

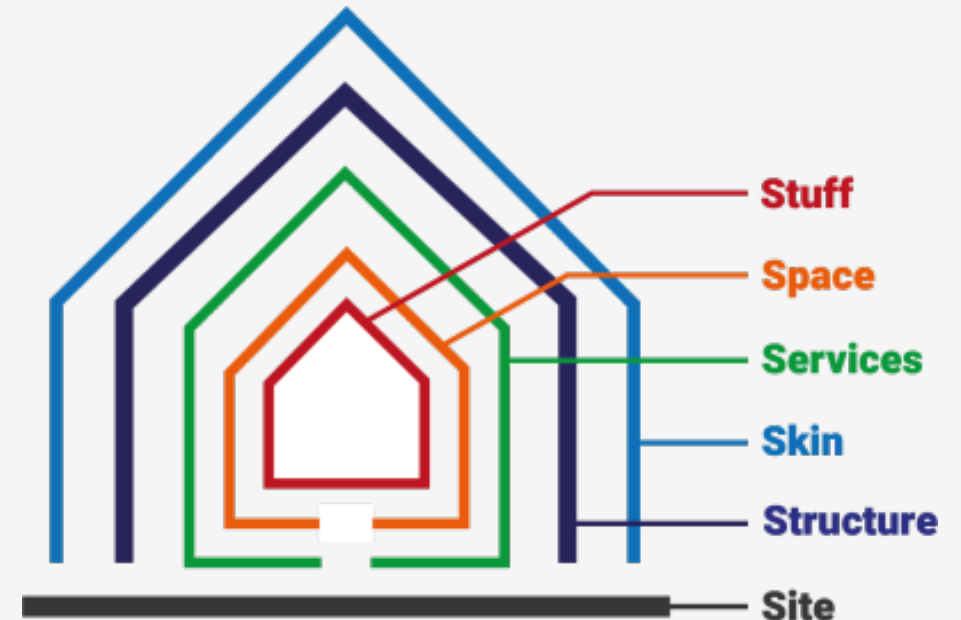
Welcome to the Summit

Katherine Adams, Technical Director
The Alliance for Sustainable Building Products



About today's event

- During today's Summit, hosted by the Alliance for Sustainable Building Products (ASBP) and the Finishes & Interiors Sector (FIS), we'll hear from those from those already active in the materials reuse space, with panel discussions taking a deeper dive into the shearing layers of 'Structure, Skin and Services' and 'Space and Stuff'.
- Inspiring case studies will show what steps the industry can take to increase the uptake of reused materials, looking from structure to flooring, and fittings to furniture.



About today's event

- This event forms part of ReLondon's Circular Economy (CE) Week 2023. Now in its sixth year CE Week has grown in strength and reputation, becoming the event for circular economy professionals, advocates and activists to share knowledge, insights, innovations and success stories.



#CEweek2023

Combating the climate emergency
with the circular economy

SAVE THE DATE

16 – 20 OCT 2023

Brought to you by
ReLondon

The background image shows a panoramic view of the London skyline at sunset, with the Shard skyscraper prominently featured in the center. The sun is low on the horizon, casting a warm glow over the city and the River Thames. Several boats are visible on the water in the foreground.

About Reuse Now

- **The construction industry accounts for over a third of global carbon emissions and produces around 60 million tonnes of construction and demolition waste annually in the UK. Whilst much of this is recovered and recycled, only a small percentage is reused. This creates a significant opportunity to reduce the industry's carbon footprint. Estimates suggest that 22.3 MtCO₂e of GHG emissions could be saved over 9 years by increasing our reuse of construction products.**
- **Re-launched in 2023, ASBP's Reuse Now campaign aims to encourage greater reuse of building materials within the construction industry and accelerate the transition to a more resource efficient, low carbon, circular economy as well encourage growth of low/zero carbon industries and supply chain models.**



Programme

- 15:45 **Welcome** – Katherine Adams, Technical Director, The Alliance for Sustainable Building Products (ASBP)
- 15:50 **Setting the scene, reuse, circular economy, and carbon** – Iain McIlwee, CEO, Finishes and Interiors Sector (FIS)
- 15:55 **Innovate UK – Longer in Use & Reuse Materials and Manufacturing** – Amy Peace, UKRI
- 16:05 **Embedding reuse in procurement policy and tendering** – Gilli Hobbs, Partner, Reusefully
- 16:20 **Examples of reuse in ‘Structure, Skin and Services’ – Panel discussion**
- Peter Kelly, Group Director of Sustainable Operations, ISG
 - Wendy Bishop, Associate, Architype
 - Matthew Morris, Architectural Technologist, Hawkins\Brown
 - Sarah Trahair-Williams, Development Manager, FORE Partnership
- 17:00 **Break**

Programme

17:15 **Five products that demolition contractors love to hate** – Howard Button, National Federation of Demolition Contractors

17:25 **Recertification, warranties and insurance** – Penny Gowler, Head of Sustainability, Elliott Wood

17:45 **Examples of reuse in ‘Space and Stuff’ – Panel discussion**

- Justin Robinson, Founder, Reyooz
- Greg Lavery, Founder, Rype
- Nigel Harvey, CEO, Recolight
- Paul Woolvine, CEO, IOBAC
- Rebecca Marsh, Sales and Marketing Manager, RMF

18:25 **Overview of the Reuse Now campaign and Closing comments** – Debbie Ward, Reuse/Circular Economy and Katherine Adams, Technical Director, The Alliance for Sustainable Building products (ASBP)

18:30 **Drinks and canapes until 19:30**

With thanks to our sponsors and event hosts

'Reuse Now' is supported by gold sponsor and long-standing ASBP patron member Cleveland Steel and Tubes



Bronze sponsors: Excess Materials Exchange, Optima and Reusefully



Optima

reusefully

Venue hosts: ISG Ltd

The logo for ISG Ltd features the letters 'ISG' in a white, bold, sans-serif font, centered within a solid black square.

Who we are



**Not-for-profit, mission led,
sustainability organisation**

**“To accelerate the transformation
to a healthy, low carbon built
environment by championing the
use of demonstrably sustainable
building products”**

What we do

Share learning through events, lead on research projects, create best practice guidance, foster collaboration, influence policy and more.



Health and
well-being



Resource
efficiency



Whole life
carbon



Ethics and
transparency



Technical
performance



Social
value

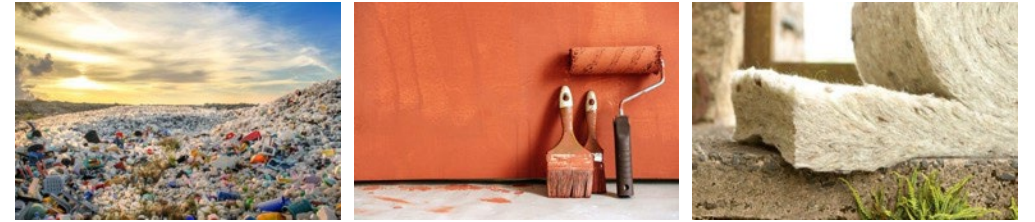


Participate in our research projects



DISRUPT, IMPACTT, Home Grown Homes, E-TRACS

Join one of our specialist working groups



Reducing plastics, healthy paints, natural fibre insulation

Join over network of 150 members and partners

Access FREE resources on our website

Register for an event



Get involved with the ASBP!

Enter our awards



Thank you

Katherine Adams

Technical Director

The Alliance for Sustainable Building Products

www.asbp.org.uk

katherine@asbp.org.uk



11% of UK construction spend is on fit-out

Buildings may have 30 fit-outs during their lifecycle

FIS

Representing the
finishes & interior sector

Ongoing vetting of
contractors

Setting higher
standards

Driving quality
through a focus on

PRODUCT

PROCESS

PEOPLE

www.thefis.org

Encouraging re-use in fit-out

300 tonnes waste from
fit out per day

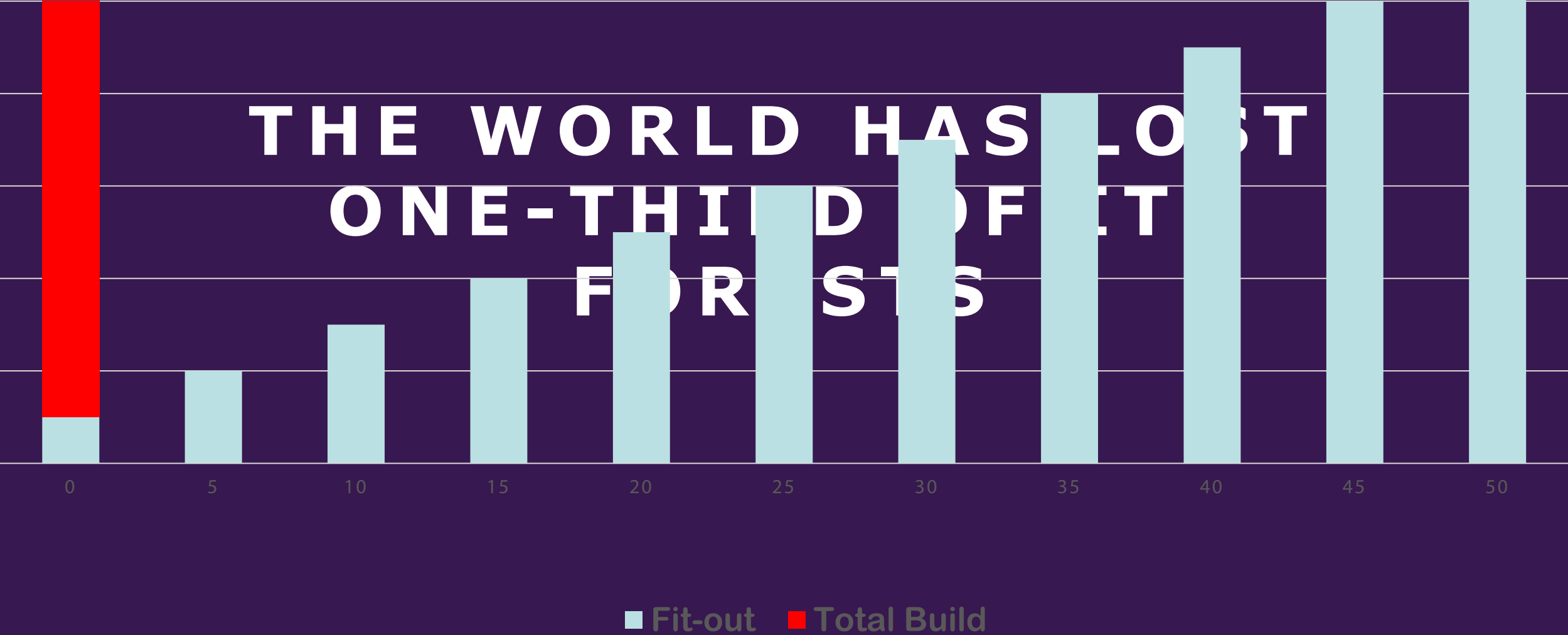


Buildings may have 30 fit-outs during their lifecycle



50 year Construction Embodied Carbon

THE WORLD HAS LOST
ONE-THIRD OF FIT
OUTS

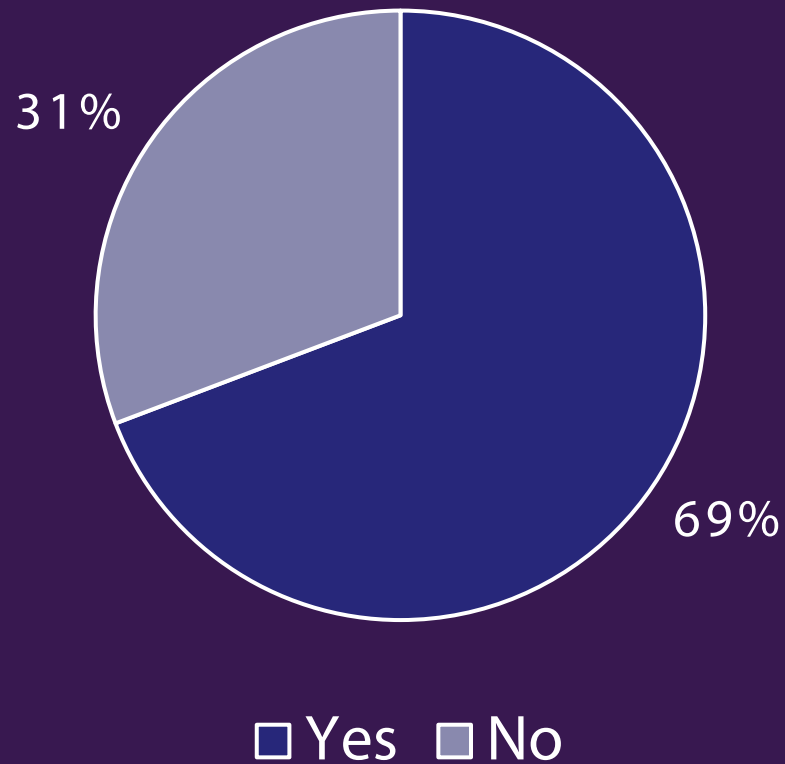


A panoramic view of the London skyline at night. The Shard is the central focus, illuminated with white and red lights. To its left is the London Eye, glowing in pink. The River Thames flows through the city, with the London Bridge and Tower Bridge visible. The city is filled with numerous lit-up buildings, creating a vibrant urban scene under a dark sky with scattered clouds.

The age of cheap, abundant raw materials is over – we can't afford to waste this

The importance of reuse

Have you ever re-used materials in a fit-out?



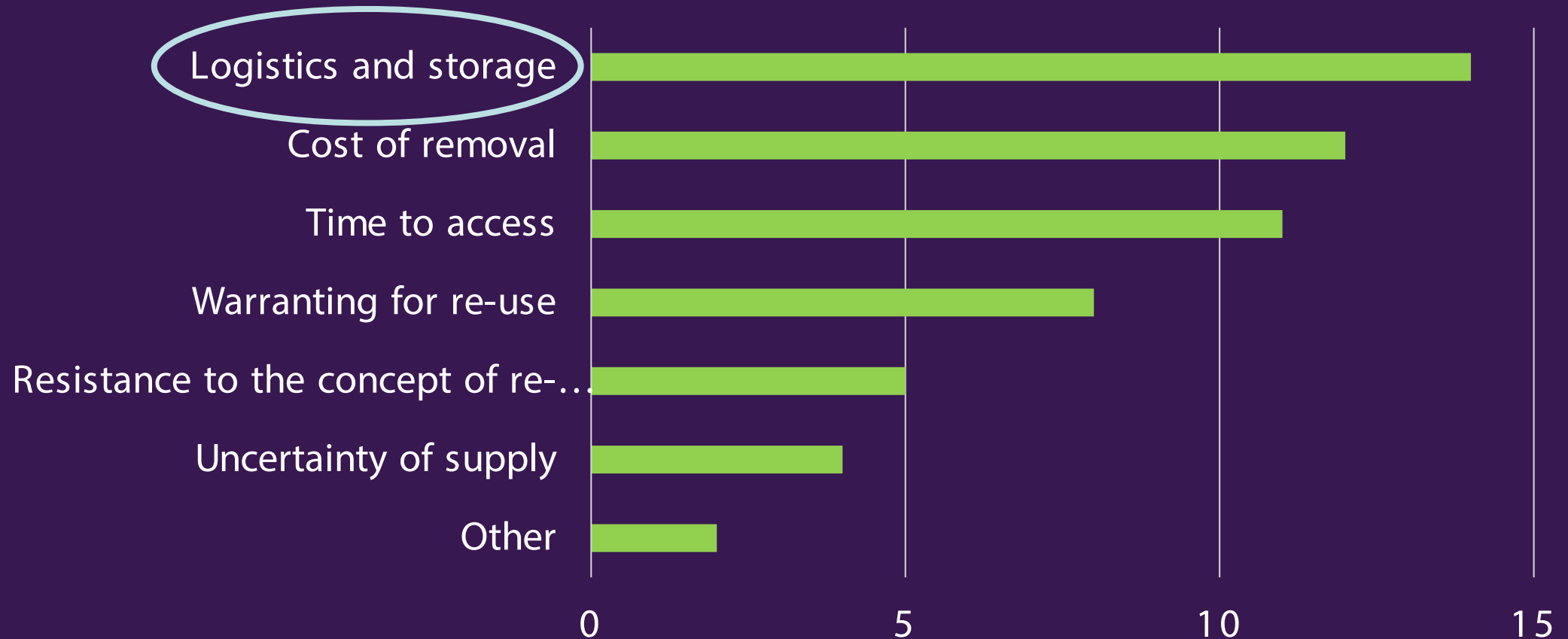
Would you consider including re-used products in your fit-out project (if you could source them)?

