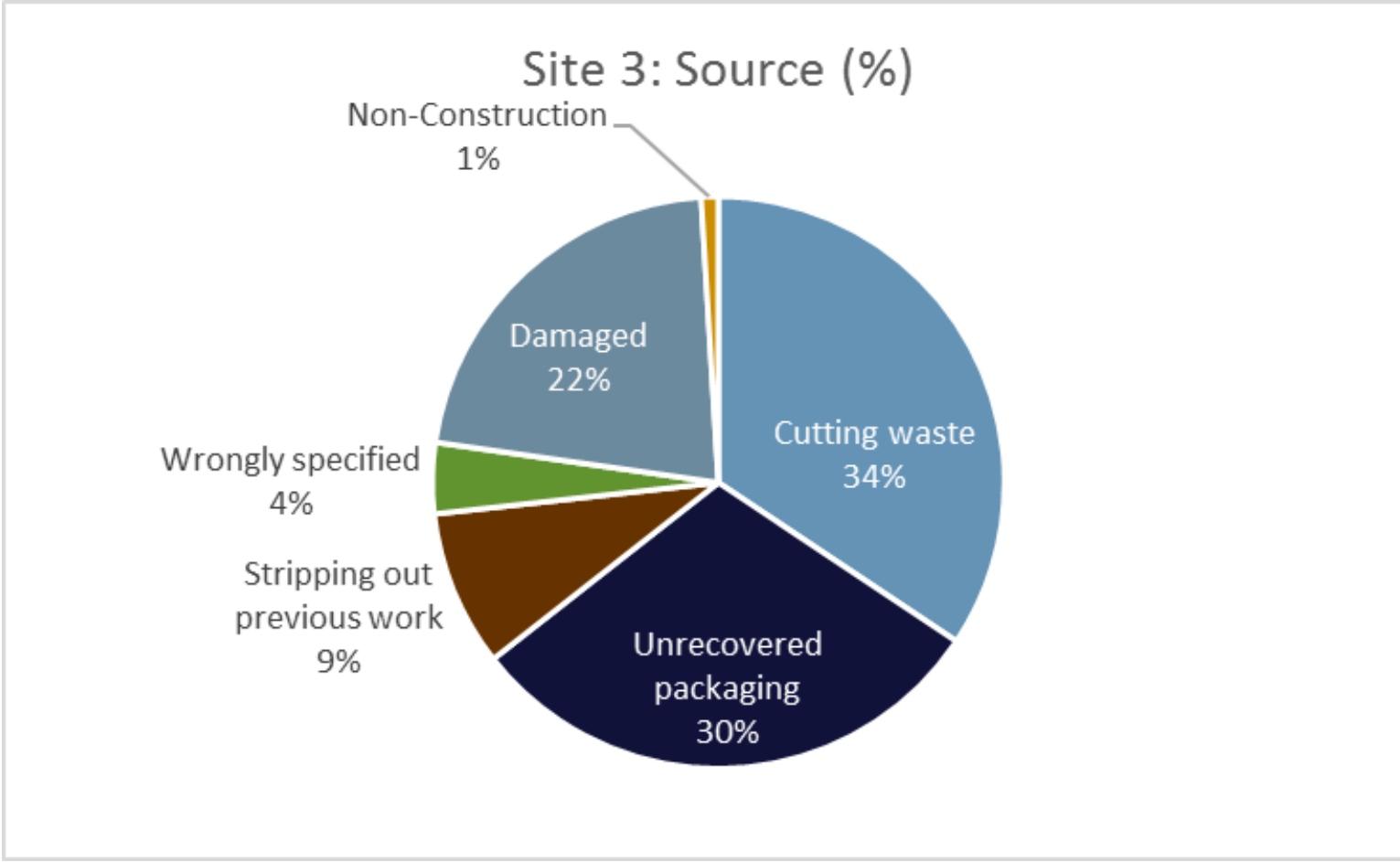


Condition of waste (%)

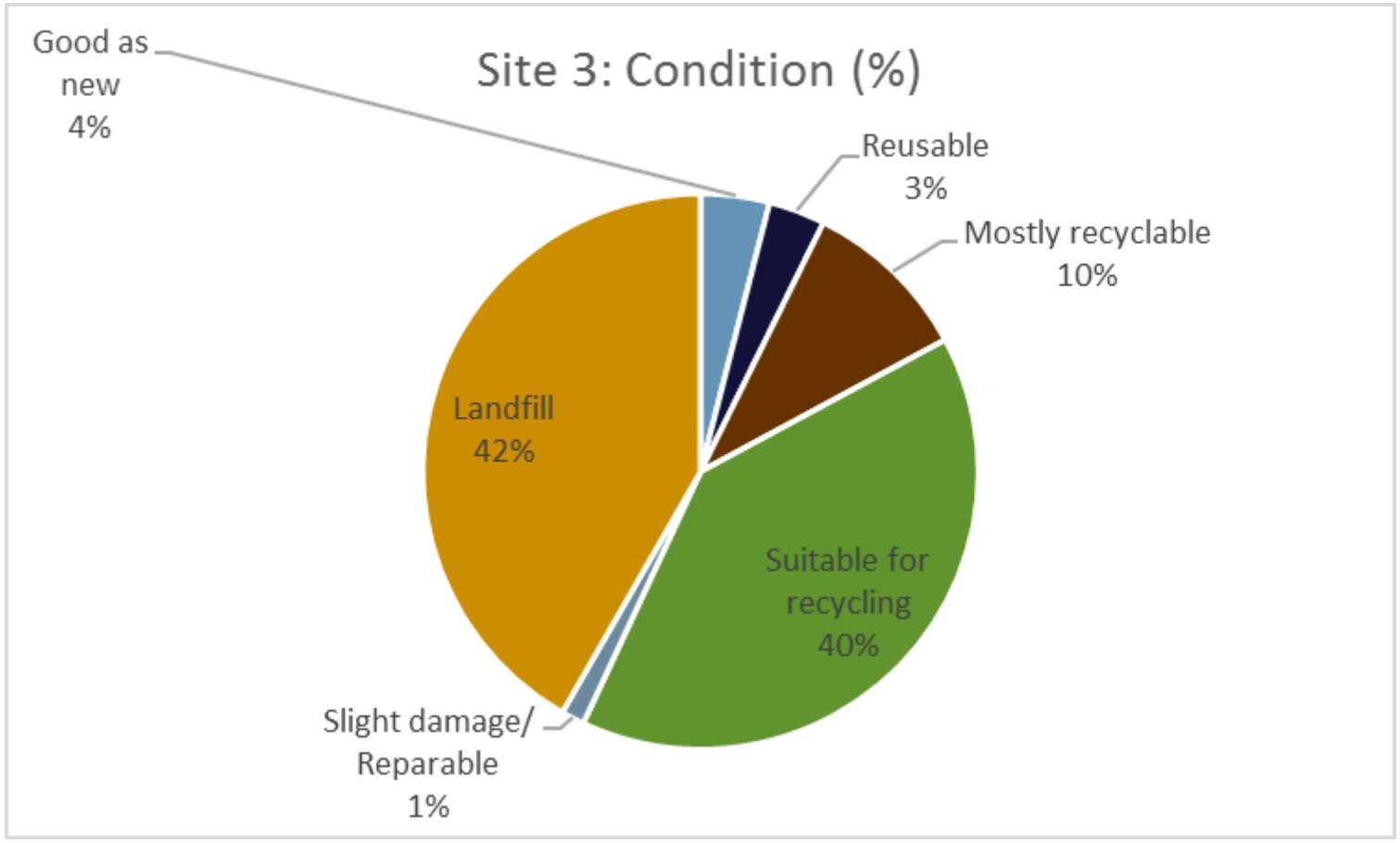


Waste by percentage of volume
Source: Zero Waste Scotland – standard housing project example

