



# CMEX

CONSTRUCTION MATERIALS EXCHANGE

A dating-site for waste



“  
I was intrigued to hear about the innovative approach being developed in the Netherlands by a company called the Excess Materials Exchange.”

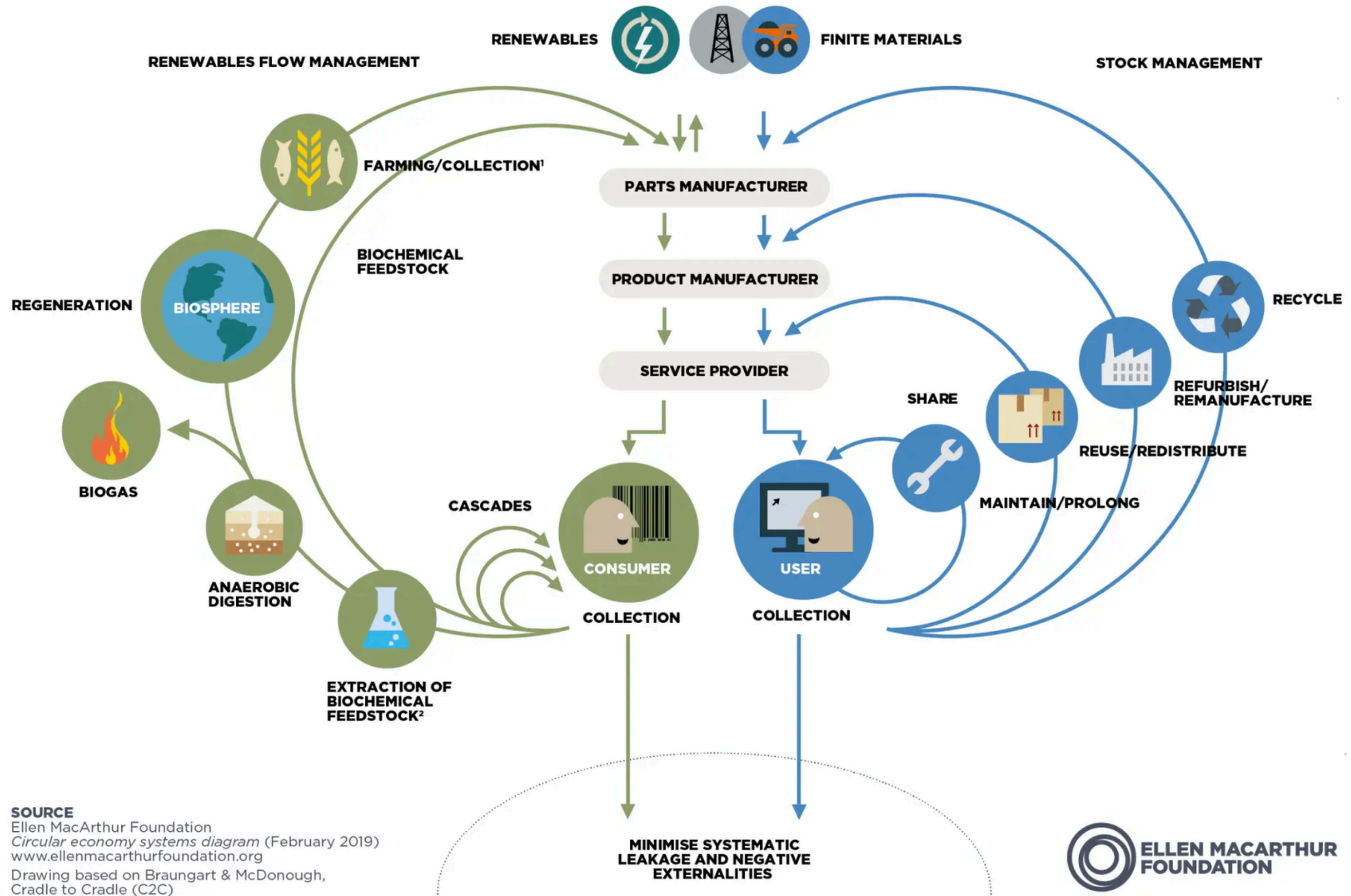
- HRH King Charles

BUSINESS  
IN THE  
COMMUNITY

The Prince's  
Responsible  
Business Network

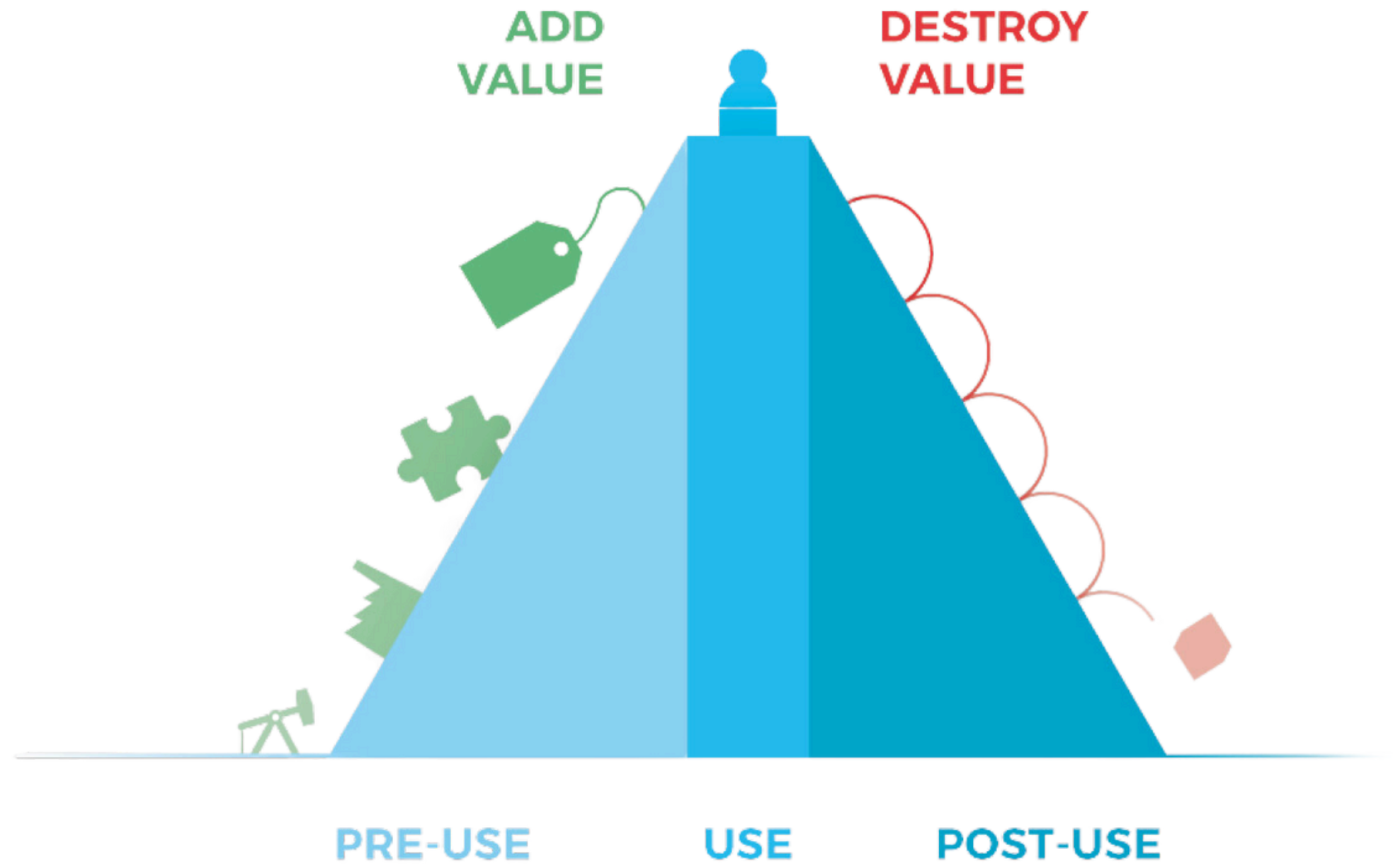


Seamless sustainability  
Amplified profits



**SOURCE**  
 Ellen MacArthur Foundation  
*Circular economy systems diagram* (February 2019)  
[www.ellenmacarthurfoundation.org](http://www.ellenmacarthurfoundation.org)  
 Drawing based on Braungart & McDonough,  
 Cradle to Cradle (C2C)





Source: Circular Economy – Master Circular Business with the Value Hill (2016)

| **WHY?**

"The biggest threat to our planet, is the belief that someone else will save it"