100% responded YES

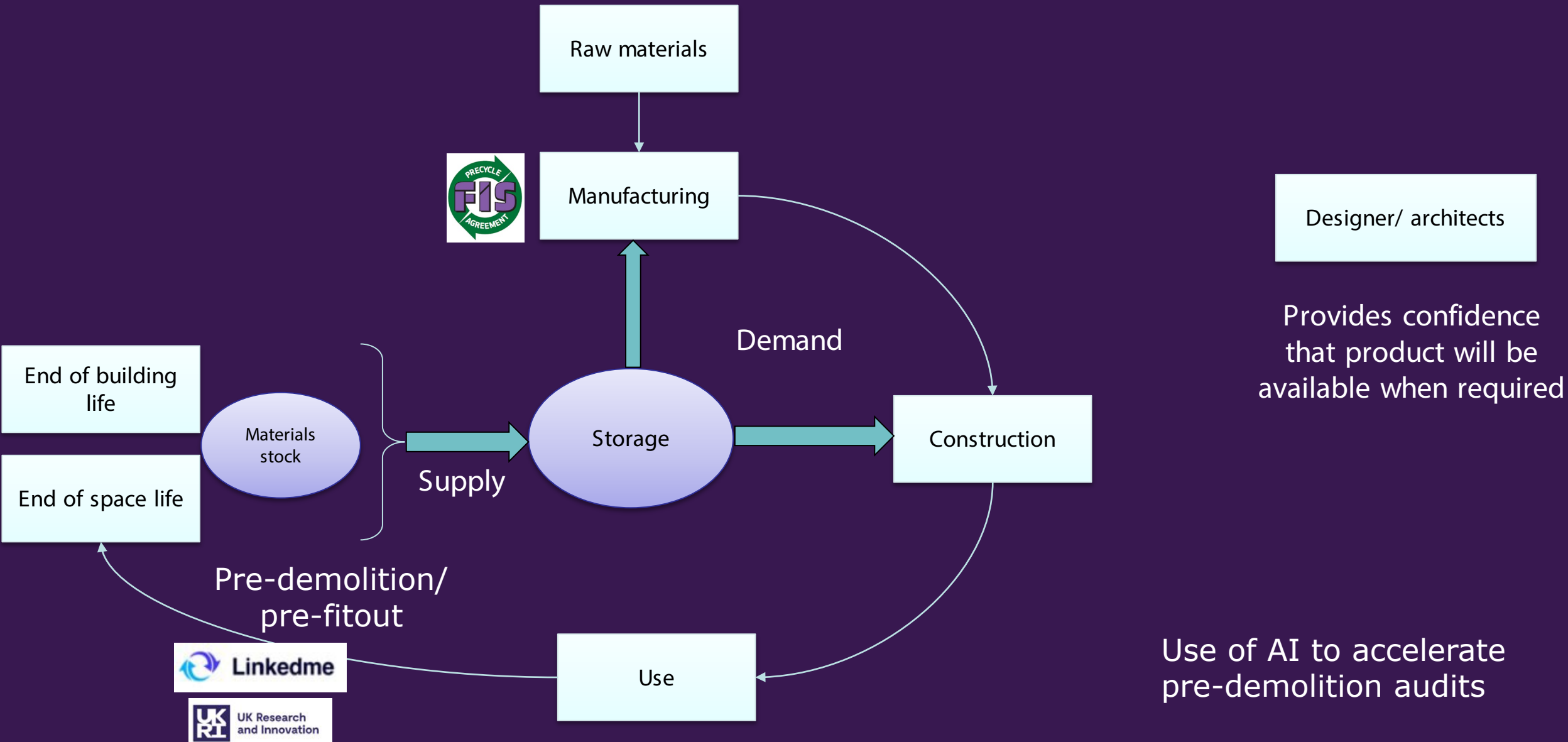
The main driver is the reduction in kgCO₂eq

The challenges

What is normally the biggest barrier to re-use?



Reuse Initiative



Thank you

Contact us if you want to know more about reuse:

Iain: iainmcilwee@thefis.org

Flavie: flavielowres@thefis.org

PRODUCT

PROCESS

PEOPLE

Innovate UK

Longer in Use & Reuse

Materials and

Manufacturing

ASBP ReUse Summit – 18th October 2023

Amy Peace

Innovation Lead – Circular Economy, Innovate UK

UK Research & Innovation

Innovate UK



Arts and
Humanities
Research Council



Biotechnology and
Biological Sciences
Research Council



Economic
and Social
Research Council



Engineering and
Physical Sciences
Research Council



Innovate
UK



Medical
Research
Council



Natural
Environment
Research Council



Research
England



Science and
Technology
Facilities Council

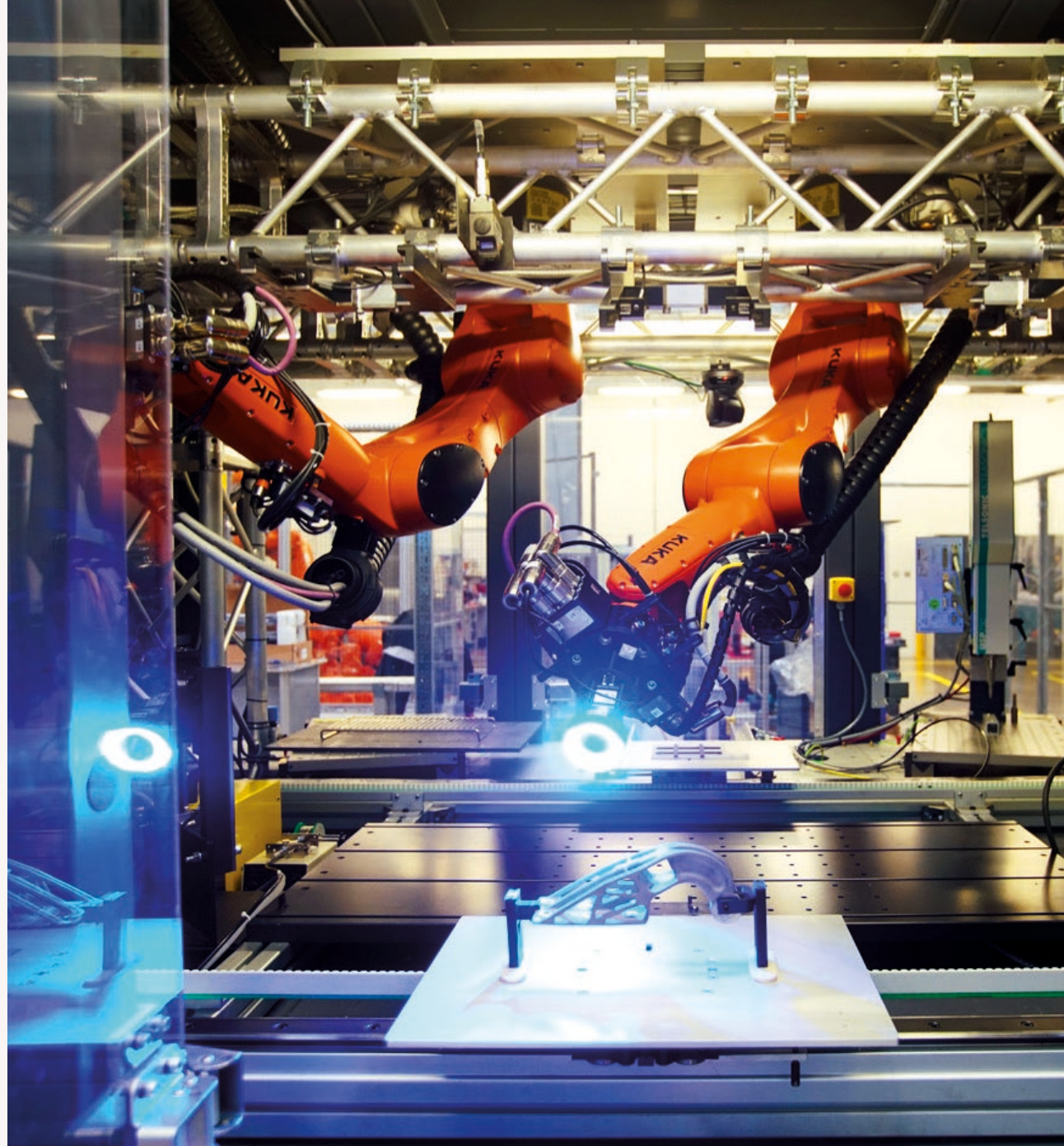
Innovation

The lifeblood of business

- Innovation delivers new or improved products, processes & services
- It is key to UK growth and prosperity

Innovate UK

- We are the UK's innovation agency
- We support business-led innovation in all sectors, technologies and UK regions
- A key delivery body of the Government's Innovation Strategy

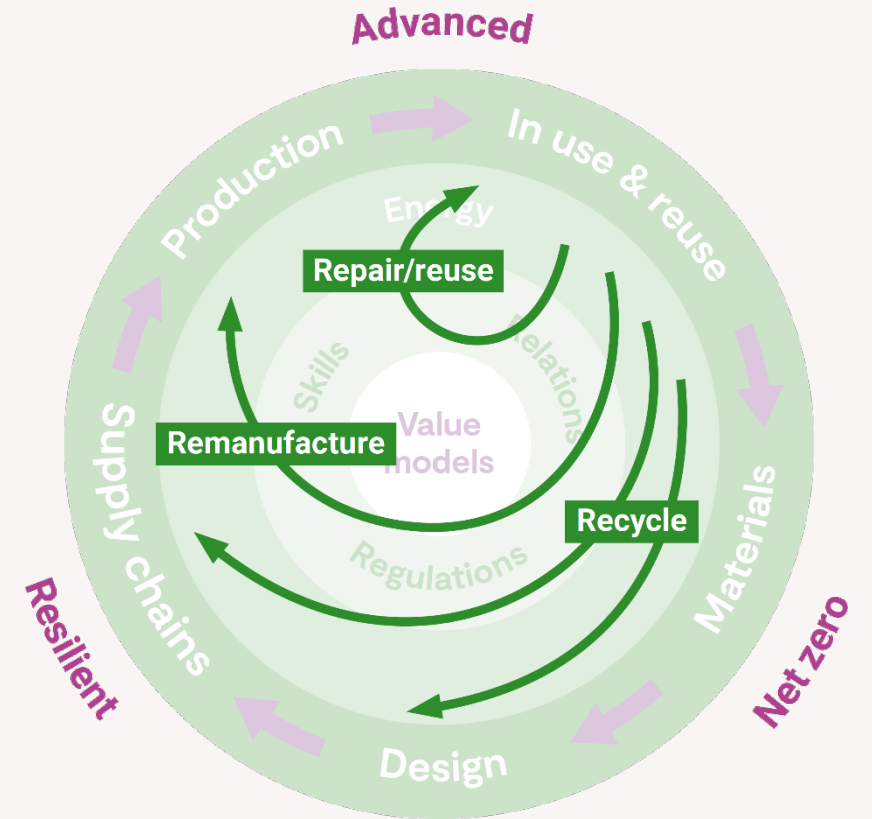


Reimagining materials and manufacturing together

Circularity

Core areas
future economy materials
smart design
resilient supply chains
world-class production
longer in use & re-use

Enabling areas
clean energy
proactive regulations
future skills
networked relations
evolving value models



Longer in Use and Re-Use

What's happening?...

What do we mean by... Longer In-Use and ReUse

| | | | |
|---|-----------|----------------------|--|
| Smarter product use and manufacture | R0 | Refuse | Make product redundant by abandoning its function or by offering the same function with a radically different product |
| | R1 | Rethink | Make product use more intensive (eg through sharing products or by putting multi-functional products on market) |
| | R2 | Reduce | Increase efficiency in product manufacture or use by consuming fewer natural resources |
| Extend lifespan of product and its parts | R3 | Re-use | Re-use by <i>another consumer</i> of discarded product which is still in good condition and <i>fulfils its original function</i> |
| | R4 | Repair | Repair and maintenance of defective product so it can be used with its original function |
| | R5 | Refurbish | Restore an old product and bring it up to date |
| | R6 | Remanufacture | Use parts of discarded product in a new product with the same function |
| | R7 | Repurpose | Use discarded products or its part in a new product with a different function |
| Useful application of materials | R9 | Recycle | Process materials to obtain the same (high grade) or lower (low grade) quality |
| | R9 | Recovery | Incineration of materials with energy recovery |

Longer In-Use and ReUse ‘Sprint’

The aim of these sprints is to build a community of engaged people around a particular topic to debate barriers, challenges and identify key opportunities. Linked to the Sprints will be Innovation Exchanges, where specific challenges are shared with the aim of finding novel solutions.

What are your challenges and priorities?

Survey available at: bit.ly/LURU-Oct23

Or scan the QR code here



Thank You

X, Mastodon, Bluesky, Spoutible etc... @amypeace



reusefully

Embedding reuse in procurement policy and tendering
Reuse Summit
18th October 2023

Gilli Hobbs
Reusefully Ltd

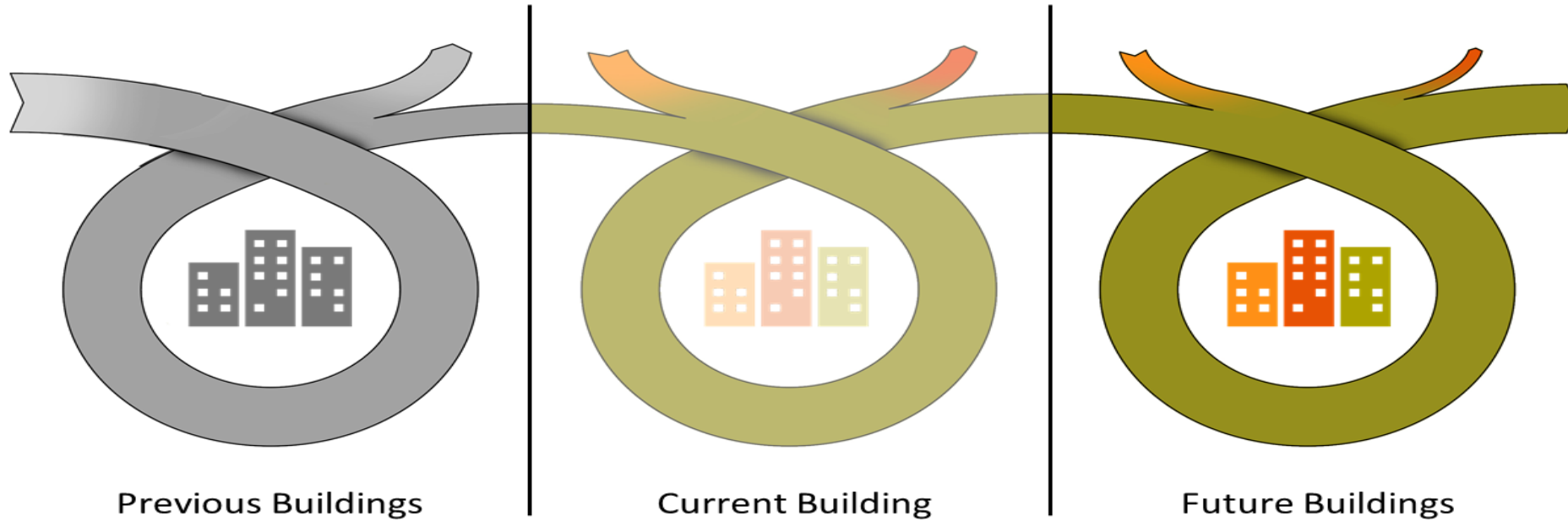
About Reusefully

reusefully

- ▶ Reusefully is a partnership created to provide **expert circular economy advice and support within the built environment.**
- ▶ We enable the **practical implementation of circular economy thinking** throughout the construction supply chain and provide evidence-based support and advice for related policy development. We collaborate and work with others who genuinely share this objective and value our commitment to delivering effective & impactful project outcomes.
- ▶ We address **material and resource efficiency, embodied carbon and net zero, design for deconstruction, waste prevention and waste management, end markets, reuse and recycled content.** Collectively, Reusefully brings together over 50 years of experience, working across multiple parts of the value chain, from small practical projects to large scale R&D, for a wide variety of clients. **www.reusefully.co.uk**

Life cycle approach to Reuse

reusefully



Existing assets are **Donors** of building product and materials

Construction projects can be **Recipients**— reducing carbon, cost and preserving heritage

Designing for adaptability and **future reuse** creates longer lived assets & future bank of resources

Procurement Steps

- ▶ Policy / commitment
- ▶ Market Research
- ▶ Options analysis
- ▶ Specification/requirements
- ▶ Price vs Quality
- ▶ Evaluation and award
- ▶ Contract management & performance

Brighton & Hove Circular Economy Routemap

A sustainable green growth strategy for the city

2020-2035

Economy, Environment
Supporting economic growth and
an attractive, connected and vibrant
residents, businesses and visitors



Getting started

Sustainable procurement policy

- ▶ Scope – which activities
- ▶ Targets – overarching across organisation
- ▶ Themes – carbon, circular economy etc..

Market Research and Options

A market study (*market analysis, market assessment, market sounding, market research*)

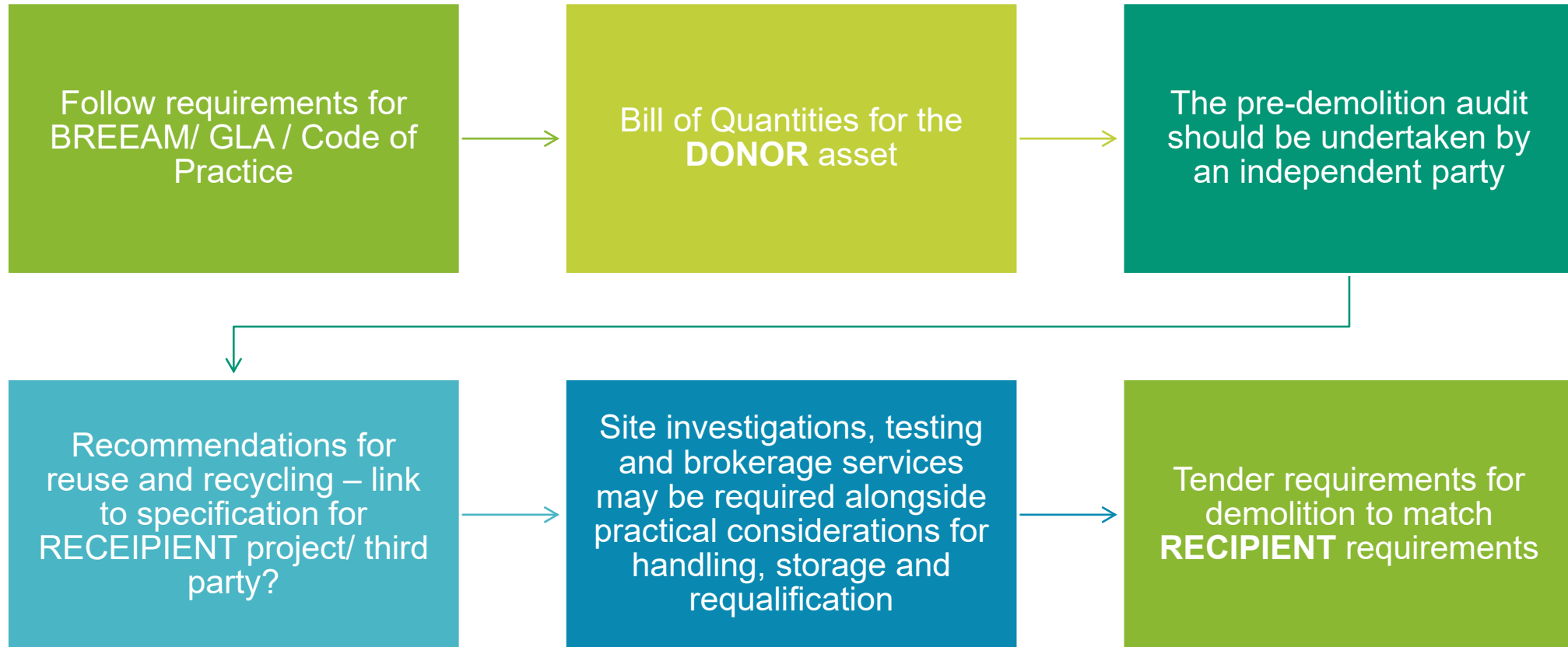
Options analysis re Route to Market / Which procedure (framework/open tender?)