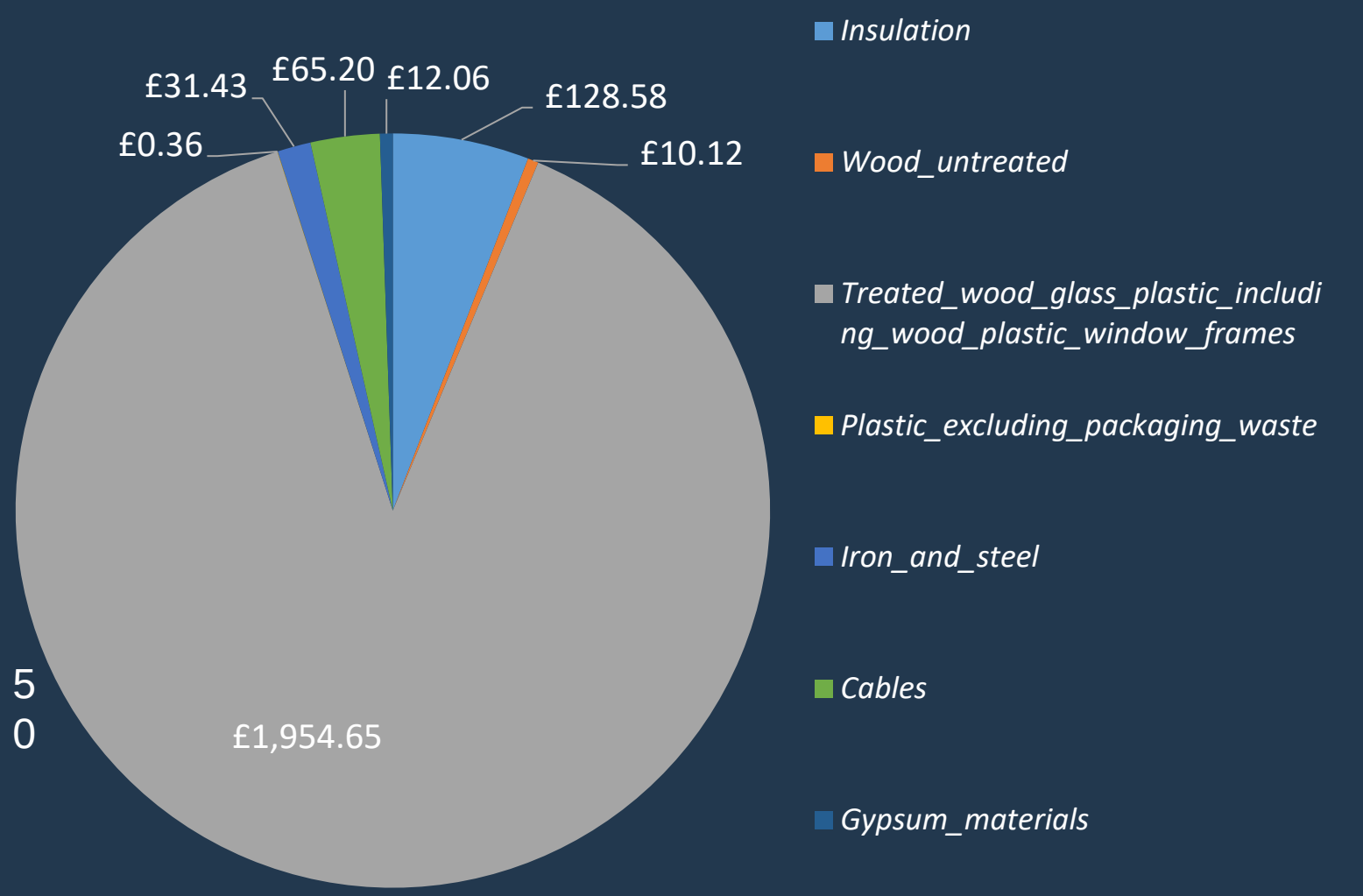




Condition of the Waste



Cost (8 Yard Equivalent): Site 1 – Higher Education Build

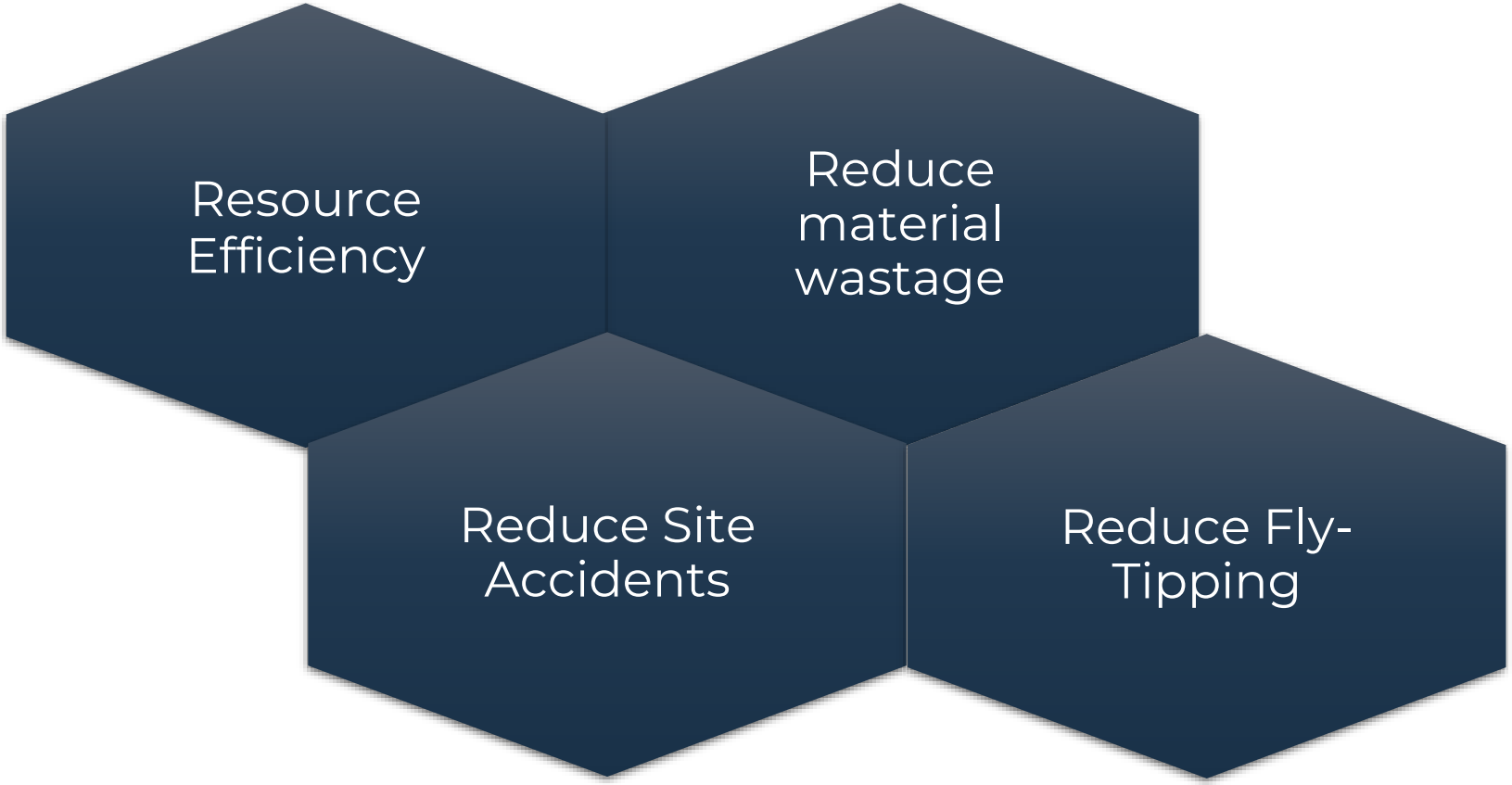


- **1/3 of products discarded were in a usable condition**
- **80% of waste was from cutting standardised materials to fit**
- **The largest waste streams by volume products didn't drive the costs**