Robert Swan



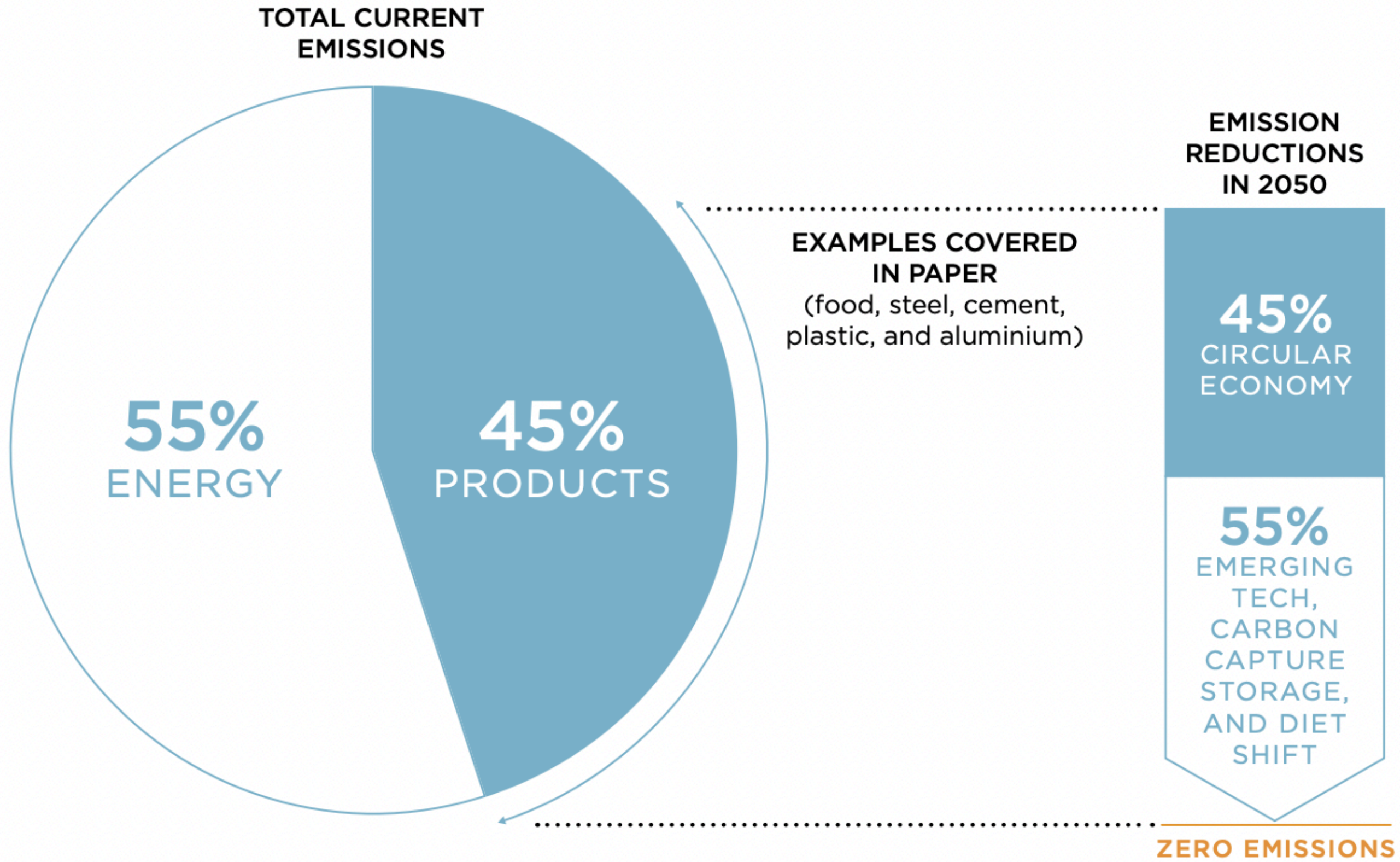


“The Circular Economy seems to be stuck in the future”

**7.2%**

This figure must double to keep our world liveable and thriving







## A Circular Built environment in London would:

- Save >14 million tonnes of material in the next 10 years
- Reduce UK's carbon footprint by 3.5%
- Save the industry £1.25 billion