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1. *‘ensure that 75% of external, priority area, public sector spend will be on circular products and services’*
2. *‘by 2030, specify in project briefs that at least 60% of all materials used in a new development are recoverable at the end of life’*

1. Desk research – case studies,
2. Assess typical projects/ activities for opportunities
3. Pre-qualification questions, supplier open days
4. Willingness to collaborate/ shared objectives
5. Pre-demolition audit results?

What's available for reuse? Pre-demolition audit



Matchmaking and target setting

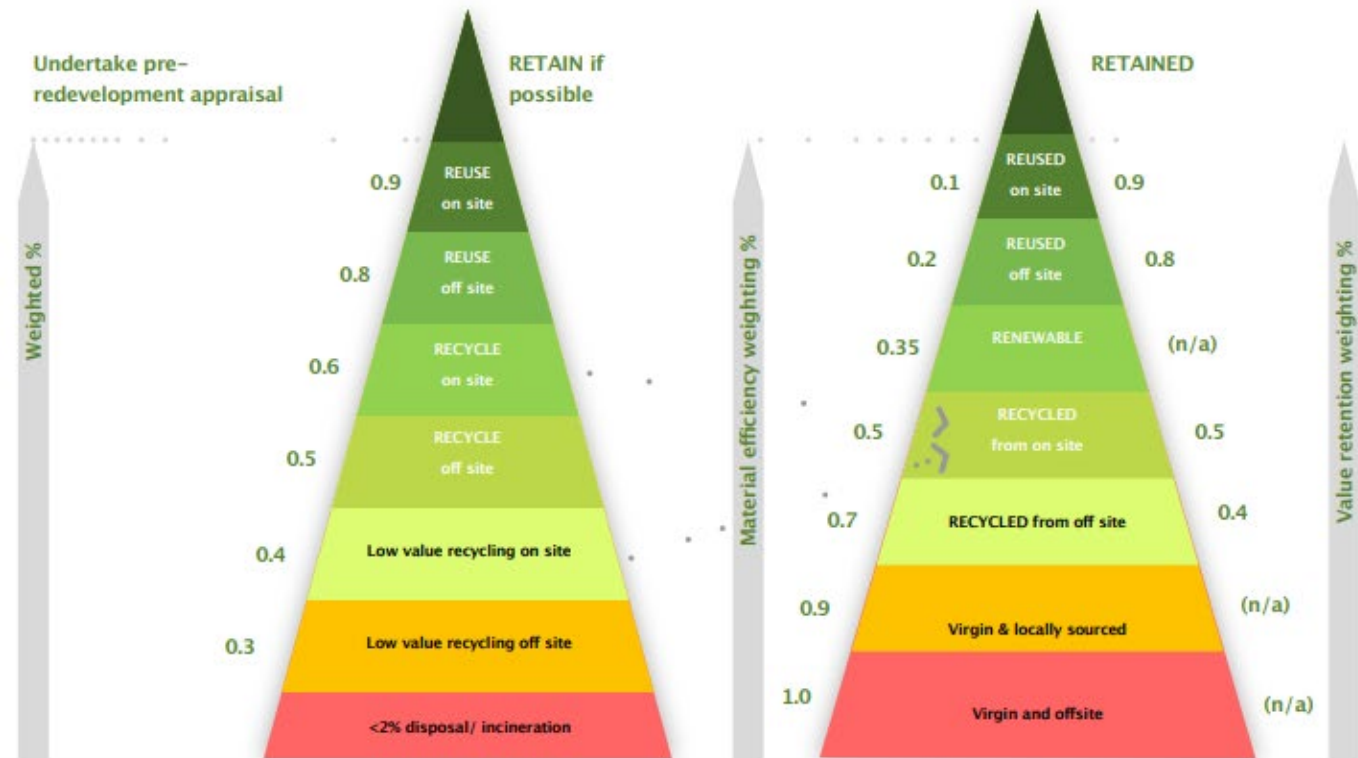
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Value retention approach

Materials hierarchy

DONOR (DEMOLITION)
Material value retention target

RECIPIENT (CONSTRUCTION)
Material efficiency indicator
Value retention target



Specifically, we want...

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Specification: ‘statement of needs or requirements’. Detailed description of the goods or services a supplier is expected to supply during the lifetime of the contract. It is also a record against which suppliers can be measured and is legally binding

- ▶ **Functional specification** describes the functions that the product or service must fulfil for the user, in other words: what should the product do?
 - ▶ Can support circular business models such as service vs. product
- ▶ **Technical specifications** define the characteristics of the supplies, service (services) or necessary for the performance of work on the construction
 - ▶ Tools and standards/ KPIs can support technical specifications e.g. Achieve BREEAM Excellent, include 20% reused content etc..
 - ▶ Targets and specific opportunities identified from **DONOR** and/or **RECIPIENT** side

Environmental requirements, KPIs and targets

| THEME | CATEGORY | REFERENCE | KEY REQUIREMENTS, PERFORMANCE INDICATORS AND TARGETS | | | | | | KPI UNIT / REQUIREMENT | | | | | |
|---------------|------------------------------|-----------|---|--------|------|---------|-----|-------------|------------------------|-----|-----|-----|-----|-------|
| | | | COMM | RETAIL | RESI | P-REALM | OPS | REQUIREMENT | | | | | | |
| ENVIRONMENTAL | CIRCULAR ECONOMY & MATERIALS | CE01 | Target BREEAM WST01 pre-demolition audit and use the audit to explore where materials can be used onsite or elsewhere | | | | | | | | | | | |
| | | CE02 | Develop a circular economy strategy. Prioritise re-use of existing structure/materials and follow BL Circular Economy principles | | | | | | | | | | | |
| | | CE03 | Develop a materials passport with End of Life (EoL) reuse scenarios for all materials and include in Whole Life Carbon Report (section D) | | | | | | | | | | | |
| | | CE04 | Design and specify for disassembly and reuse, align with BREEAM WST06 | | | | | | | | | | | |
| | | CE05 | Compliance with BL Materials Schedule - prioritising materials with an Environment Product Declaration (EPD) and/or are extracted or manufactured within the UK or EU | | | | | | % | 100 | 100 | 100 | 100 | 100 |
| | | CE06 | Achieve one of the following: Proportion of new materials (by weight/volume) designed and specified for disassembly and reuse with a take back scheme; or | | | | | | % | ≥30 | TBC | ≥30 | TBC | TBC |
| | | CE07 | Design and specification of one construction package to be fully deconstructed and with a take back scheme/EoL scenario | | | | | | report | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | CE08 | Proportion of reused materials or with recycled content vs new materials | | | | | | % value | 50 | TBC | 50 | TBC | TBC |
| | | CE09 | Unwanted resources* diverted from landfill and incineration | | | | | | % tonnes | 100 | 100 | 100 | 100 | ≥80 |
| | | CE10 | Quantity of unwanted resources* recycled via upcycling | | | | | | % tonnes | 90 | 90 | 90 | 90 | - |
| | | CE11 | Quantity of unwanted resources* recycled via downcycling | | | | | | % tonnes | 10 | 10 | 10 | 10 | - |
| | | CE12 | Report quantity of unwanted resources* re-used, composted or recycled | | | | | | % tonnes | - | - | - | - | 80/70 |

*Unwanted resources refers to waste

Source: British Land

Willingness to pay

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Price vs Quality

- Enables decisions to be made not just on cost
- Quality weighting based upon - What price am I willing to pay for the minimum acceptable quality solution, and what price am I willing to pay for a high-quality solution?
- Environmental cost added to price (Environmental Cost Indicator NL)

Evaluation and award

- Relevant and proportionate environmental selection/award criteria
- If part of requirements – have these been met. If not > non-compliant bid > rejected?
- If part of quality criteria – is it clear how these will be assessed/ weighted?



Q. Did we succeed?

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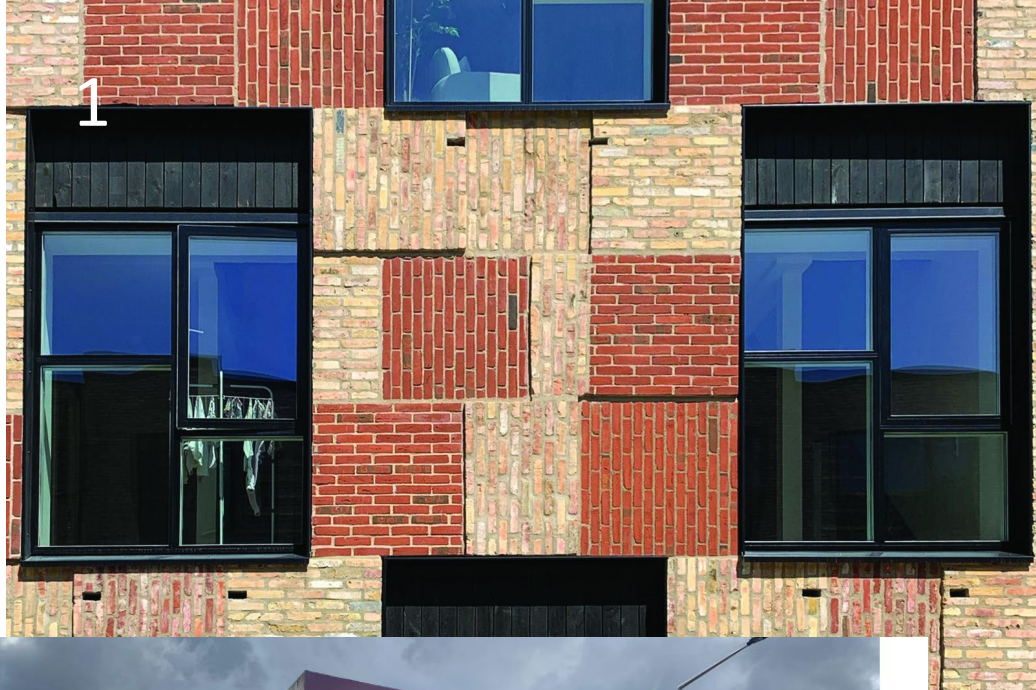
Contract management & performance

- ▶ Contract Management is the process designed to ensure that all parties to a contract meet their obligations and that the intended outcomes will be delivered and associated benefits are realised.
- ▶ The responses of the winning bid incorporated into the contract
- ▶ Monitor and measure vs. what was intended
- ▶ Lessons learnt – what worked and what didn't?
- ▶ Feed back into procurement policy > market research > specification > evaluation > contract preparation

A. Somewhat (hopefully)



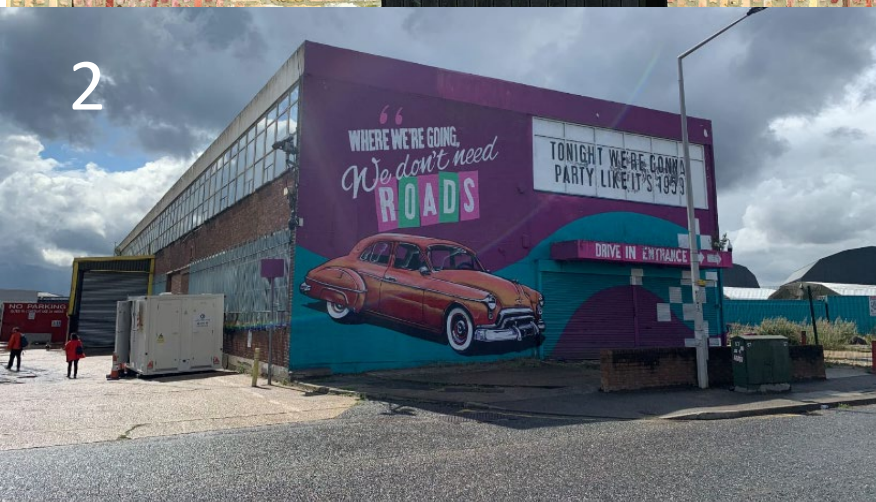
Superlocal project, Heerlen



Bricks - examples

reusefully

1. Lendager – reuse of bricks as panels (Resource Rows)
2. F Block – Meridian Water (available on www.enfield.excessmaterialsexchange.com)
3. BRE Environmental building – 80K reclaimed bricks



Conclusions

- ▶ Needs collaboration across multiple aspects - client, design, engineering, costing, demolition, construction
- ▶ Lots of unknowns as disrupting 'business as usual'
- ▶ Multiple benefits can be derived – cost, carbon, societal
- ▶ Good examples and guidance to learn from, including:
 - ▶ Cityloops: Circular procurement resources
 - ▶ Sheffield University online tool: Regenerate
 - ▶ GLA: CE statement requirements and guidance
 - ▶ ARUP: Circular building toolkit
 - ▶ UKGBC: Guidance on application of circular economy principles at project brief stage
 - ▶ FCRBE: Facilitating the circulation of reclaimed building elements - Reuse toolkit
 - ▶ ASBP: Steel Reuse; Reuse Campaign

reusefully



Thanks for listening 😊

gilli@reusefully.co.uk



Peter Kelly, ISG

The ISG logo consists of the letters 'ISG' in a white, bold, sans-serif font, centered within a solid black square.

ISG







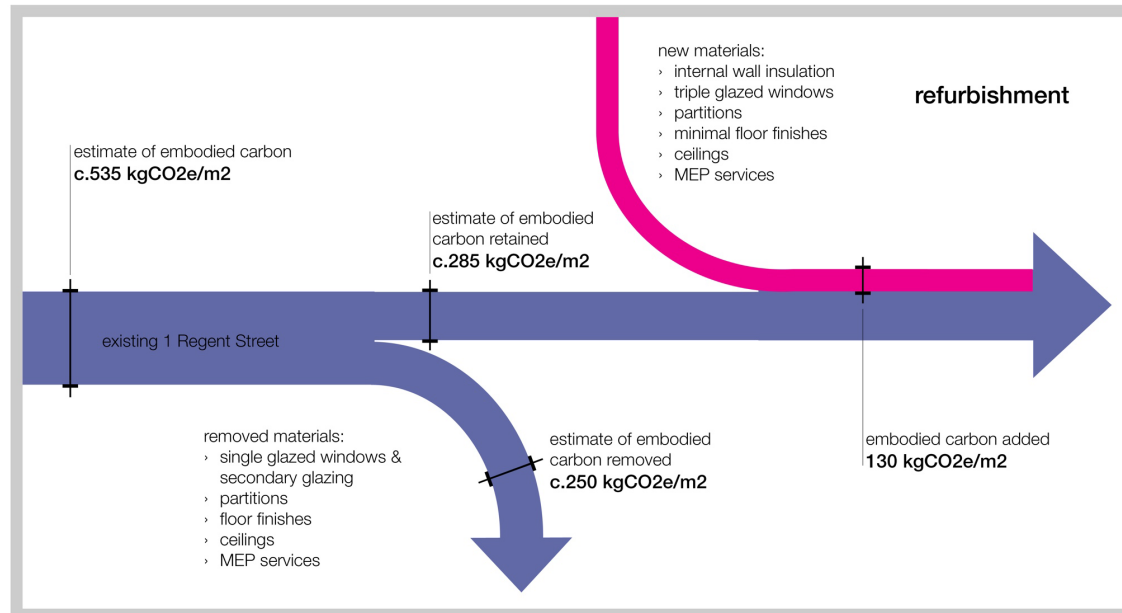
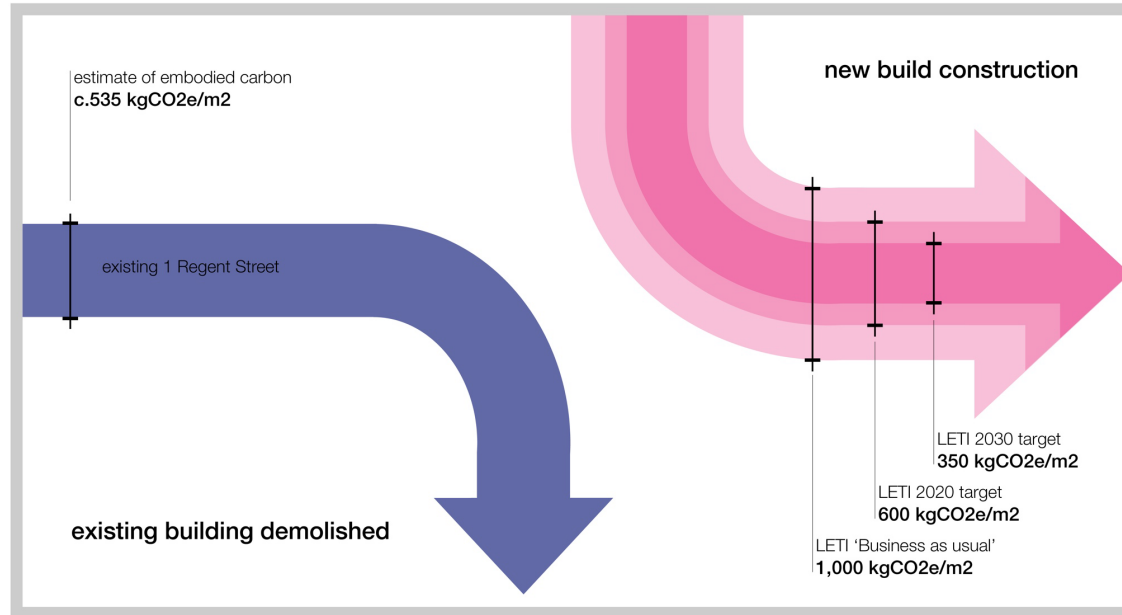




Wendy Bishop, Architype

The logo for Architype, featuring the word "ARCHITYPE" in a bold, black, sans-serif typeface. The letters are closely spaced and have a slightly irregular, hand-drawn quality. The 'A' is particularly prominent, with a thick vertical stroke. The 'R' has a curved top, and the 'H' is composed of two vertical bars connected at the top. The 'I' is a simple vertical bar. The 'Y' has a thick vertical stem and a horizontal bar that is slightly offset. The 'P' has a thick vertical stem and a curved bottom. The 'E' is a simple, blocky shape. The entire logo is centered on a white background.

ARCHITYPE



Note: Embodied carbon figures are for building life cycle Stages A1-A5. Figures for 1 Regent Street and LETI targets include substructure, superstructure, internal finishes and MEP. Figures for 1 Regent Street are from Stage 5 design (May 22 update).