Waste Management & Reduction

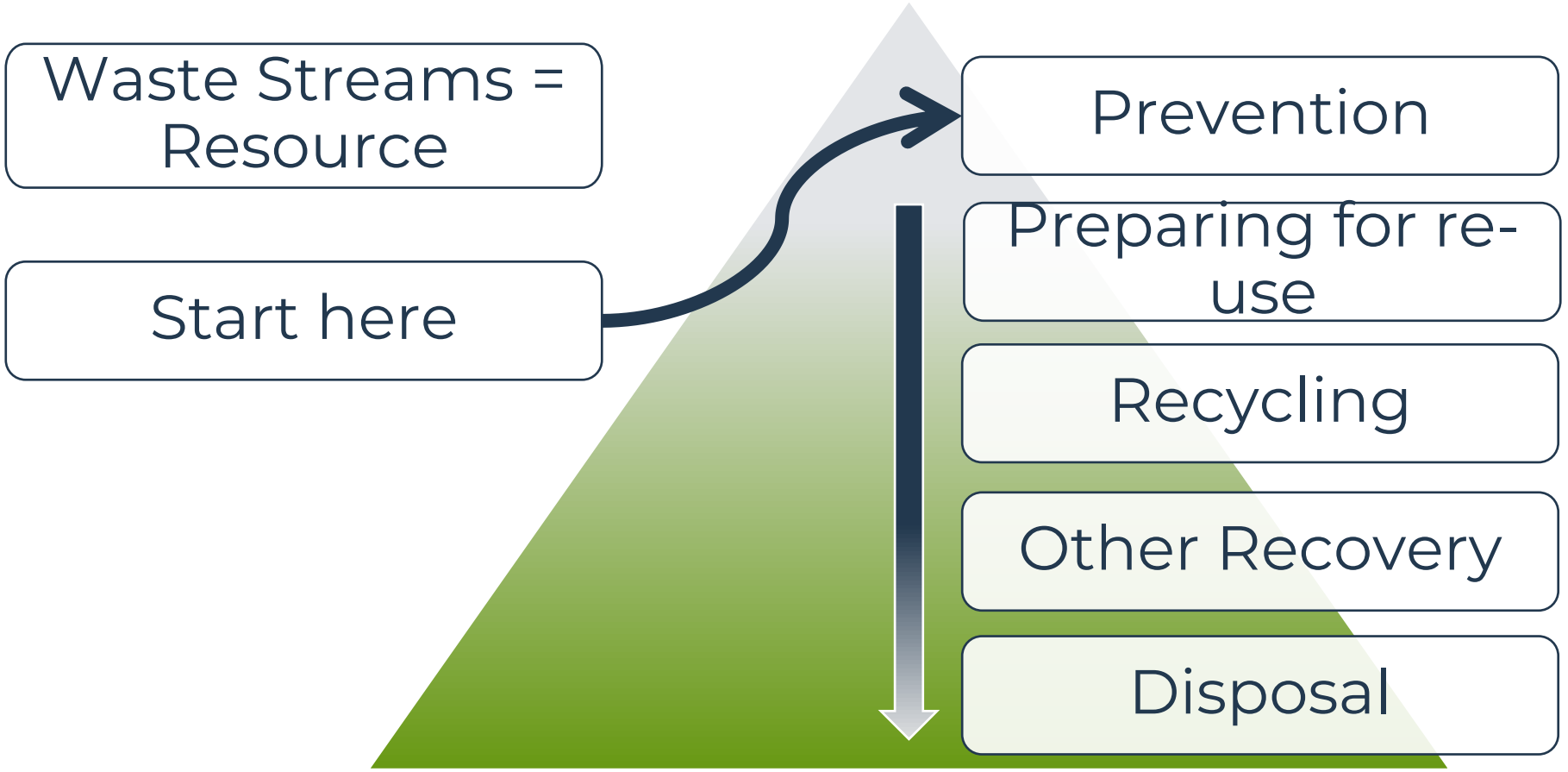
Waste Management Planning

Why bother?



Waste Management Planning

Hierarchy - legislative requirement!



Waste Management Planning

Designing out waste

- Value Engineering
- Pre-fabrication
- Design to Standard Sizes
- Good works planning

Waste Management Planning

What could we do?