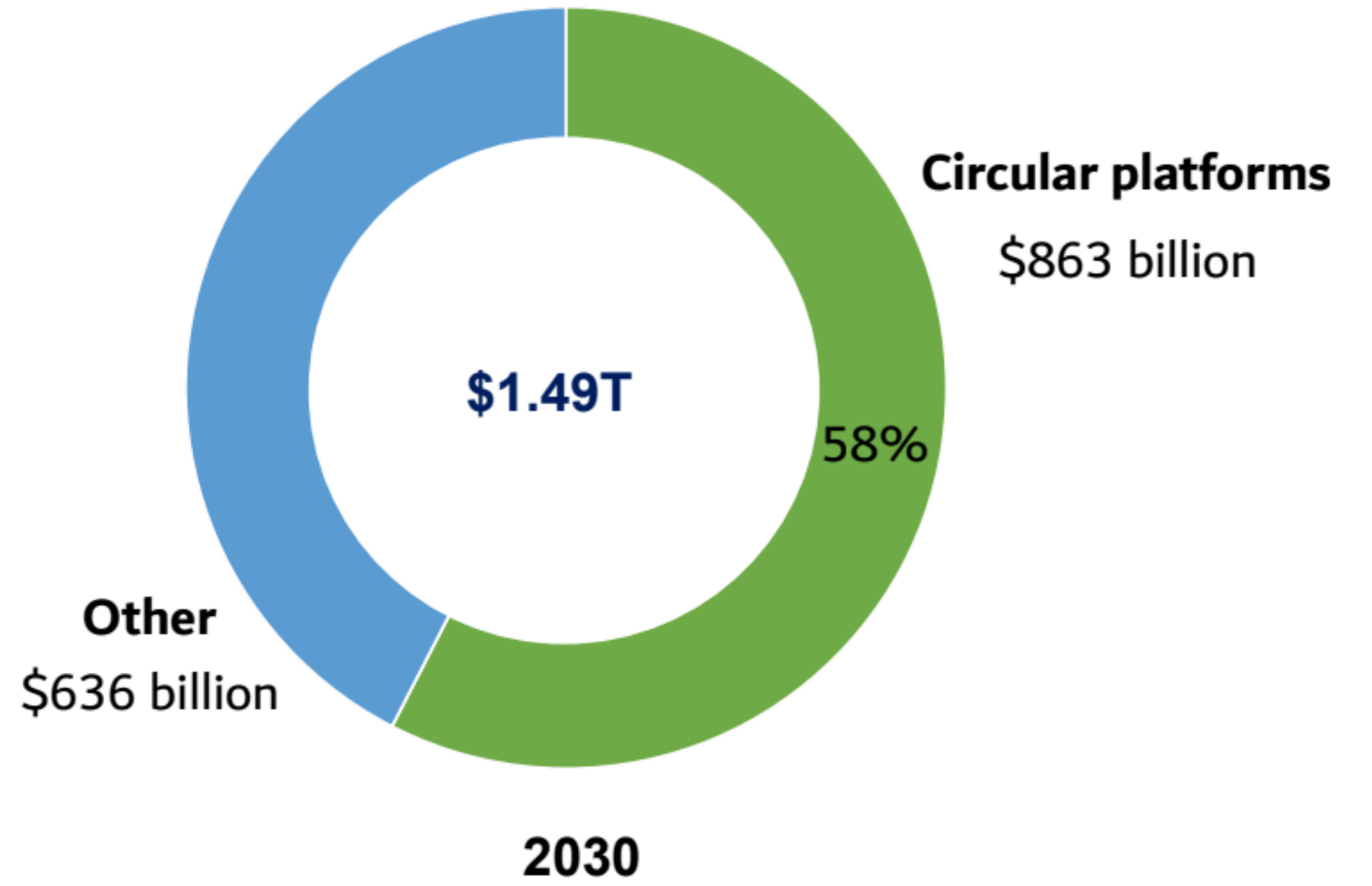
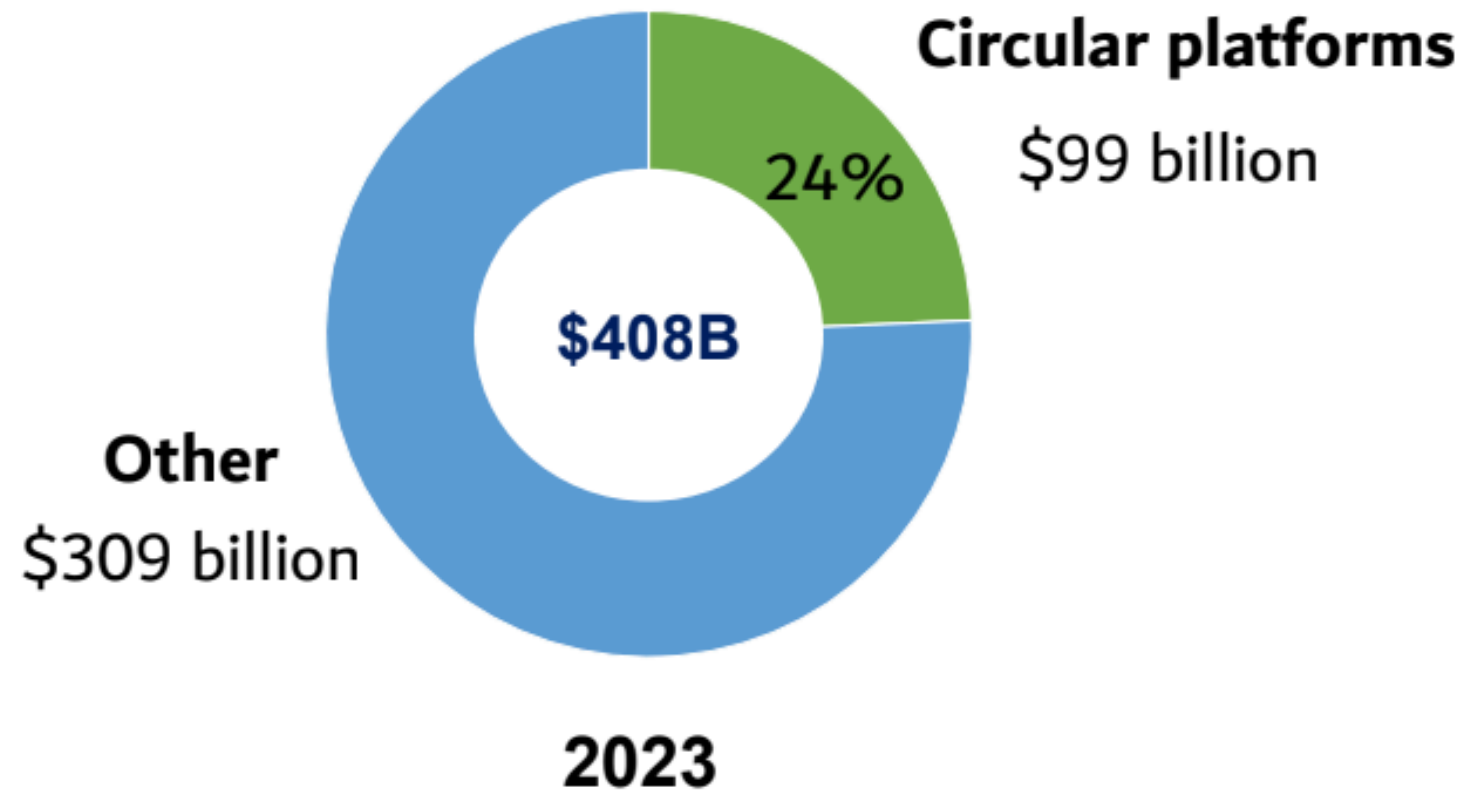
**Exhibit 38: Corporate spending on circular models reached around \$800 billion, equating to ~3% of spend on linear models**  
 Summary of global spending by sector and Comparison of Linear and Circular corporate spending estimates, 2019-21