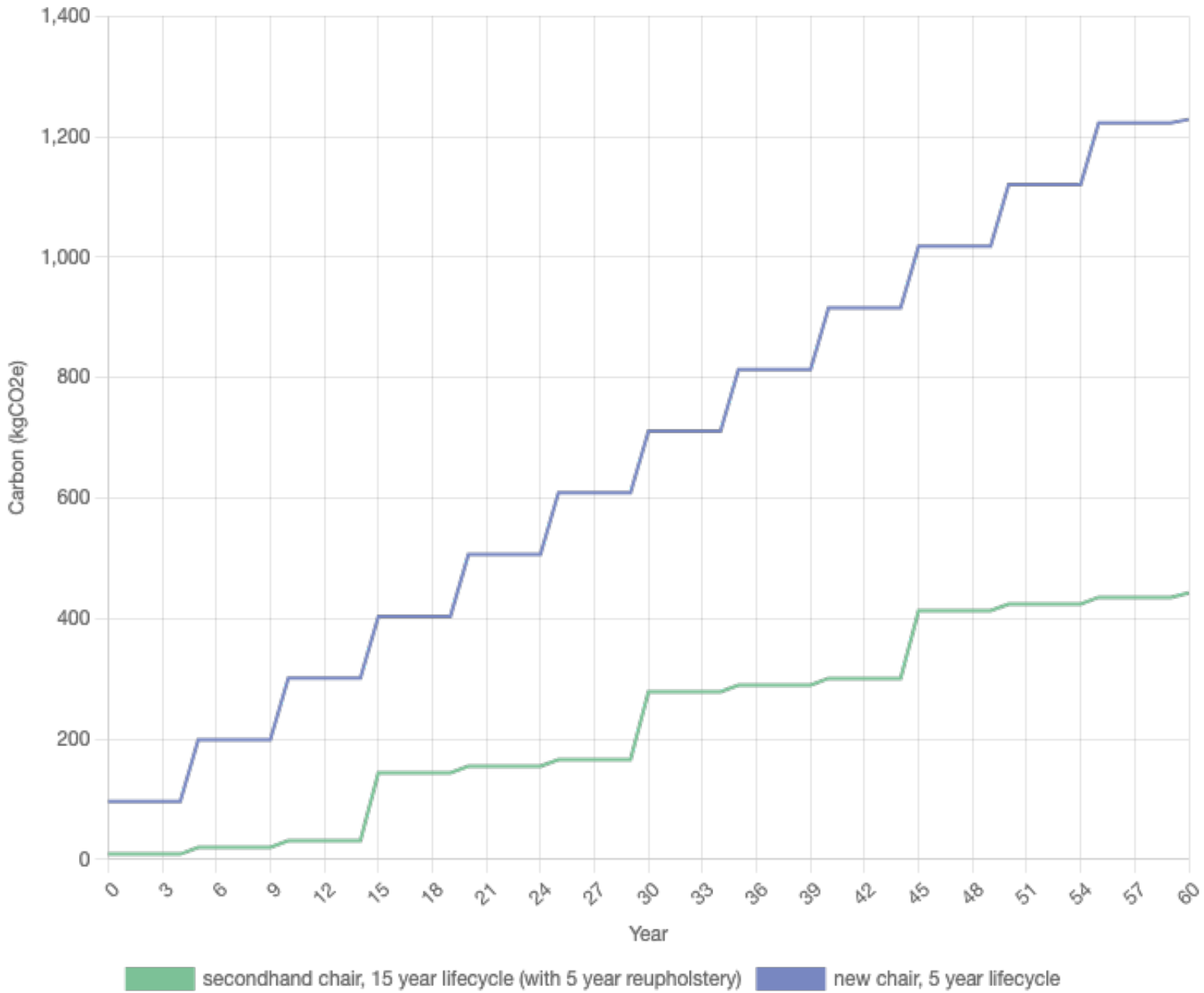


CAMBRIDGE INSTITUTE FOR
SUSTAINABILITY LEADERSHIP









ASBP Reuse Summit

18.10.23

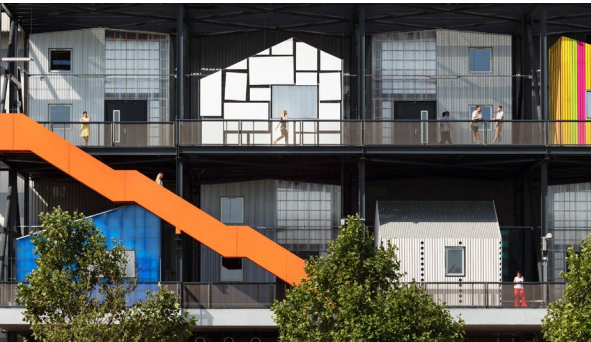
Introduction

Matthew Morris



Architectural Technologist
Hawkins\Brown

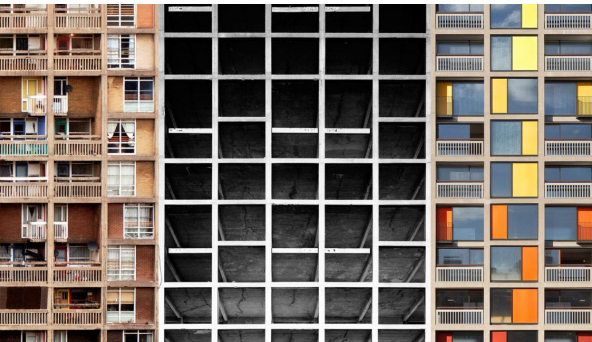
Introduction Hawkins\Brown



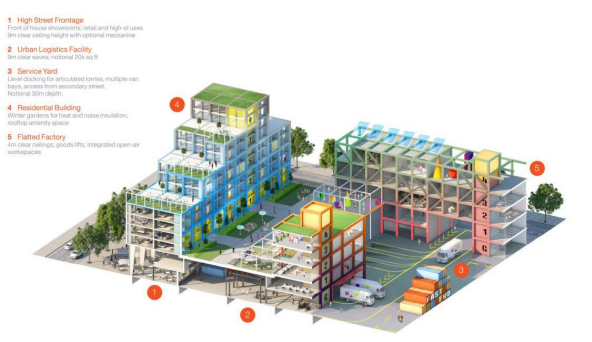
- Specialist Design
- Urban Design
- Interior Design
- Research



- Higher Education
- Workplace
- Residential



- Infrastructure
- Cultural & Civic
- Masterplanning



SDS 2022/ 2023



BIM

Development, standard templates, families, tools, training, certifications and support

Nathaniel, Mauro, Ajay, Ade, Alex, Hamish, Andrew plus Anushka and Mariusz who start in Feb

Technical

Development, best practice, project support, standard resources, processes, checklists, specifications and CDM

Roland, (John, John) David, (+1) Ciaran, Ben, Matthew, Candela

Project delivery

DRM, scopes, fees, programmes, drawing lists, Ts and Cs, legal

Nigel, Erik, Melissa, Geanina, Ina, Catalina

DfMA

Project workshops, MMC advice, training

Nigel, Michael, Candela

Research and Social Value

Michael R (Darryl, Hazel, Holly)

Sustainability

Services, project support, data collection, ISO 14001, analysis tools, H1B:ERT, VERT, comms, bids

Louisa, Shikha, Dewi, (Raheela), Julia, (Dilek), Nial

Digital design

SaaS, computational design, efficiency apps, tools (Briefing, PMV, H1B:ERT, VERT)

Jack, Ben

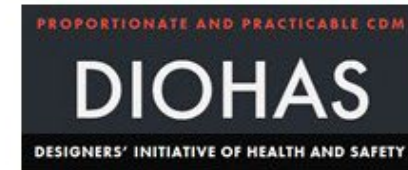
Visualisation

CGIs and animation, Unreal and V Ray techniques

(Tom) Paz, Krish

SDS

External engagement



Case study: Circular Economy

TEDI, Canada Water



Case study
1 Golden Lane



Case study

55 Great Suffolk Street



Thank you

London\
Edinburgh\
Manchester\
Los Angeles\

hawkinsbrown.com

Sarah Trahair-Williams



TBC.LONDON













Difficult Demolition waste.

HOWARD BUTTON HON FIDE

Good old days Reclaimed materials being sold at auction



Reclaimed timber



Prepared and sawn reclaimed timber.



Top five difficult Demolition wastes

- ▶ 1. Asbestos waste
- ▶ 2 Polystyrene POPs
- ▶ 3. Composite materials
- ▶ 4. Hazardous wood waste.
- ▶ 5. MMC Modern methods of construction.

Asbestos a known carcinogenic material

- ▶ HSE legislation required ALL asbestos waste products to be landfilled from 1999
- ▶ All asbestos waste is deposited within a managed landfill facility in a single non-reactive cell and must not be mixed with other wastes.
- ▶ This can create issues for demolition contractors particularly when removing fire damaged waste containing asbestos cement.
- ▶ Whilst problematic Demolition contracts are well versed in the management of this hazardous waste

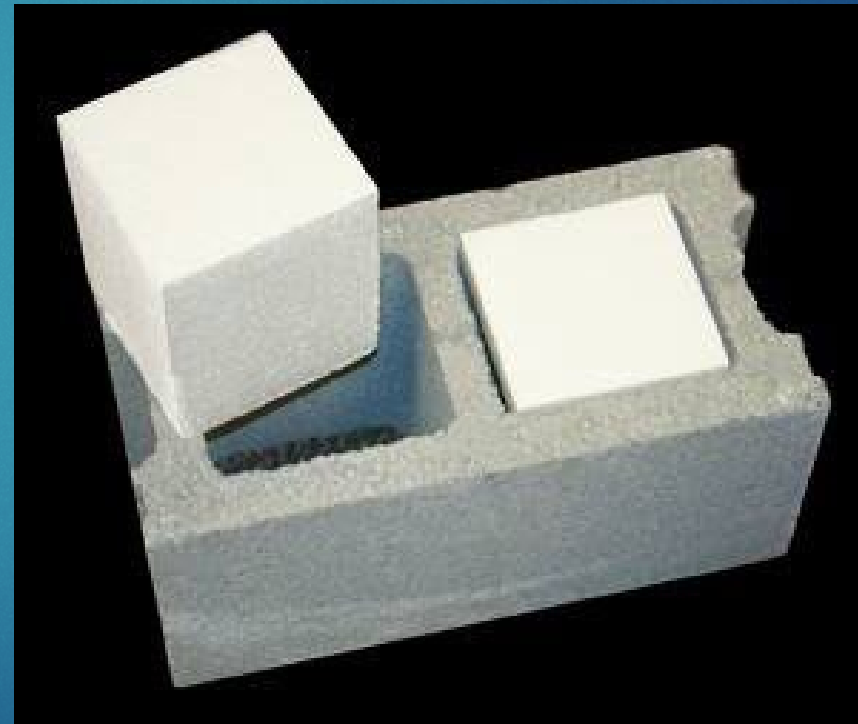
Asbestos products Christmas decoration range



Polystyrene POPs

- ▶ Whilst polystyrene is not carcinogenic most older material is designated as a POP due to the use of HBCD as a fire retardant.
- ▶ Identification of polystyrene within the building at tender stage
- ▶ Containing polystyrene especially cavity wall slabs and insulation beads
- ▶ Segregation and removal of the waste.
- ▶ Problems at landfill site especially in windy conditions.
- ▶ Yet we commonly see polystyrene used in modern construction methods.

Pre insulated blocks



Quick and easy floor construction



Polystyrene used as insulation



Composite

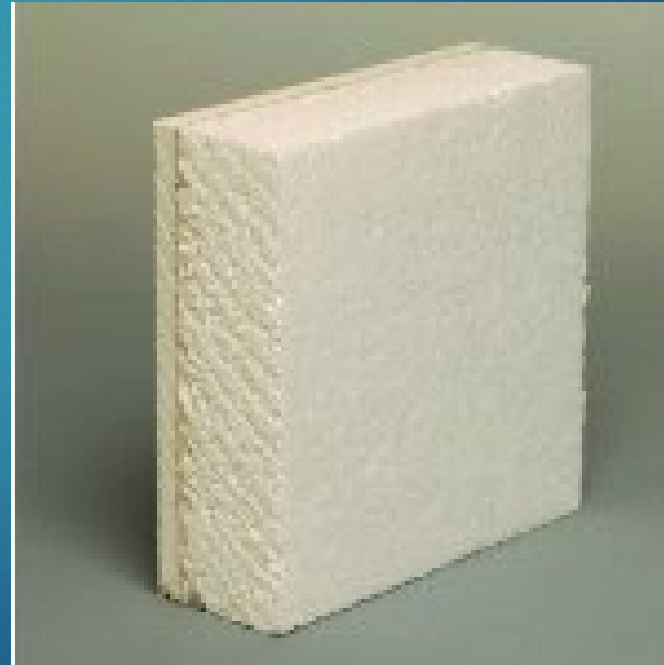


- ▶ The growing use of composite materials is proving almost impossible to keep up with.
- ▶ Energy from waste plants EFW are the main outlet for many composite materials provided they material meet strict waste acceptance criteria.
- ▶ The growing use of Carbon fibre in construction materials is a matter for concern and my next slide clearly portrays the scale of this problem.

Carbon fibre wind turbine blades.



Pre-insulated plasterboard

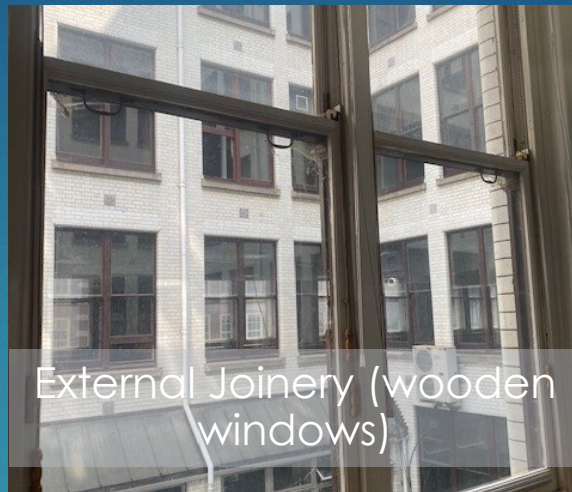


Hazardous wood waste

- ▶ 1st September 2023 saw the implementation of EA RPS 250
 - ▶ This regulatory position statement (RPS) applies to hazardous waste wood removed from domestic premises, demolition sites and other business premises and undertakings. It allows operators with an existing environmental permit to: store hazardous waste wood at a waste transfer station process and mix hazardous waste wood with non-hazardous waste wood at a wood processing site You must identify, segregate and consign hazardous waste wood collected from demolition sites, and other business premises and undertakings under waste code 17 02 04*
- ▶ Whilst the NFDC have been working with the WRA & EA to ensure the smooth implementation of the position statement contractors are already having problems with the disposal of wood waste.



Roof Timbers



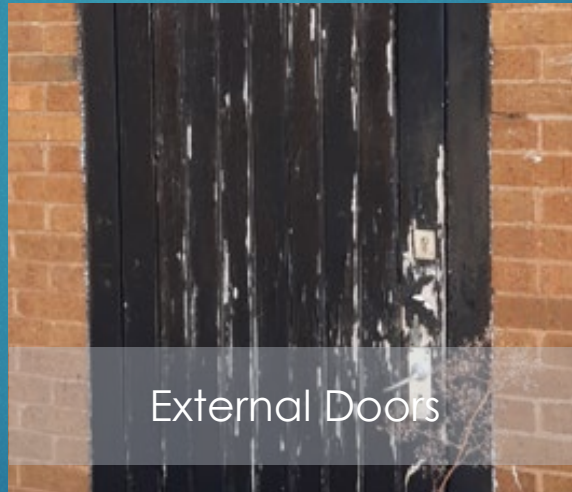
External Joinery (wooden windows)



Barge Boards, Fascias and Soffits



Tiling and Cladding Battens



External Doors

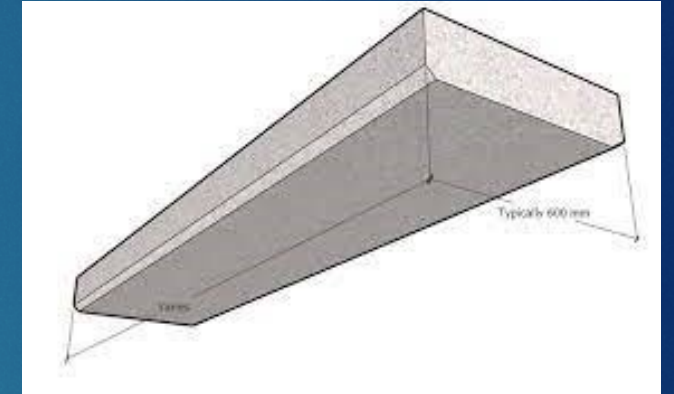


Timber frames/ Joists

Modern methods of construction

- ▶ Robin Powell, retired managing director of a large midlands based demolition contractor is quoted as saying Builders don't think of demolition at all when designing and constructing buildings.
- ▶ He said that “virtually nothing” from an MMC student accommodation block at Birmingham City University could be reused after it was demolished by DSM in 2020, and the volume of material which could be recycled had dropped by 30% compared with a traditionally built structure.
- ▶ Demolition experts have warned that the use of modern methods of construction (MMC) is making it much harder to reuse materials when a building is demolished.
- ▶ “If we really want a circular economy, we have got to look at what we put in to ensure we can take it out in the future,” .

Modern building products



ASBP Reuse Summit
18th October 2023

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Recertification, warranties and insurance

Penny Gowler
Director & Head of Sustainability
Elliott Wood

Career to date – structural engineering projects



Sustainability & industry work

Elliott Wood Sustainability Team

“““

‘We believe being involved in early decisions is where we can make real progress and Impact with greater returns both commercially and environmentally’.