- Prevention
- Preparing for re-use
- Recycling
- Other Recovery
- Disposal

- On-Site Aggregate Crusher
- Social Enterprise Schemes /MEPs
- Use on other projects
- Pallet Take-Back

Waste Management Planning

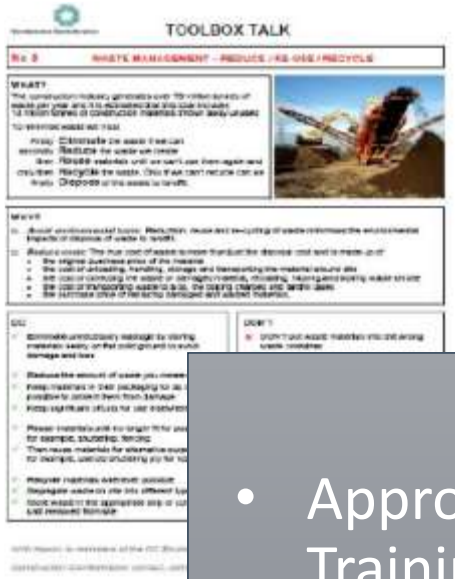
What can we do?

- Prevention
- Preparing for re-use
- Recycling
- Other Recovery
- Disposal

- Inert Skip
- Plasterboard
- Waste Segregation
- Plastics!

Waste Management Planning

Training and Awareness



- Appropriate Training
  - Specific Trades
  - Waste Minimisation

- In-House and Sub-Contracted employees
- Waste Management Plan available for all

Waste Management Planning

Good Housekeeping

Plan for efficient materials and waste handling

Set indicative targets on trades and sub-contracts

Early planning essential

Waste Management Planning

Measure

Record

- Quantities and Types of Waste
- Disposal Method

Compare

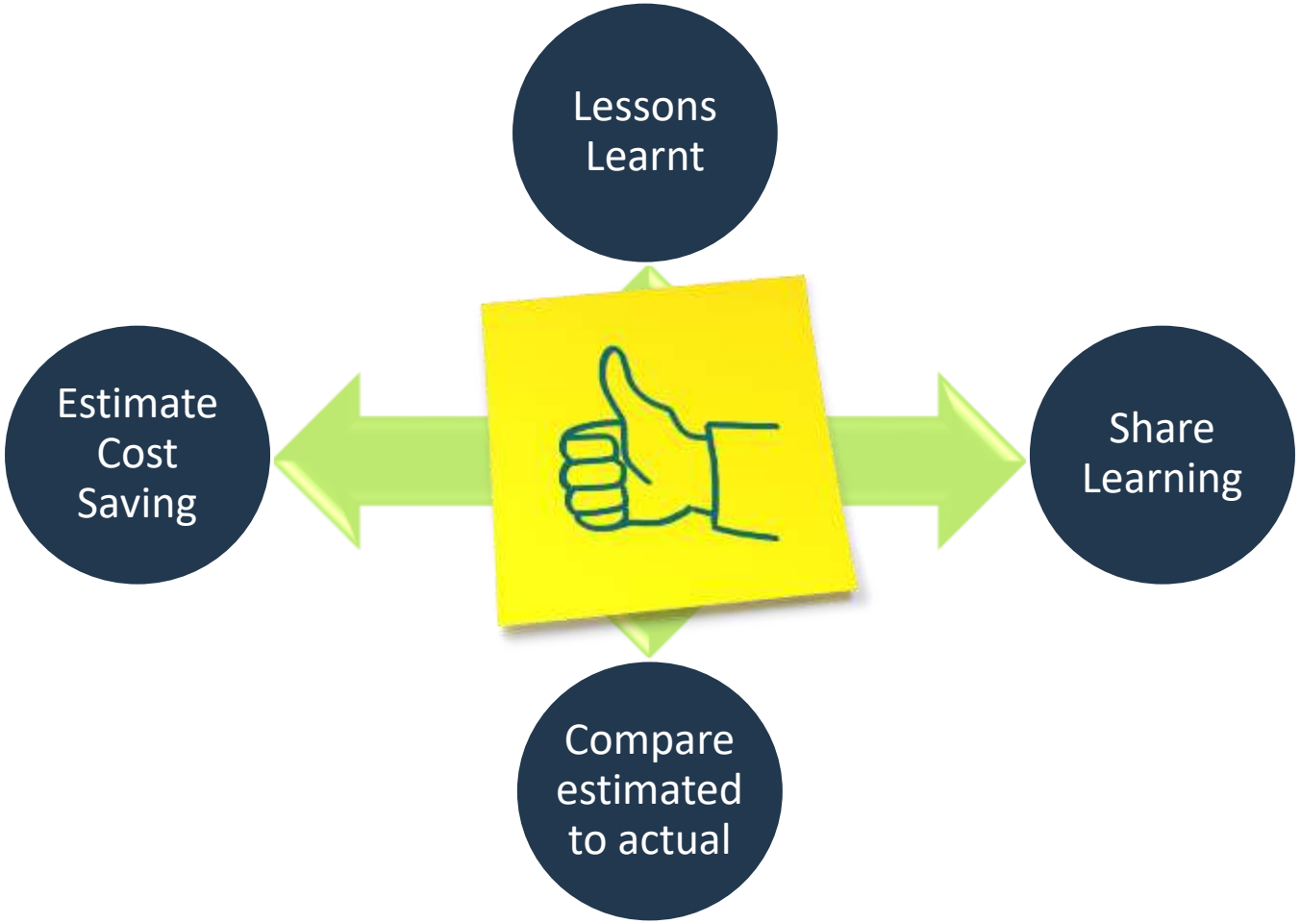
- Actual Vs. Targets
- Review if required