Sector	Spending area	Circular economy estimate (\$ bn)	Sector	Linear model value	Circular component	Circular model value	Circular as a % of linear
Government	Waste recycling	636 <i>If less stimulus: 510</i>	Fashion	\$1.5 trillion	Resale	\$7 billion	5%
	Energy efficiency				Rental	\$1.26 billion	
	Circular R&D				Artisanal	\$34 billion	
	International development				R&D/new business models	\$2 billion (est.)	
	New initiatives				Hemp	\$0.2 billion	
	Economic stimulus packages						
Corporate	Consumables	800	Electronics	\$2 trillion	E-waste market	\$42 billion	2%
	Automotives		Construction	\$10.5 trillion	Retrofit market	\$132.8 billion	3%
	Waste				Green cement	\$609 million	
	Food and drink				Green construction	\$40 billion	
	Agriculture				Recycling	\$126 billion	
	Mining and extractives				Electric vehicles	\$52 billion (est.)	
Financial	Private finance institutions	46	Mobility	\$2 trillion	Battery recycling	\$1 billion (est.)	6%
	Development finance institutions				Mobility as a Service	\$74 billion	
Total		1,482	Food and beverage	\$6 trillion	Vegan food market	\$12.69 billion	2%
Total (less stimulus)		1,356			Cell-based meat	\$15 million	
			Agriculture	\$8 trillion	R&D	\$128 billion (est.)	0.05%
			Non-specific waste	\$1.36 trillion <i>(less e-waste, food and constr. waste and govt. expenditure)</i>	Indoor farming	\$14 billion	
					Food waste	\$34 billion	
					Insect feed	\$687 million	
			Mining and extractives	\$3.6 trillion <i>(mining, oil and gas)</i>	Bioplastics	\$4.6 billion	8%
					Plastic recycling	\$27 billion	
					Unaccounted for recycling	\$79 billion	
			Total	\$35,400 bn	Waste to energy	\$35 billion	3%
					Waste to chemicals	N/A	
					E-waste	Already counted	
					CCS	\$10.45 billion	
						\$800 bn	2.3%