Penny Gowler
Head of Sustainability and Director

Industry involvement



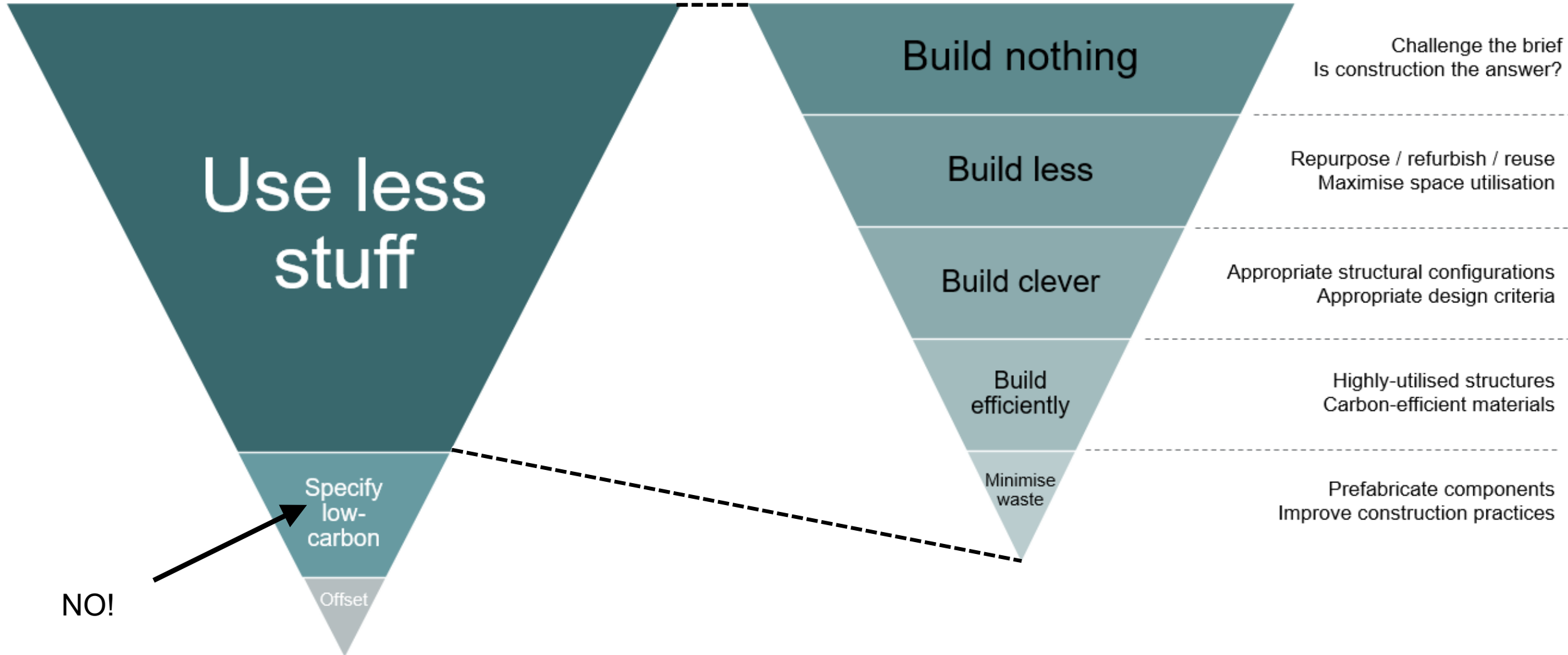
The Structural Carbon Tool
IStructE Climate Emergency Task Group
Lead author Circular Economy & Reuse design guide

Circular Economy research



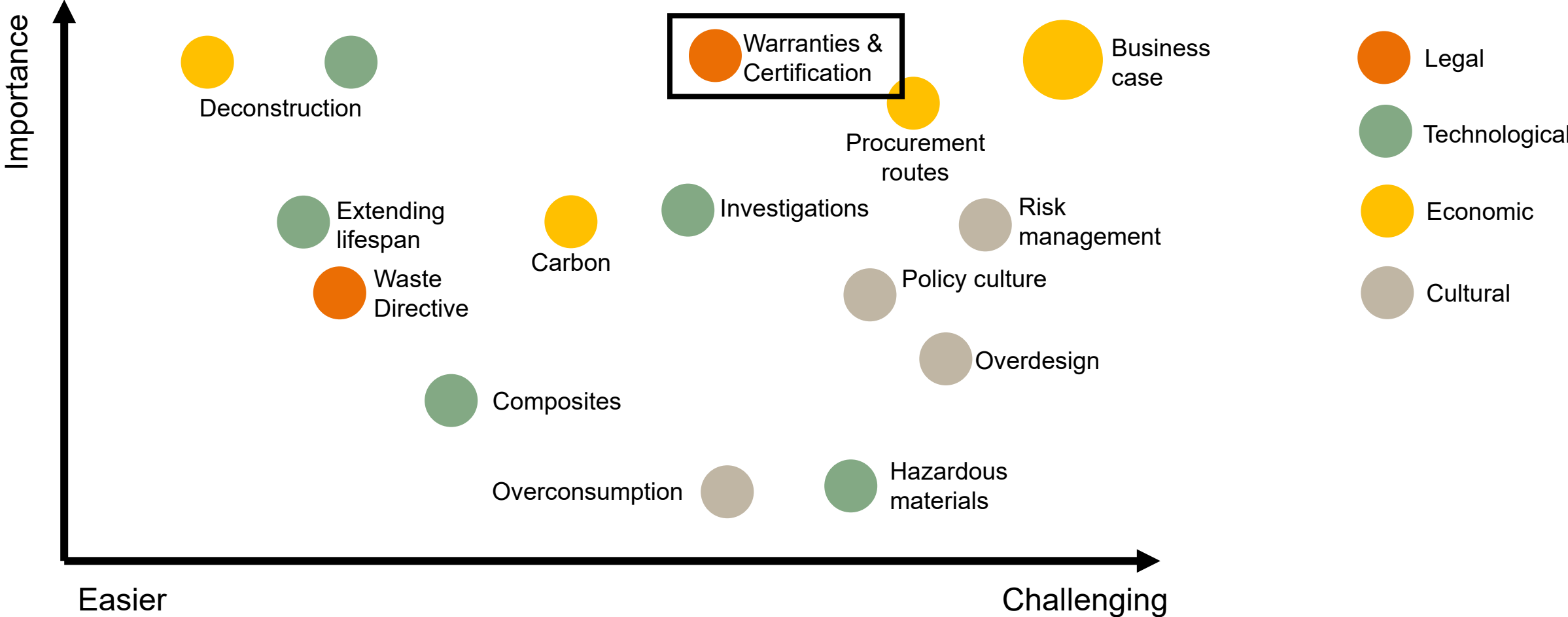
Sustainable design

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Biggest barriers to reuse

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Kia approved used cars guarantee

All Kia approved used cars come with our unrivalled peace-of-mind package. It guarantees you:

- a 7 year warranty, effective the day you drive away
- All cars are under 20 months/20,000 miles
- Free driveaway insurance
- 2 year roadside assistance
- Your vehicle inspection checklist
- One year free excess return (worth up to £250)

And, lots more besides...



Design warranty

- Designers warrant to the client that they have “*used all reasonable endeavours*” to deliver a safe design in accordance with the client’s brief.
- Backed by professional indemnity insurance.

Material or product warranty

- The customer of a product is given an assurance by the manufacturer that any defects or losses will be repaired or compensated during a given period.

Professional indemnity insurance

- Designers need this

Construction risks insurance

- Client / contractor needs this during construction

Buildings insurance

- Client needs this once the building is in use

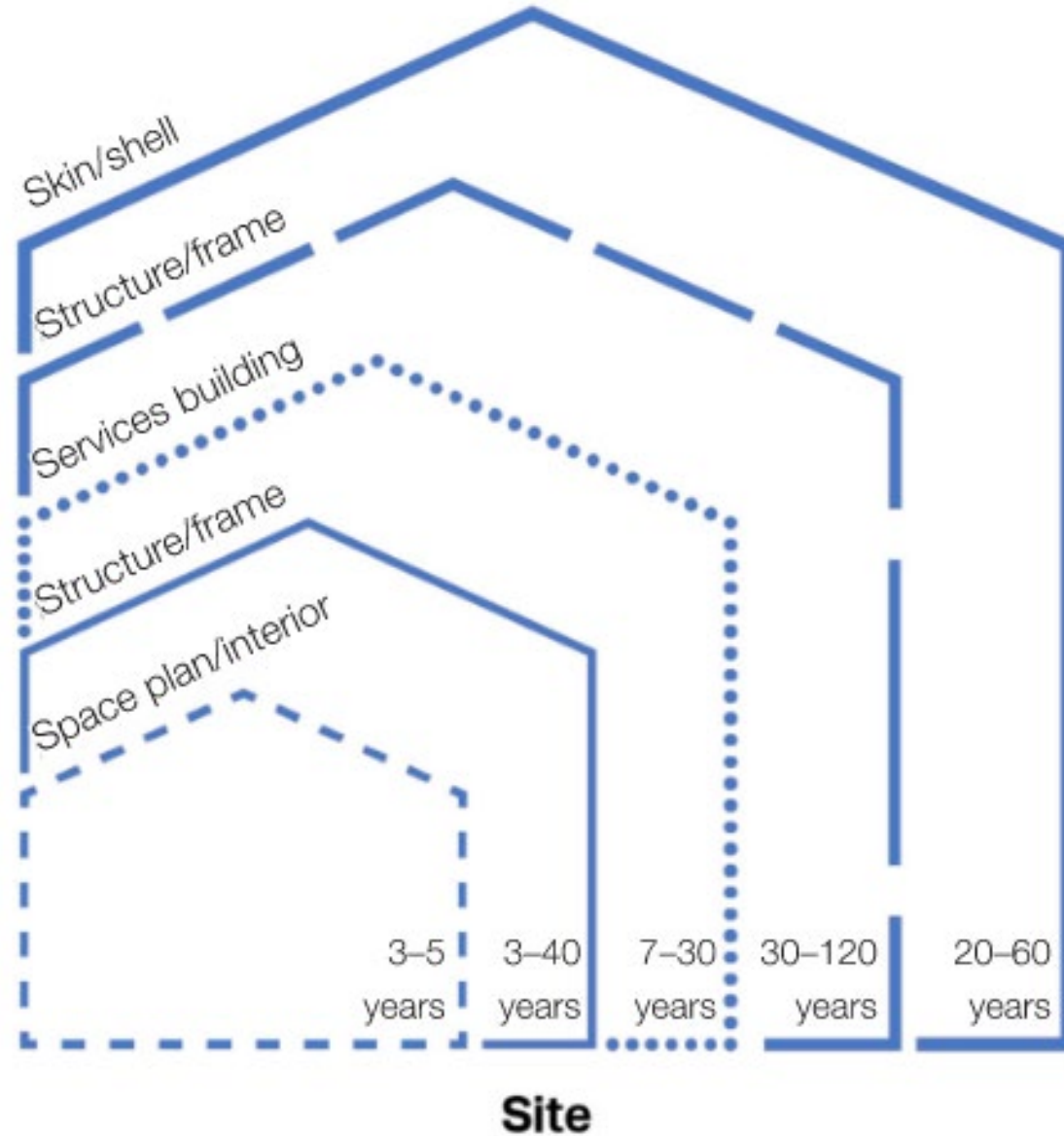
Reuse opportunities in buildings

elliottwood

Some opportunities

Difficult but possible in certain situations

Lots of opportunities



Warranties

1. Do you even need a warranty?
2. Remove the warranty barrier
 - Manufacturer take back or buy-back schemes
 - Testing & certification protocol

Insurance requirements

- Professional indemnity insurance
- Construction risks insurance
- Buildings insurance



[Home](#) | [What is the RMF Eco Range?](#)

What is the RMF Eco Range?

25-year conditional warranty

The RMF Eco range has been available for over 10 years and is simply reused raised access floor panels, installed onto a new all steel pedestal understructure.

Take back scheme - lighting

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Vitality ReLight

Regenerate what you can and
replace only what you need to

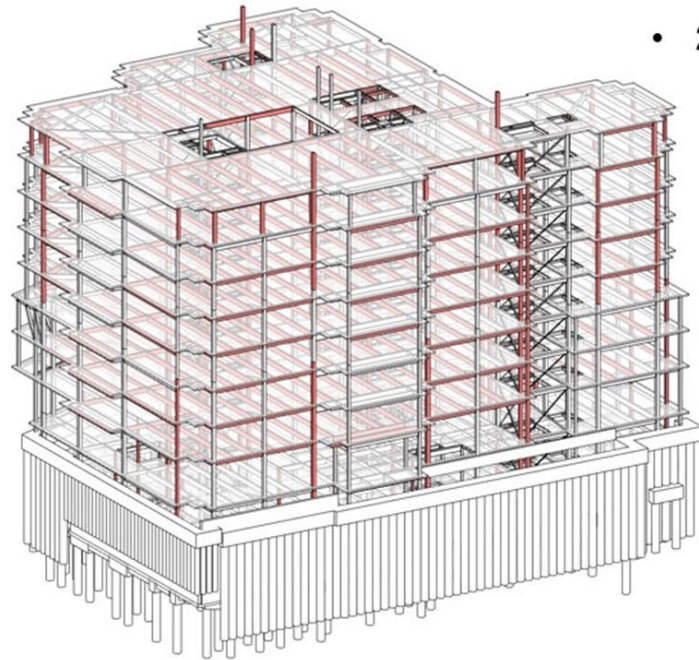


It gives you a 5-year warranty for piece of mind
We source responsibly when regenerating assets, using Cradle to Cradle Certified™ materials wherever possible. We're the only UK lighting manufacturer with a luminaire regeneration process certified by British Standards Institute Kitemark. Plus, all **Vitality ReLight** products come with a full 5-year warranty on all modified and existing parts and any luminaires that are replaced in full with **Whitecroft Vitality** products will have Cradle to Cradle certification.

Testing & certification protocol: reuse of steel

- GIA - 25000m²
- 2000+ Tonnes steelwork

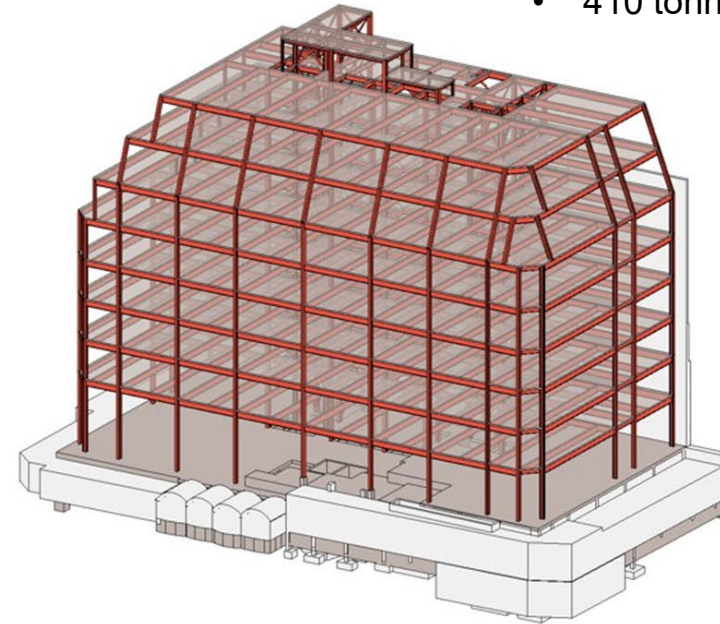
- GIA ~10,000m²
- 550 tonnes steelwork
- 410 tonnes reused steelwork



Donor Building

↓
Unsuitable
steel recycled

Steel reclaimed →



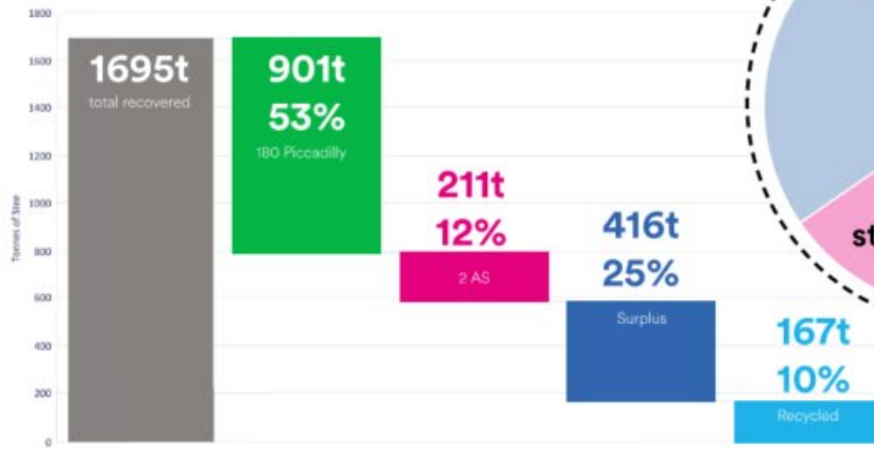
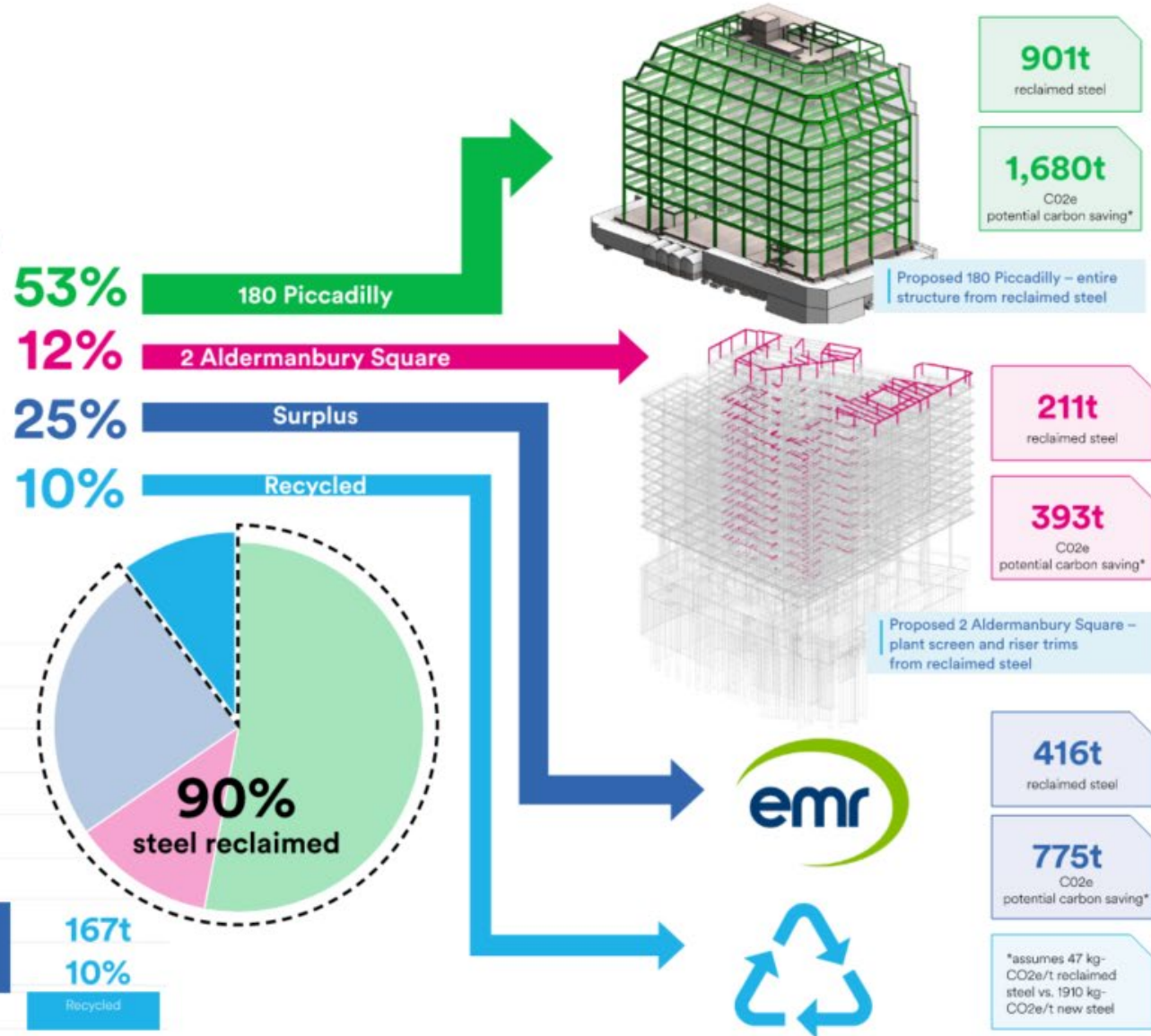
Receiving building