Share

- Inform workforce of progress

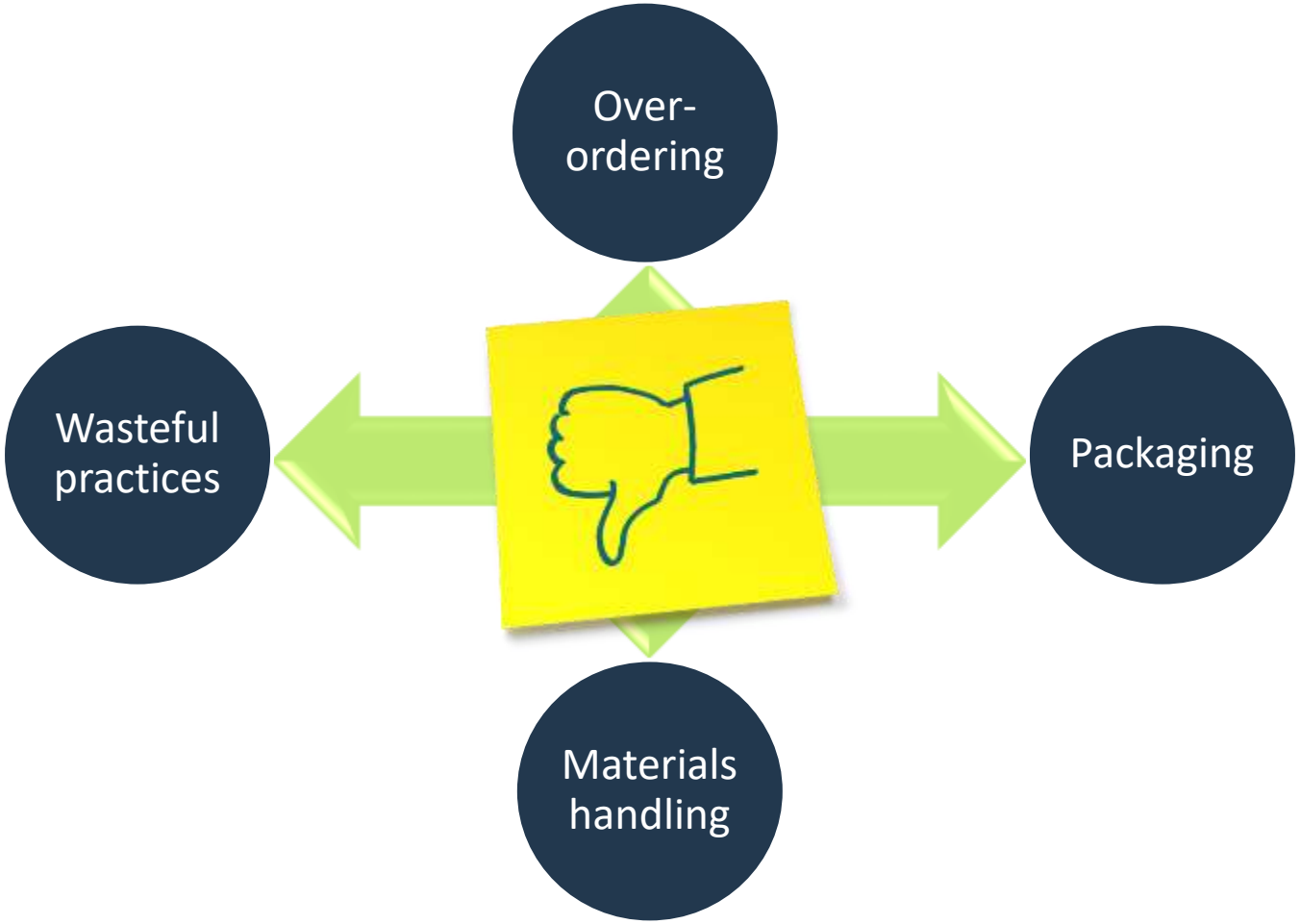
Waste Management Planning

Review



Keep an eye on the enemies!

Review



Putting it all into action

Some ideas for introducing a structured way of reducing waste – from a School Partner

SUPPLY CHAIN SUSTAINABILITY SCHOOL

REDROW

SUSTAINABILITY

WASTE REDUCTION CASE STUDY

OCTOBER 2021

WASTE RESEARCH PROJECT

Built Oxford House type in 3 different regions - Yorkshire, Lancashire and the South East.

Carefully segregated waste from each plot in to different containers for individual waste streams.

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A VISUAL REPRESENTATION…

1 SKIP FULL OF WASTE WOOD

CONTAINER WITH 8 TONNE BAGS OF PLASTIC/CARDBOARD PACKAGING

1 SKIP OF INERT WASTE

5 TONNE BAGS OF PLASTERBOARD

OFFCUTS

PLASTERBOARD

TIMBER

ELECTRICAL WIRES

ANGLE BEADING

CHIPBOARD FLOORING

PLASTIC PIPING

PREVENTION + REDUCTION

The Waste Hierarchy

Following the waste hierarchy, during the waste project I tried to focus mostly on ideas which could help to prevent and reduce waste.

Therefore the findings here are mostly relating to preventing/reducing waste, but there will be a short section at the end about recycling.

OVER ORDERING

Leftover items:

skirting boards, architraves, timber, soffits & fascias, chipboard flooring, staircase balustrades parts, bricks, blocks, tiles, plastic guttering.

‘Double’ cost to the business:

1) Materials purchased but not required.
2) Costs associated with transporting, offloading, storing and disposing of the surplus items.

PACKAGING

Packaging included shrink wrap, plastic banding and containers for adhesive and paint.

Most packaging waste was generated from the second fix - kitchen and bathroom appliances, radiators and towel radiators, shower screens, door casing wrapping, staircase balustrade wrapping and straps.

INEFFICIENT USE OF MATERIALS

Have the plasterers opened significantly more bags of plaster than can be realistically used before setting?

Traditional low prioritisation of materials costs?

MATERIAL HANDLING

Batch of roof tiles were delivered cracked - damaged during transportation or offloading?

Other products damaged during installation: plasterboard, angle beading, roof tiles, a bath panel and these could not be used.

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MATERIAL PROTECTION

Some sites were better than others at protecting materials.
Eg use of Brick Jackets (cost £3 each, re-usable) vs not protecting bricks > leading to damage

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SUPPLY CHAIN ISSUES

WHAT SHALL WE DO WITH THESE?

Long lead-times and material supply issues are making it harder for sites to reject incorrect or inadequate deliveries.

Sites don’t want to wait weeks for a new delivery.

REDROW

SUPPLIER/MANUFACTURER ERROR

Granite worktop for kitchen of plot 121 was manufactured 5mm too short on either side (expensive mistake!)

Some deliveries were incorrect, short in quantity or late.

FREQUENT DESIGN CHANGES

Frequent design changes can cause issues for sites and suppliers.

This batch of rood products was delivered to a waste project plot, for a previous / outdated version of the Oxford House type.

If the products can’t be used on another plot then they may end up as waste.

Tension/restraint straps (60 x £1.48 each = £88.80)

Joist hangers (14 x £3.11 each = £43.54)

Framing anchors (62 x £0.30 each = £18.60)

Joist caps (15 x £2 each = £30)

COMPLEX DESIGN FEATURES

Bespoke door under the stairs was specially manufactured for Redrow and needed to be cut to size on site.

Door was damaged and chipped during cutting and installation and had to be repaired by an external repair worker who filled and painted the door – costing time and money.

REDROW

REDUCING WASTE
NEXT STEPS

APRIL 2021

WASTE + BUILDABILITY WORKING GROUP

The research project has given us many good starting points for reducing our waste and identified quick win opportunities.

Working group has been established internally, with various heads of departments eg Commercial, Technical, Construction and Sales. Meeting every other month.

Aims:

- Implement some of the improvement opportunities identified in the research project.
- Determine waste reduction priorities for Redrow, taking various departments and experiences into consideration.
- Identify ways to enhance buildability, in turn improving elements of project performance (eg time, cost)

THE REDUCE RUBBLE
INITIATIVE FROM REDROW

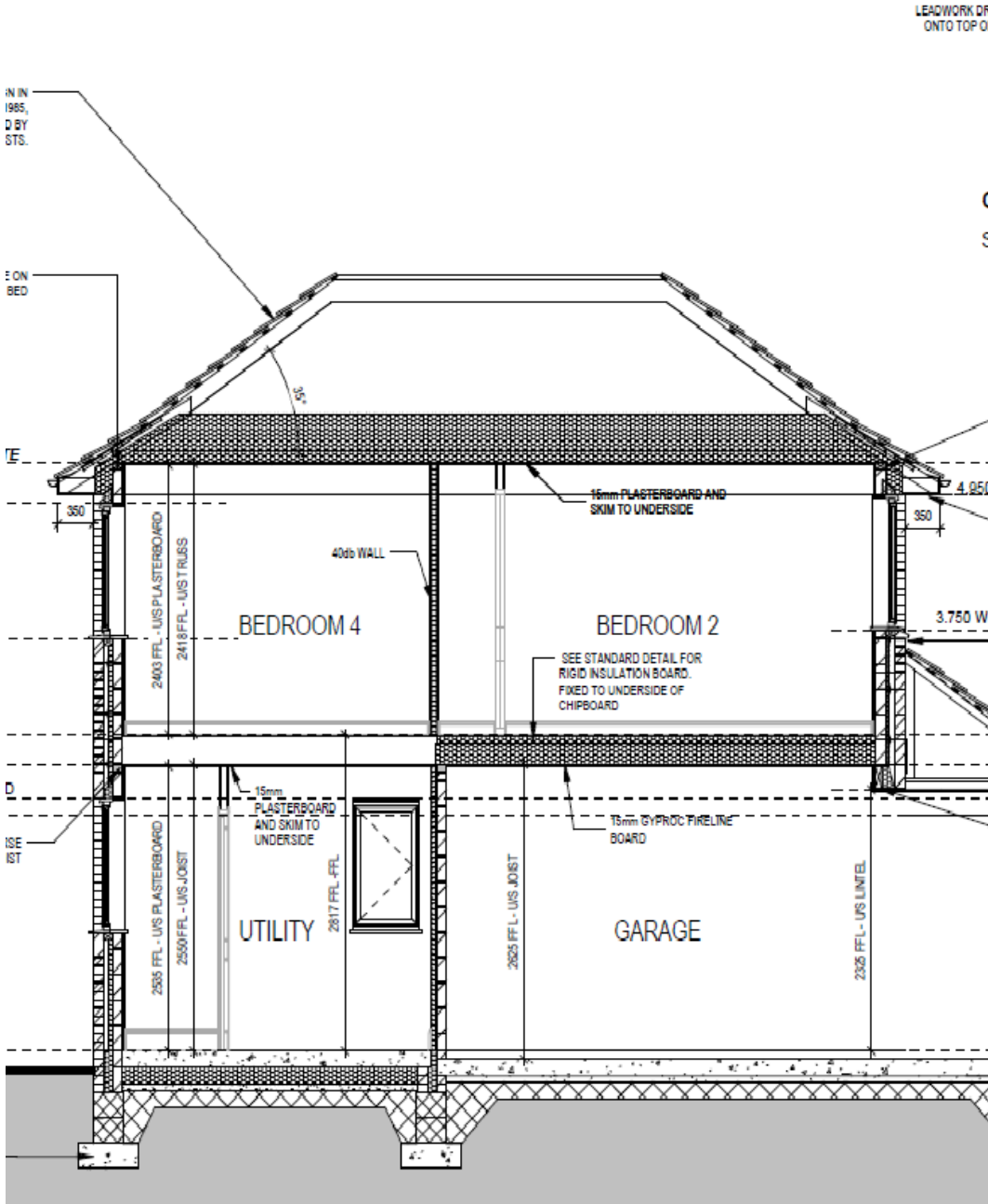
REDROW

Source: REDROW – Supply Chain Sustainability School waste reduction case study webinar

DESIGNING OUT WASTE

We have made some changes to our designs to reduce offcuts or waste generated from complex design features.

- Redesigned the under stairs cupboard and make it more open.
- Simplified skirt/arch lengths used… we used to have large skirt+arch down vs small skirt+arch up.
- Removed internal nibs and reviewed internal inlets/small walls.
- Reduced ground floor ceiling level by 65mm and removed a single course of brickwork, so we can use 2.4m timber instead of 3m (reducing offcuts)



The build challenge may vary, but the principles are transferable!

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Can you think of any good examples in your business?

Or things that went less well? Why??

Or *things you could introduce that would benefit you and your customers?..*

We need to move towards a more Circular model

We want to keep materials and resources in use for as long as possible and avoid waste....

How can you help? And how can we help you?