↓
Additional steel sold for
use on other projects

Reuse of steel



City Place House building – existing steel frame



Deconstruction

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Deconstruction

elliottwood



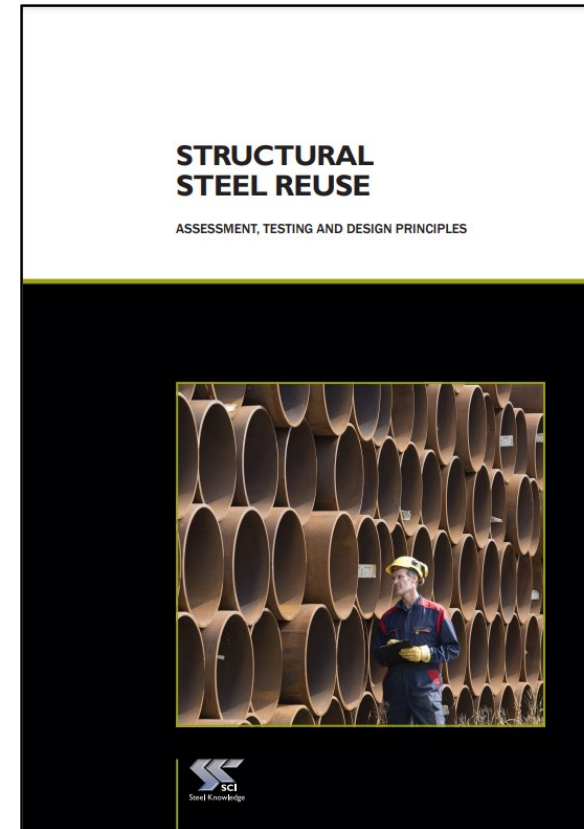
Testing

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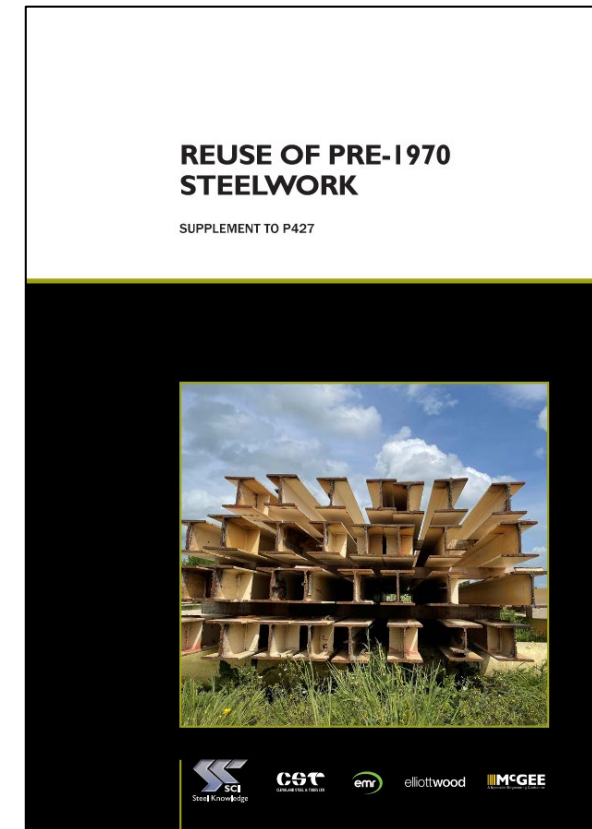


Steel: Route to certification & warranty

- ✓ P427: Steelwork originally erected after 1970
- ✓ P440: Steelwork originally erected from 1932 onwards
- ✓ Steelwork which has not been subject to fatigue e.g. not reclaimed from bridges.
- ✓ Steelwork which has not been subject to significant strains e.g. plastic hinges.
- ✓ Steelwork without significant loss of section due to corrosion.
- ✓ Steelwork which has not been exposed to fire.



P427



P440

Steel certification – new steel

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Construction Products Regulation (CPR) in the EU & UK

Requires CE Marking of all construction products from 1 July 2013
Requires CE Marking of fabricated structural steelwork from 1 July 2014

Business as Usual (Prime Steel)

Manufacturer must publish Declaration of Performance

Engineer

Engineer must specify Execution class

1. Determine the Consequence Class^a
2. Select the Execution Class^b

Steelwork contractor

Steelwork contractor must CE mark fabricated steelwork before it goes to site

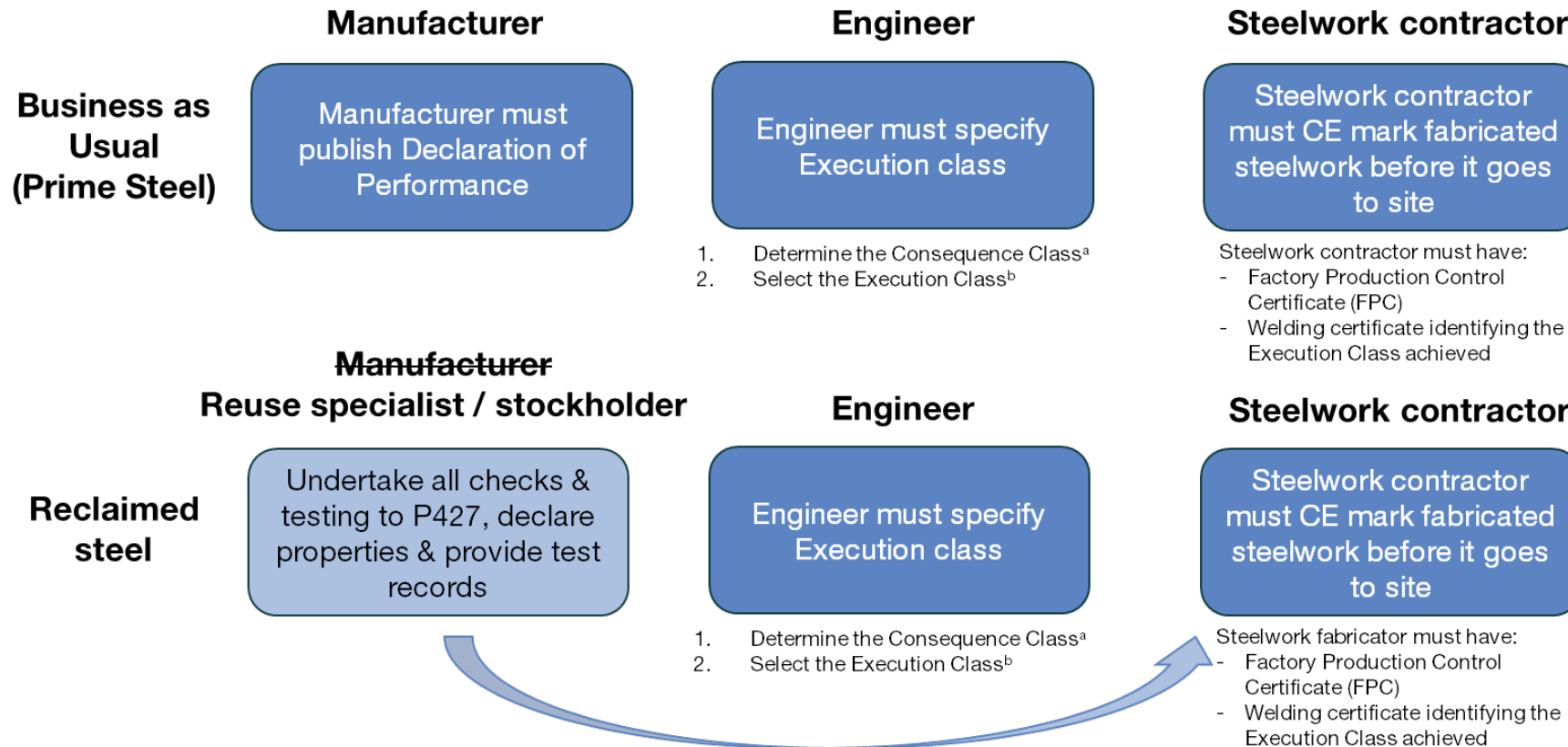
- Steelwork contractor must have:
- Factory Production Control Certificate (FPC)
 - Welding certificate identifying the Execution Class achieved

^a BS EN 1990:2002+A1:2005 Table B1. In the UK refer to Table 11 of Approved Document A

^b Table NA.4 of the National Annex to BS EN 1993-1-1:2005+A1:2014

Steel certification – reused steel

Construction Products Regulation (CPR) in the EU & UK
Requires CE Marking of all construction products from 1 July 2013
Requires CE Marking of fabricated structural steelwork from 1 July 2014



^a BS EN 1990:2002+A1:2005 Table B1. In the UK refer to Table 11 of Approved Document A

^b Table NA.4 of the National Annex to BS EN 1993-1-1:2005+A1:2014

In order for the steelwork contractor to be able to provide material warranties the reuse specialist may need to provide product insurance for the reused steel that they sell

Warranties & certification

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The issue

- Stakeholders tend to choose virgin materials that are quality assured through warranties and standards
- Nervous using second-hand materials

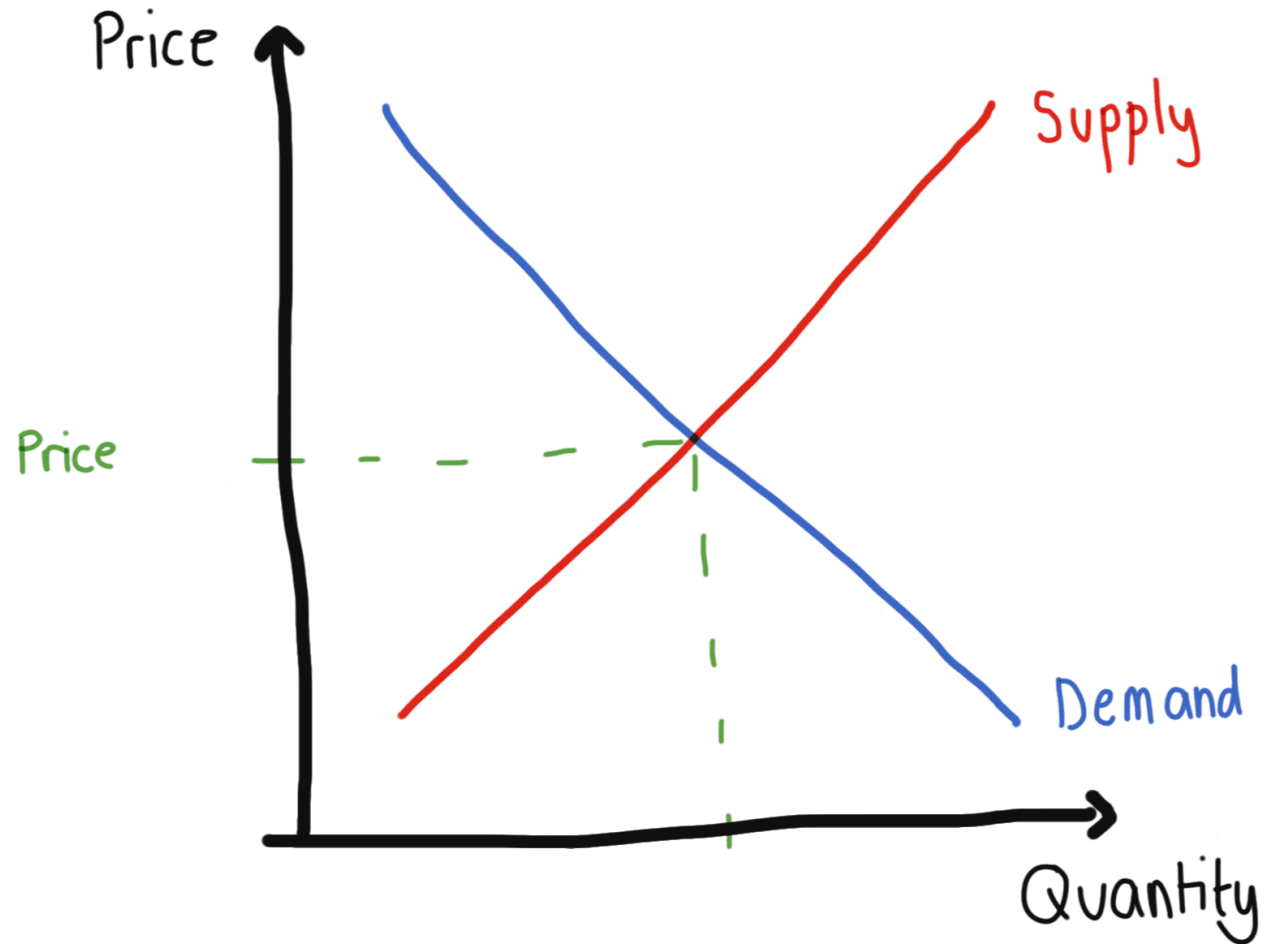


What we can do about it

- Engage with original (or similar) suppliers to ask them to take-back, refurbish and certify second hand materials
- Test materials and rely on test results for certification
- Understand stakeholder requirements and work with them to develop a solution
- Develop a certification & testing protocol
- For future: standardisation of secondary raw materials

Demand drives supply

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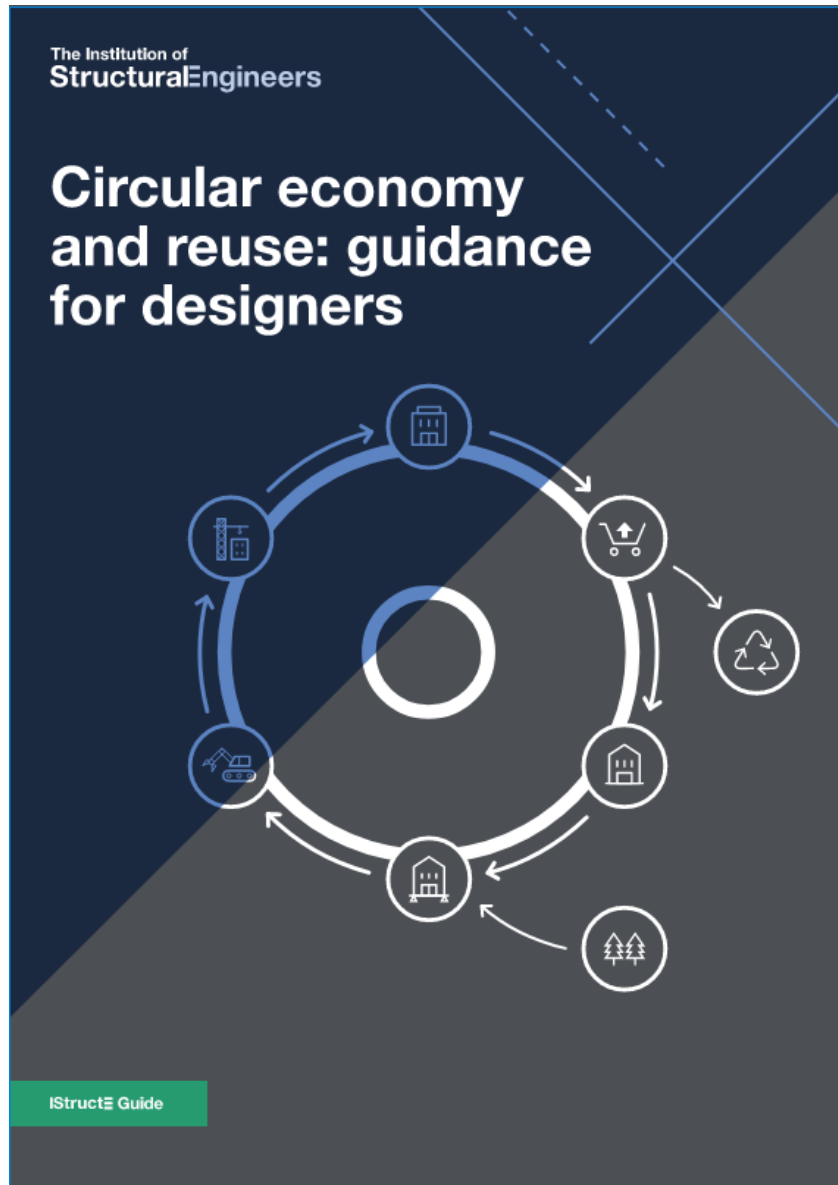


“Change will not come if we wait for some other person or some other time. We are the ones we've been waiting for. We are the change that we seek.”

Barack Obama

Tell everyone else how to do it

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elliottwood BEALE&CO



RAMBOLL

ARUP

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reusefully

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elliottwood.co.uk

Let's make waste history

There is no such thing as waste. Waste is just a resource in the wrong hands.



The world wastes **18 million tonnes** of office furniture, fixtures and equipment **every year**



80% is landfilled or burned



Less than **20%** is recycled or reused



80% is in **good** to **new** condition




Fair market **value** of **\$11 billion**



Offset equivalent to **1.2 trillion trees**



A blue office chair is shown against a blue background. The chair is a modern, high-back style with a mesh-like texture. The text is overlaid in white, bold, sans-serif font.

**Over 30% of a buildings
lifetime carbon emissions
are in the furniture,
fixtures and equipment.**



Only 55% of emissions can be tackled by clean energy.



The remaining 45% demands circular economy solutions.

Reduce **Reyooz** Recycle

Reyooz is a B2B SaaS resource management technology used to scale reuse and the circular economy, helping lower procurement and operational costs and reduce waste.