SUPPLY CHAIN SUSTAINABILITY SCHOOL

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 ✓

   - Available here

Project lifecycle waste web feature

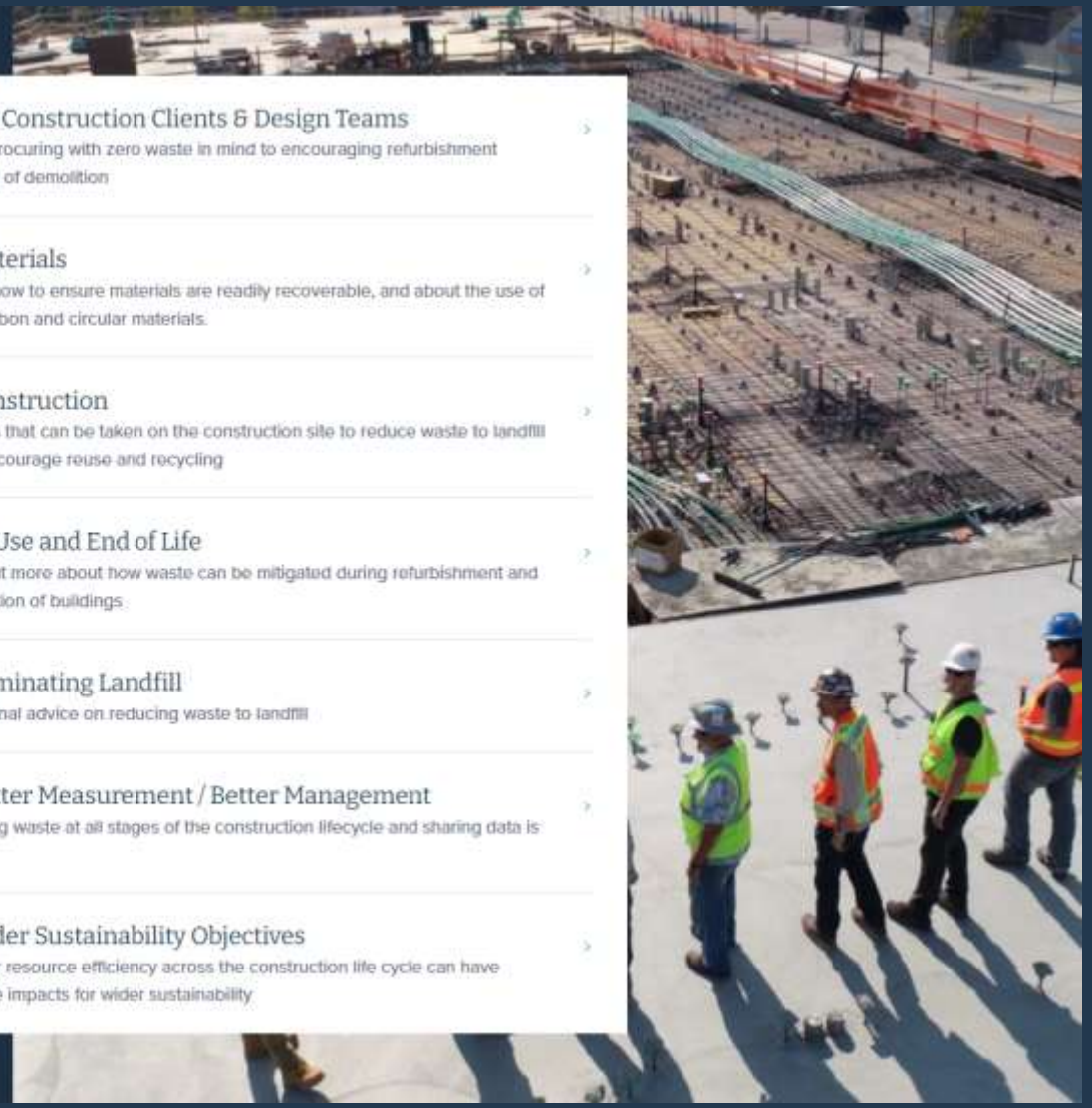
A practical guide to

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.

https://www.supplychainschool.co.uk/partners/groups/waste-group/



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

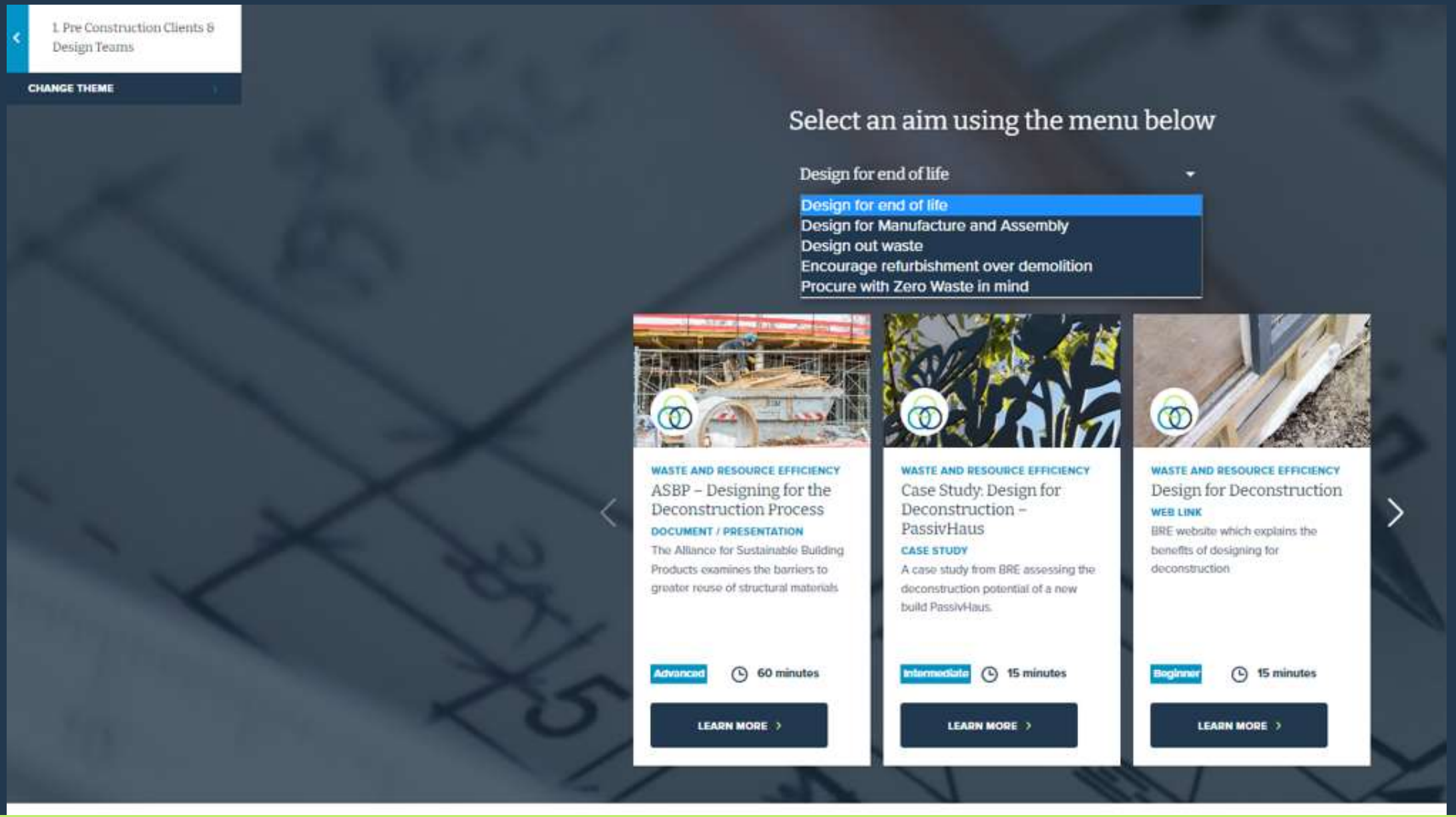
4. In Use and End of Life
Find out more about how waste can be mitigated during refurbishment and demolition of buildings

5. Eliminating Landfill
Additional advice on reducing waste to landfill

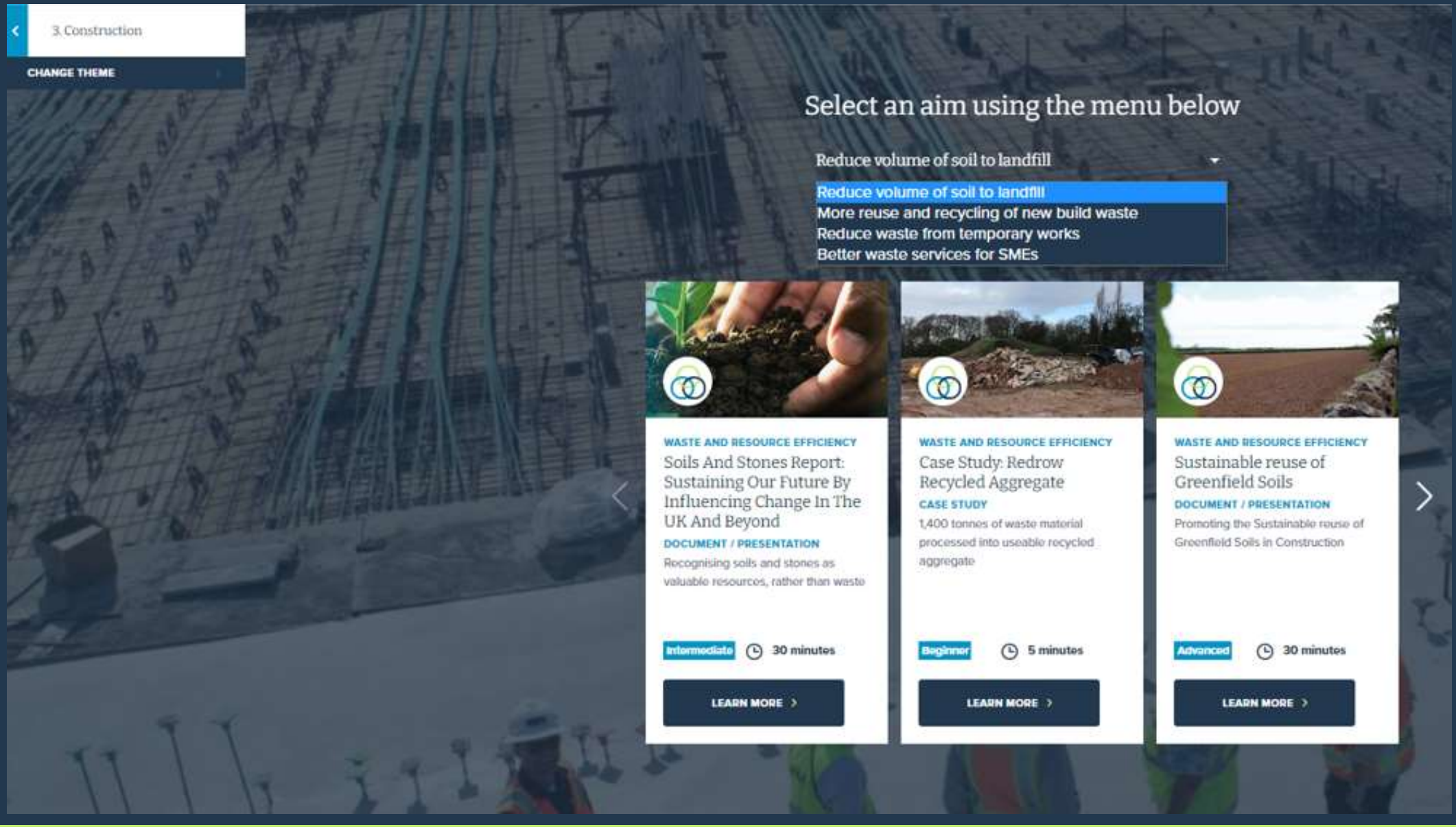
6. Better Measurement / Better Management
Tracking waste at all stages of the construction lifecycle and sharing data is vital

7. Wider Sustainability Objectives
Greater resource efficiency across the construction life cycle can have positive impacts for wider sustainability

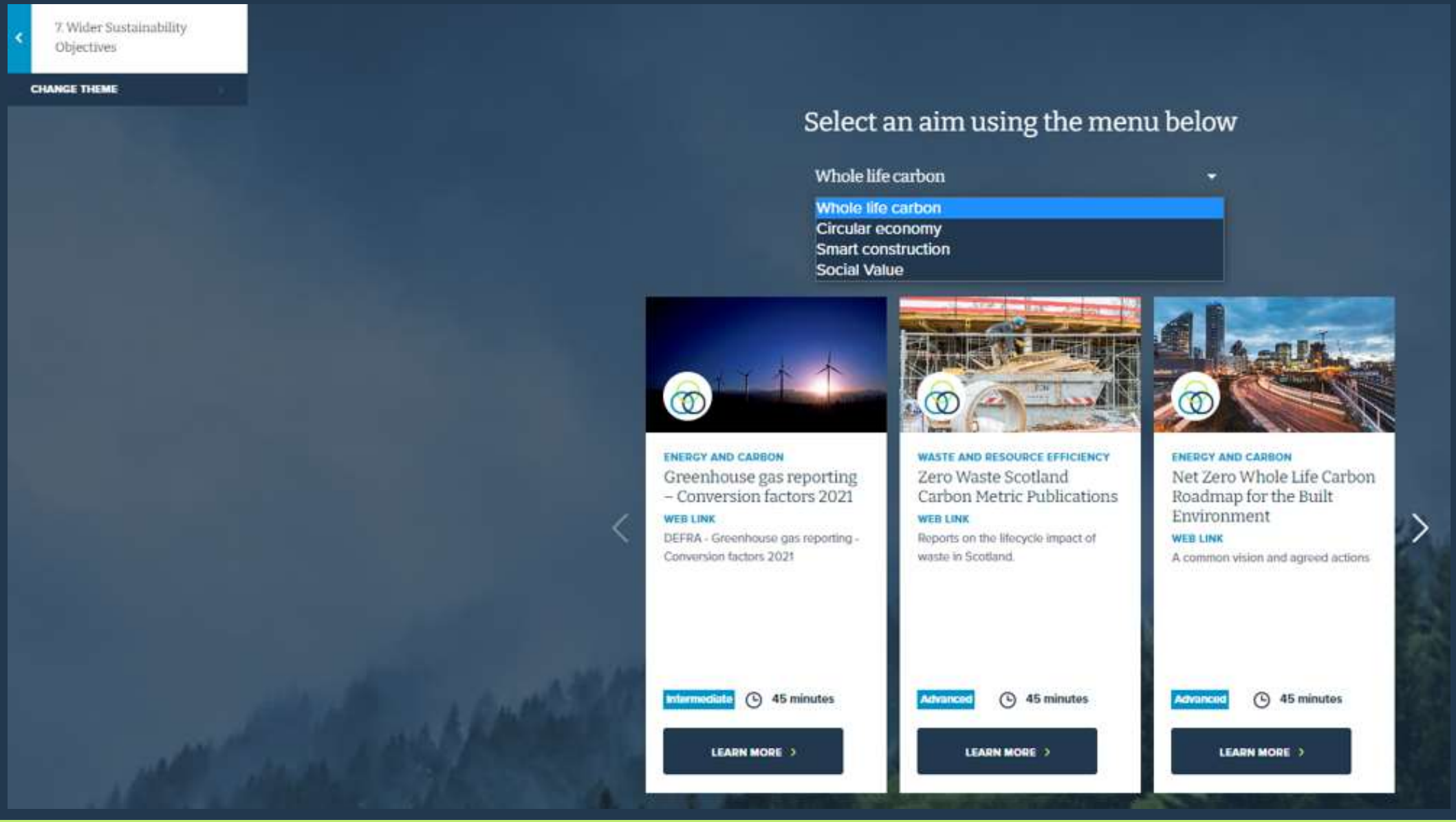
Construction lifecycle waste web feature



Construction lifecycle waste web feature



Construction lifecycle waste web feature



Find it here!

https://www.supplychainschool.co.uk/partners/leadership-groups/waste-group/

SUPPLY CHAIN SUSTAINABILITY SCHOOL

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 ...

Questions & your feedback please

LINK

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