[#enterprise-asset-management](#)

[#net-zero](#)

[#circular-economy](#)

Zero waste workplaces

Technology driven **inventories, marketplaces, logistics** and **reports**.



Reyoos_ID: Photographic inventories, AI and asset tagging across entire estates accessible to all employees across the organisation.



Reyoos Plus: Managed service to sell, move, store and clear assets from an easy-to-use web app.



Marketplace: Buy and sell assets saving money and carbon.



Logistics: Reyoos manages vehicles, manpower and warehousing enabling logistics.



Reports: Every item, every kilogram tracked traced and recorded as hard data and hard evidence. ESG ready carbon accounting.

Circularity at **scale**

Circular cities fuelled by the worlds largest companies.



FLUOR.



Foster + Partners



CBRE



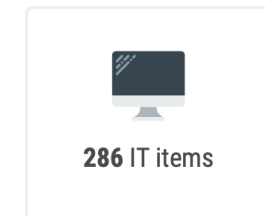
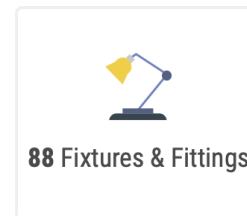
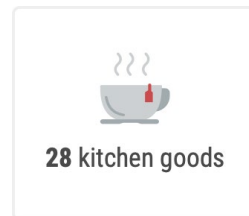
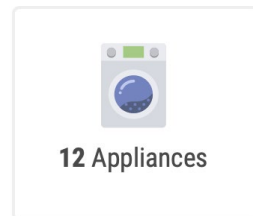
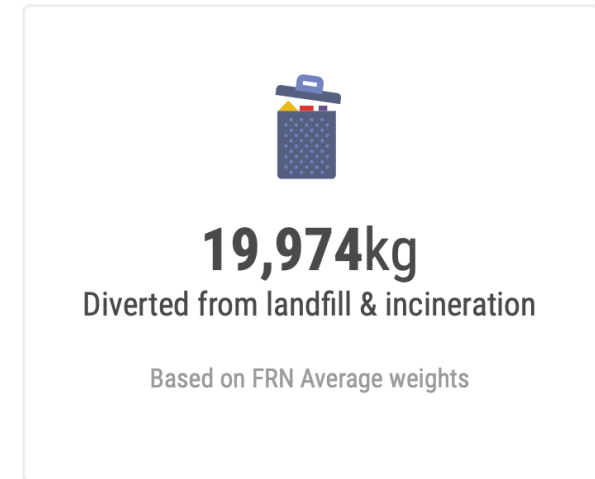
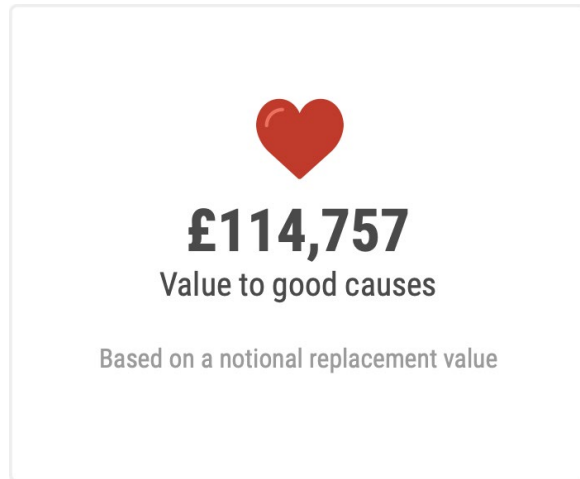
Allianz 

 **UCL**

sodexo 

Dynamic ESG **impact** reports

Your organisation has reused **2,072 items** in **27 schools**, **4 charities**, **47 SME's** and **21 homes**.



Roxbourne Primary School

Roxbourne Primary school is a grant maintained school in Harrow, North London. Rashid Benserghin, headteacher about Reyooz and the positive impact the furniture they have received from Reyooz has had on the school. Rashid has been at the school for four and half years

“Over that time we’ve invested a lot in the quality of education for our pupils, investing in staff, but one thing we hadn’t done till we partnered with Reyooz was being able to invest in the learning environment. We are super, super happy with the furniture we’ve secured via Reyooz”.

Initially we wanted to improve the staff room. I had a look for options and Reyooz stood out as a genuine service”

£124,900

value from Reyooz

WWW.REYOOZ.COM



“We’ve spent around ten thousand pounds with Reyooz but that’s got us furniture worth over £100,000. Working with Reyooz we made improvements that would have taken over a decade to achieve in a few months”.



Rashid Benserghin
Head Teacher

Thank you.

Relentless, resilient, responsive and here to help you and your organisation take simple steps to make a massive impact.

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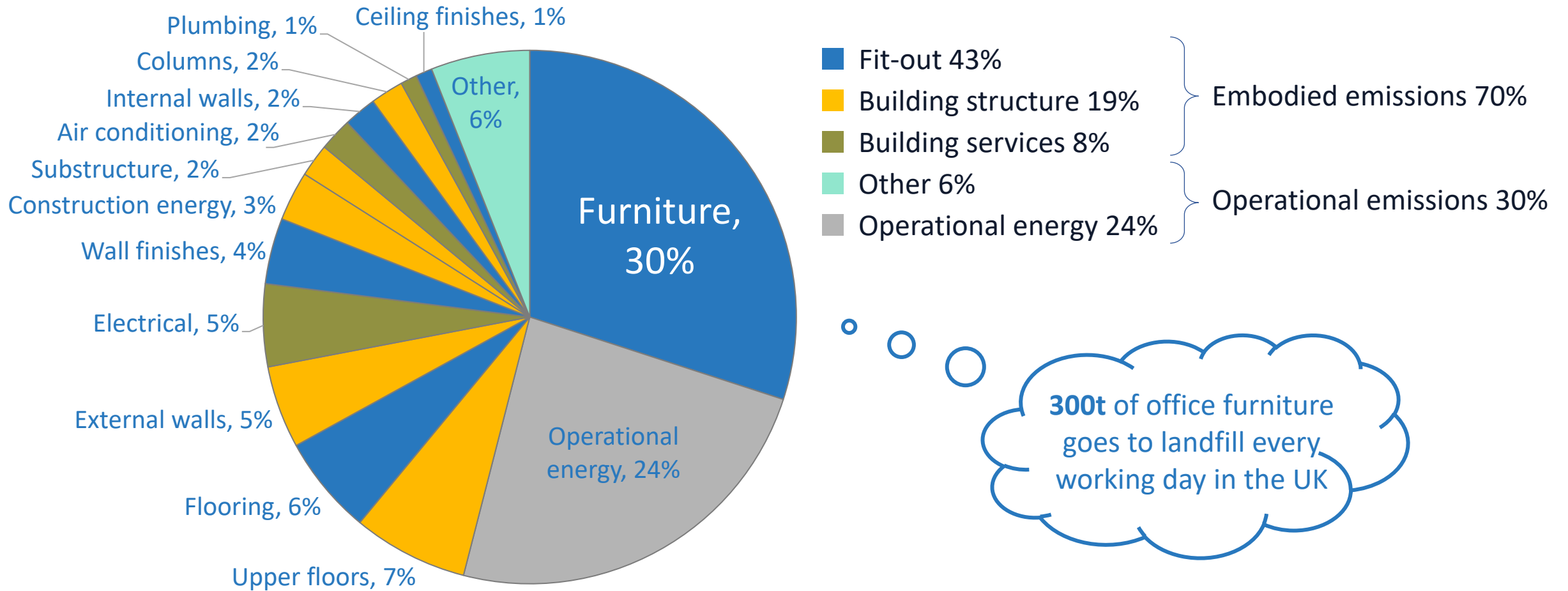


Office Furniture Remanufacturing

Dr Greg Lavery

18 Oct 2023

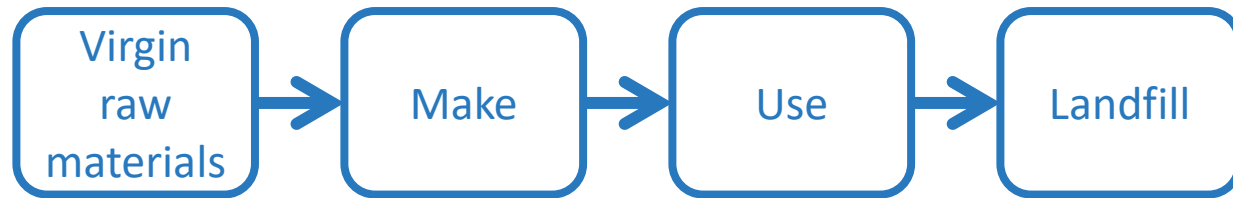
Commercial Building Lifetime Greenhouse Gas Emissions



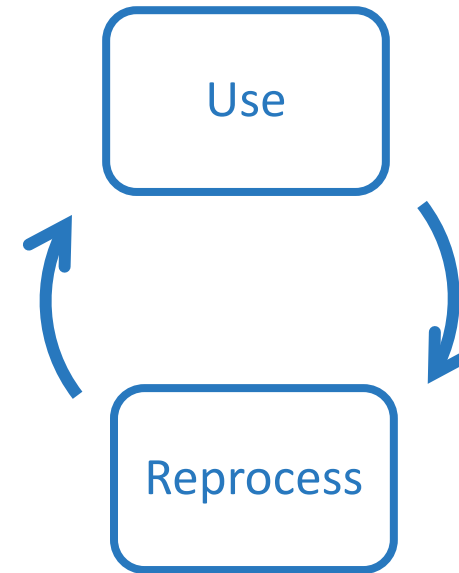
300t of office furniture goes to landfill every working day in the UK

Source: Treloar, GJ. Et al, 1999, *Embodied energy analysis of fixtures, fittings and furniture in office buildings*, Facilities, Volume 17, Number 11, pp. 403-409 (Accessed on 14 June 2019 at https://www.academia.edu/18481731/Embodied_energy_analysis_of_fixtures_fittings_and_furniture_in_office_buildings)

Linear Economy



Circular Economy



Remanufacturing is the only low carbon, cost-competitive Circular Economy solution for high quality offices

- As-new
- Warranty

- As-new** furniture ... with a warranty
- 20-30%** lower cost ... £ millions saved for client
- 80%** lower emissions ... >1 million kgCO₂e saved
- 80%** less waste ... 500+ tonnes saved
- Social value** created ... 8,000+ hours of employment for those furthest from the workforce



Rype has completed over 350 projects for clients including:



A wide-angle photograph of a modern, open-plan office interior. The space is characterized by its industrial aesthetic, featuring exposed ceiling infrastructure such as large silver ducts, pipes, and lighting fixtures. The floor is a mix of grey carpet tiles and light-colored wood-look planks. In the foreground, there are several large, grey, curved modular sofas. The middle ground contains various workstations, including small round tables with orange and grey chairs, and larger rectangular tables. A central bar area with a blue patterned front and white countertop is visible. The background shows a bright, open area with a green wall, a white lattice partition, and more seating. The overall atmosphere is bright and collaborative.

JLL Manchester

- 14,000 ft²
- £47,000 saved
- 9,500 kgCO₂e avoided
- 3t of waste avoided



JLL Canary Wharf

- 38,000 ft²
- 75% second life furniture
- 40,000 kgCO₂e avoided
- 13t of waste avoided



TRAFNIDIAETH CYMRU
TRANSPORT FOR WALES

- 68,000 ft²
- 77% second life furniture
- 90,000 kgCO₂e avoided
- 31t of waste avoided

**THE
HOWARD
deWALDEN
ESTATE**

- 30,000 ft²
- £300,000 saved
- 90% second life furniture
- 31,000 kgCO₂e avoided
- 10t of waste avoided





Contact us

Rype Office

contact@rypeoffice.com

033 3358 3330

ReCOlight

Reuse | Recycle.

Nigel Harvey
CEO

Members of and supported by



About ReCOlight

- Not for profit WEEE recycling scheme
- Over 200 leading lighting producer members
- UK's largest collector/recycler of waste lamps and light fittings
- Passionate about CE and reuse
- Circular Lighting Live conference
- Part of Cat A lighting working group



ReCOlight Reuse Hub

- Online platform
- Links donors with recipients
- Lighting specific
- New product donations or
- Used product
- Free to use
- Any organisation can register
- Happy to connect/share data with other platforms



Flooring Installation Matters!

The Effect of Adhesives on Circularity & Reuse

FLOORING WASTE



"an area the size of the city of Birmingham is thrown away in carpet every year in UK"¹

462,000 tonnes carpet waste p.a. with 82% landfill diversion²

BUT only a tiny % is reused or recycled

¹Changing Markets Foundation, ²Carpet Recycling UK

DAMAGED ASSETS



Expensive building assets contaminated - concrete sub-floors and raised access flooring

RECTIFICATION



Messy, costly, carbon intensive rectification needed.

>> Disruption, downtime, expense.

Facilitating Flooring Reuse

Through Adhesive-free Flooring Installation



IMPROVED CIRCULARITY

Flooring easily reused, avoiding additional embodied carbon



ASSET PROTECTION

Sub-floor undamaged, eliminating costly remedial work

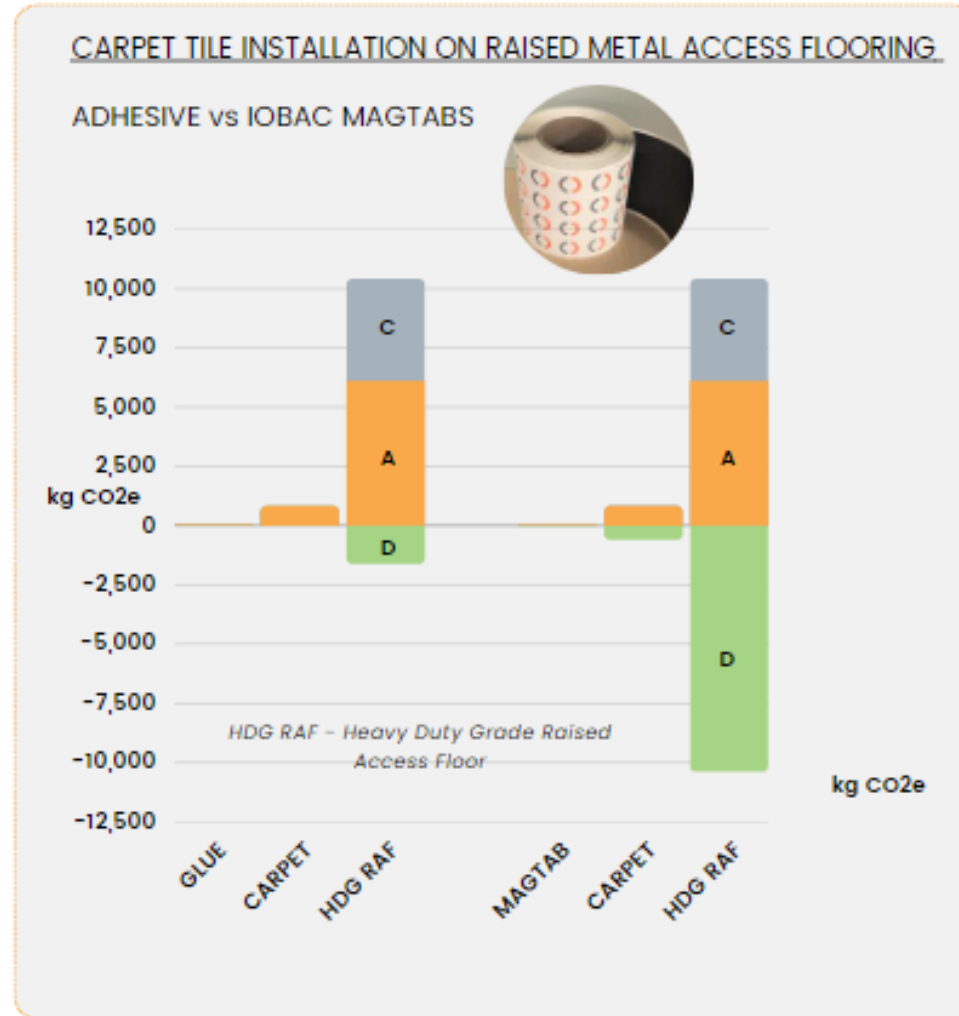
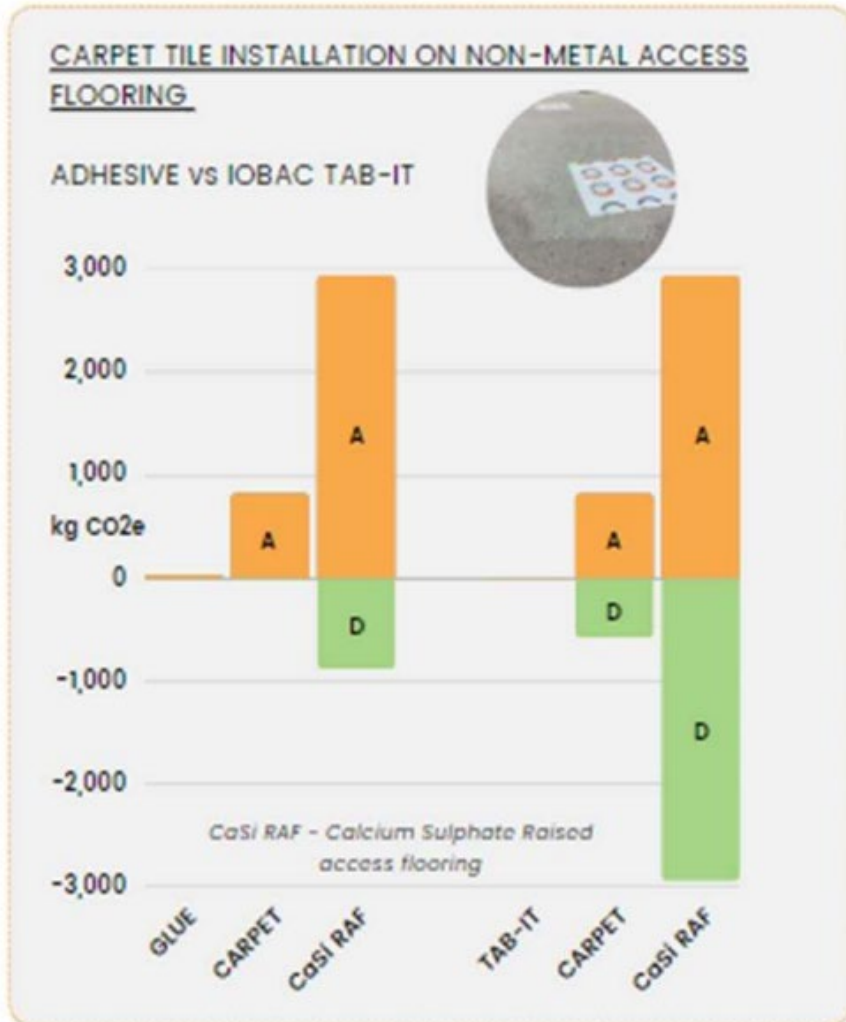


DESIGN FOR DISASSEMBLY

Reversible Fixing - combine flooring types on all common sub-floors



Up to 80% carbon savings due to material reuse



The Carbon, Cost and Design Benefits of Adhesive-free Flooring Installation

FACILITATING FLOORING REUSE

Floor coverings installed using adhesives can be difficult to reuse or recycle on uplift due to contamination from adhesives. This can result in flooring sent for incineration or landfill, and significant rectification work to the sub-floor before the next installation.

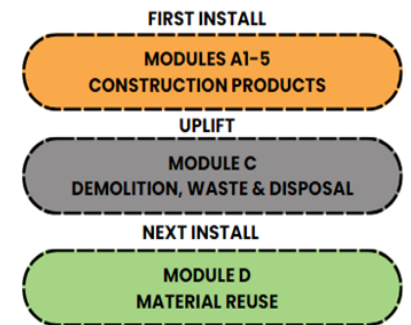
We explore how IOBAC Adhesive-free Flooring Installation Tabs address this issue by enabling floor coverings to be affixed securely throughout the life of the installation, yet cleanly and easily uplifted.

These reversible fixing mechanisms give flooring a second life, vastly improving flooring circularity whilst decreasing whole-life costs and increasing design flexibility.

SUMMARY OF BENEFITS

- CIRCULARITY**
 - Uplifted flooring is free from adhesive contamination, meaning it can be reused or more easily recycled through the manufacturer's take-back scheme
 - Sustainability certification scheme credits for material efficiency and waste reduction
 - Extra embodied carbon avoided through material reuse, rather than renewal
- ASSET PROTECTION**
 - Access flooring and sub-floors left undamaged
 - Zero mess, cleaning or remediation costs needed
 - Reduced install, maintenance & disposal costs
- DESIGN FOR DECONSTRUCTION**
 - Universal Fixing System - combine different flooring types and brands in one design
 - Use on most commonly prepared sub-floors
 - Reversible fixing enables flooring and base to be easily separated
 - Easy uplift of tiles for repair and redesign

© IOBAC 2023 **IOBAC** The future of flooring, today.



*Source calculations provided by Perkins&Will for 100 sqm area

Sustainability Assessment Credits for Reuse



Mat 01: Life Cycle Impacts

Up to 6 credits for the reuse of materials

Mat 06: Material efficiency

1 credit for material use optimisation
e.g. "Floor coverings: can existing floor coverings be reused on or off-site?"

Wst 01: Waste Management

Up to 7 credits for reduction of waste
e.g. for used carpet tiles

- 3 points for on-site reuse of original carpet tiles
- 2 points for off-site reuse on other projects
- 1 point for direct recycling via a manufacturer

Wst 06: Functional Adaptability

1 credit for measures accommodating future changes
e.g. Use of systems which allow easy replacement

Interiors Life-Cycle Impact Reduction

Points for interior reuse and design for flexibility
e.g. Design at least 50% of floors to be movable or demountable, ensure that at least 50% of nonstructural materials, by cost, are reusable or recyclable



Best practice includes:

D14: Reduce floor finishes sent to landfill
M07: Raised Flooring Systems - reuse
M11 & 12: Hard & Soft Flooring - reuse



Whole-life cost savings

| | | £/SQM |
|--|---|--------|
| FLOOR COVERING (Materials & labour) |  | £25 |
| ADHESIVE |  | £0.50 |
| RAISED METAL ACCESS FLOOR |  | £40-50 |

In a 1,000m² project:

£75,000

(metal raised access floor and flooring)

are damaged by using **just £500 worth of adhesive!**

Repairing the damage, and disposing of
the contaminated floor covering, will cost
approx

£15,500

With adhesive-free installation:

ZERO

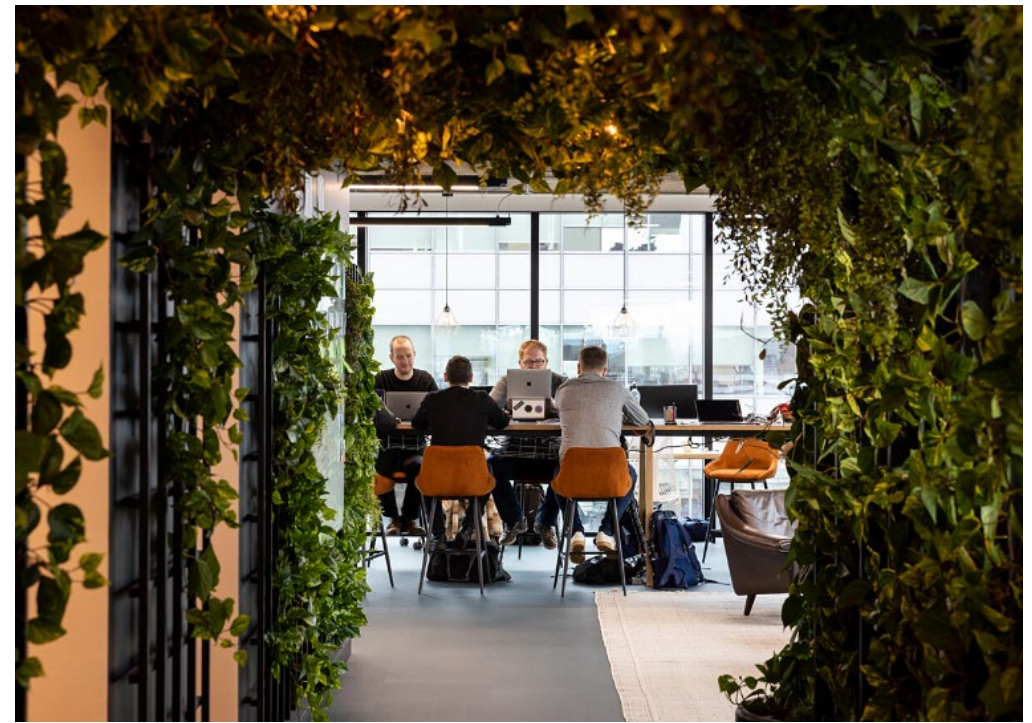
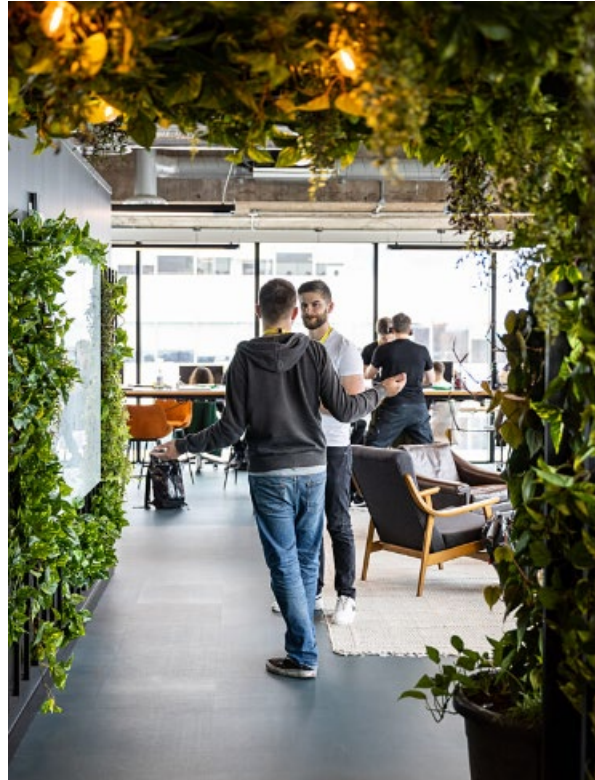
damaged assets
mess
cleaning
dilapidation costs.

adhesive-free installation costs are **40%** less than traditional methods.

Due to reduced installation and maintenance costs, and material reuse

Reuse in Action

Project: Peak 2 Head Office (35,000 sq ft)



*Sheila Bird estimate that they were able to reduce traditional fit-out costs **by up to 50%**, with the project successfully delivered on a reduced timeline.*

Plus, saving future dilapidation costs of up to £35 per sq ft for tenant.

SHEILA BIRD STUDIO
Obi



IOBAC The future of flooring, today.

Industry Collaboration | Bigger Picture Thinking

Specification of installation method, alongside floor covering

Proven in projects using:



ShawContract®



Burmatex®
MANUFACTURERS OF CREATIVE FLOORING

BOLON

Balsam
BALSAN

DESSO
A Tarkett Company

Interface®



ntgrate®
premium woven vinyl

Milliken

Second Location warranty



The interiors in your space are assets and should be treated as such, which is why Shaw Contract is the only flooring manufacturer to have a warranty for carpet tiles installed with Magtabs to be used in a second location.

After inspection and approval carpet tiles can now be reused in a second location with an extended second location warranty. This means the raised access floor and carpet tile can be reused with little cost and carbon impact. This is a perfect solution for managing operational interior assets.

Gaining Awareness & Traction



Materials Brief (Jan 2021)

"Avoid using adhesives to create composite materials that cannot be recycled."

Preferred for Flooring – "Mechanically (as opposed to chemically) fixed methods."

Ideal for Flooring – "Products with established closed loop recycling systems (take back schemes)."



BIID Sustainable Specifying Guide

"If using carpet tiles, use a glueless system that allows easy removal and recycling of materials."

SUSTAINABLE PROCUREMENT GUIDANCE FOR MODULAR CARPET

"All carpet tiles shall be able to be installed with pressure-sensitive corner tape, tiles, or dots that allow for easy removal and replacement of the carpet tile. With the exception of high-stress locations such as stairs, no carpet installation shall require full-coverage, wet-applied adhesive"



END USERS



Our Reuse Promise

www.iobac.com



**CONTAMINATION
FREE UPLIFT**



**DRY APPLIED
SYSTEM**



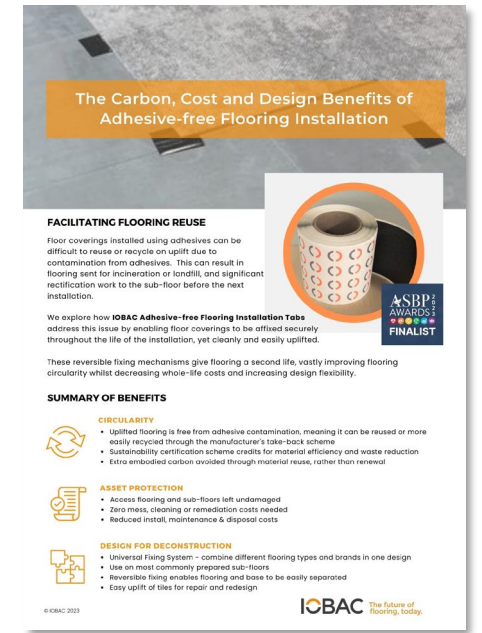
**MATERIAL
EFFICIENCY**



**RECYCLED
CONTENT**



REUSABLE



RMF INSTALLATION & SERVICES LTD

RMF ECO RANGE

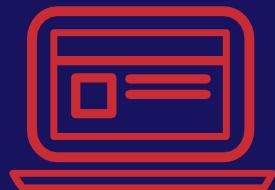
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OVERVIEW



RMF ECO RANGE

What is the RMF Eco range?

What do you do to the panels?

What warranty/testing do you complete?

Why should you consider the RMF Eco range?

What are the carbon and cost savings?

WHAT IS THE RMF ECO RANGE?

- Founded over 15 years ago
- Reuse of raised floor
- Variety of legacy systems taken back
- Legacy panels 'over engineered'
- Original PSA 'medium grade'



WHAT TESTING/CHECKS DO YOU DO?

- Hand inspection, RMF De-Tac used
- Hand cleaned
- Random in house testing -
centre of edge test
- Raised floor manufactured with
3 X safety factor (8KN UDL)
- 25 Year RMF system warranty



WHAT IS TOTAL TAKE BACK?

- Cuts, damaged panels, pedestals
- All pedestals recycled
- Chipboard for Biomass
- Galvanised steel for re-bar
- ZERO to landfill



WHAT IS THE CIRCULAR PANEL SOLUTION?

- Panels reclaimed by RMF
- Panels put through RMF process
- Re-delivery to site
- Installed on to new PSA pedestals
- Full 25 year system warranty



CARBON CASE STUDY

PROJECT: **90LA**

LOCATION: **COVENT GARDEN**

CONSULTANT: **ARUP**

SIZE: **20,000M2**

CARBON SAVING: **82%**

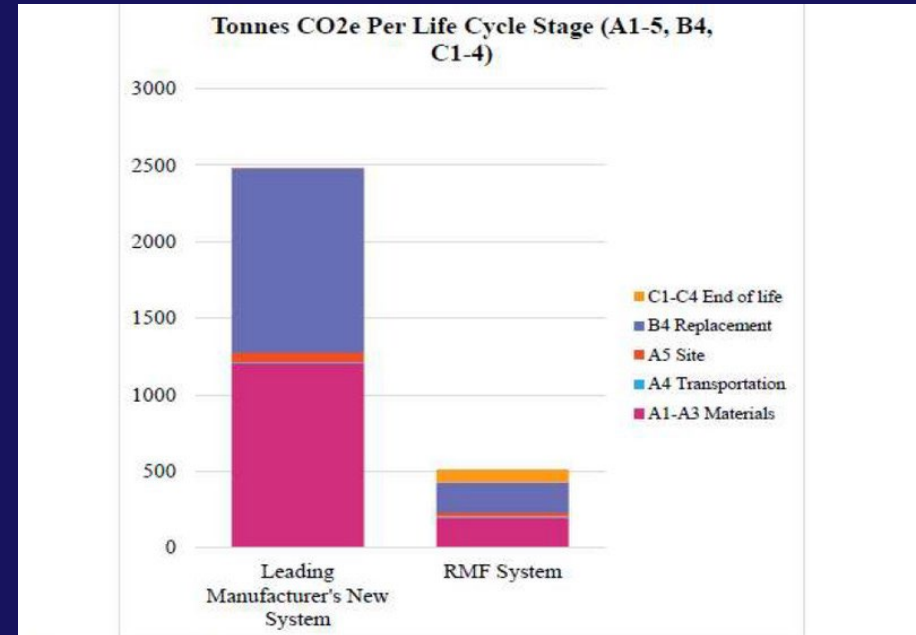


Figure 1: Graph to show the total tonnes CO2e of the two proposed systems over life cycle stages A1-5, B4, and C1-4.

GLOBAL\COMMON\BELUGB02000023140021486-00\610463 ACRES\INTERNAL DATA\REPORTS\08 SUSTAINABILITY\08_EMBEDDED CARBON\RMF FILE COMPARISON\FILE SITE REV3.DOCX

WHY THE RMF ECO RANGE?

TRACK RECORD

OVER 30 YEARS IN
RECYCLING
RAISED FLOOR,
OVER 1MILLION M²
INSTALLED
NATIONWIDE

WORLD LEADER

ONLY COMPANY
GLOBALLY TO HOLD
AN ENVIRONMENTAL
PRODUCT
DECLARATION (EPD)

COST SAVING

OFFERING A
SOLUTION THAT IS
BOTH SUSTAINABLE
AND COST
EFFECTIVE

CASE STUDIES

WE HAVE 100'S OF
CASE STUDIES TO
VIEW PROVING THE
SCALE OF OUR
WORKS FROM 100M²
TO OVER 30,000²

AWARD WINNING

MULTIPLE AWARDS
WON FOR CIRCULAR
ECONOMY, REUSE
AND INNOVATION

ANY QUESTIONS?

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Reuse Now Campaign

22nd September 2023

Debbie Ward, Reuse & Circular Economy Associate

Aims of the Reuse Now Campaign

To increase uptake of the reuse of construction products and materials through:

- Practical focus by exploring supply chain barriers and develop solutions
- Open dialogue and sharing of knowledge between reuse material donors/recipients and wider ecosystem to enable greater uptake
- Become the 'go-to' place for practical guidance and information on the reuse of products in construction.
- Learn from what others have done to progress quickly (not everyone doing their own research)

Not duplicate with others - joining the dots - highly collaborative

Activities/ Method to achieve the aims

- **Establish cross-cutting issues:** establish and prioritise needs and support the creation of (improved) solutions e.g. storage, material exchanges, insurance, policy etc.
- **Stakeholder mapping:** map reuse activities and stakeholders active in reuse.
- **Events & social media:** to encourage engagement and interaction and to disseminate knowledge gained and lessons learned.
- **Website, documents and blogs:** augment the current Reuse Now area of the website, signpost to existing information and create new case studies, briefing papers, blogs and guides to share knowledge and drive impactful action.



Activities/ Method to achieve the aims

Deep Dives - develop a work stream for each identified agreed product (6 months) bringing the supply chain together, prioritise going forward (through survey responses and key sponsor/stakeholder needs) – for example:

- Logistics/distribution
 - Housebuilding
 - Aluminium panels
 - Bricks
 - Ceiling tiles
 - FF&E/ Furniture
 - Fire doors
 - Insulation
 - Luminaries/light fittings
 - Non-structural steel
 - Partitioning (glass)
 - Raised access flooring
 - Structural steel
 - Windows
 - Flooring/carpet tiles
 - Sanitary ware
 - MEP
- Assessment of barriers and how they can be overcome (linked to enablers)
 - Bring together key stakeholders (e.g. insurance, certification bodies, manufacturers etc)
 - Research and capture learnings successful precedents -case studies, lessons learned
 - Discuss/create short and long terms solutions/interventions for increase in reuse
 - Action plans, webinars and summary report

Get involved

Core stakeholders

Led by Clients/ Developers – the ask, what do they need to know - and involving relevant representatives from across the value chain

Funding/ Sponsorship

We are still looking for forward thinking organisations to sponsor the Reuse Now Campaign activities with Gold, Silver and Bronze Packages available.

Benefits to stakeholders

Benefits of being involved with the Reuse Now campaign include:

- knowledge exchange and learning
- thought leadership opportunities and leading by example
- being associated with sector best practice
- being able to input into and have access to research and practical outputs to support your organisation - and the industry - to achieve its Circular Economy and Net Zero Carbon targets.

Contact details for more information

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ASBP

The Alliance
for Sustainable
Building Products

Reuse Now Survey



@asbp_uk

Thank you!

We invite you to enjoy drinks and canapes