Source: Just economics, Chatham House



Seamless sustainability  
Amplified profits



Source: McFadyen Digital, 2023

# Why is this not happening?

From our experience, some of the key barriers are:

- Lack of data
- Procurement (engagement with supply chain)
- Storage/ logistics
- Certification/ warranties
- Incentivisation

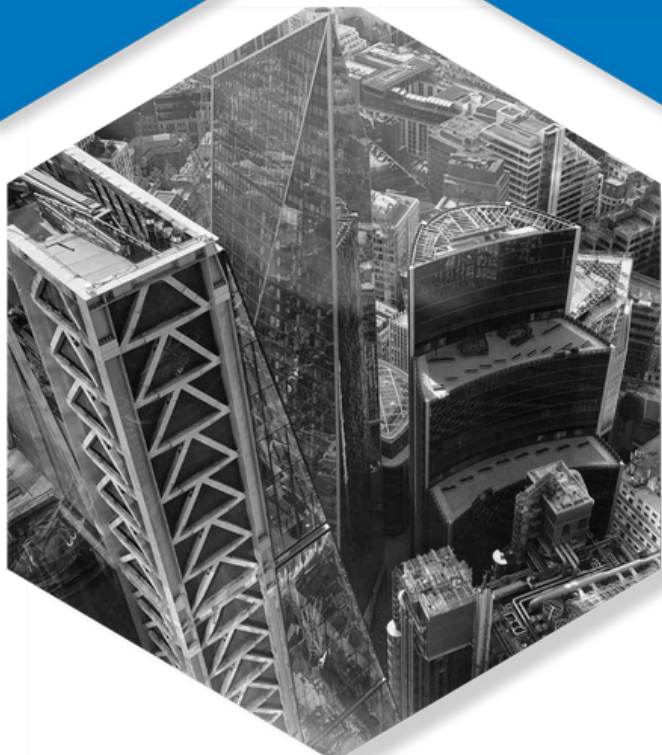


**Resources passport:  
Comprehensive  
material identity**

**Artificial Intelligence:  
Easing the burden of  
uploading**



**Tracking and  
tracing: Ensuring  
accountability  
and transparency**



**Matchmaking:  
AI-driven solutions  
for material reuse**

**Auctions:  
Time limited  
passports in line  
with procurement  
needs**

**Marketplaces:  
Ability to browse  
across the market**




# Resources passport:

Comprehensive material identity



Unique product ID

Configurable entry fields

Simple uploads



EXCESS MATERIALS EXCHANGE

 Profile
  Logout

Inventory >

Marketplace >

Auctions >

---

VIEWS

Info >


---


CLIENT ADMIN

User >

## Capping Layer Edit

### Main Information







**Title**  
Capping Layer

**Description**  
Capping layer nominal 300mm with 100mm natural stone cover available for reuse


Key Information    **Additional Information**    Contact Information

**Upload additional information:**





enfield\_pdf .pdf 

<p><b>Further information in terms of potential further uses:</b> Useful as 6F5 capping material elsewhere for infrastructure or landscaping works in Meridian Water</p> <p><b>Date of manufacture/ installation:</b> 2000 - 2020</p> <p><b>Any info regarding allocation - especially free to collect:</b> Potential use of 6F5 specification capping layer available for other uses.</p> <p><b>Other pickup details:</b> N18 3BW</p>	<p><b>Other ease of removal/quality/warranty considerations:</b> See attached for built report and specification</p> <p><b>Value/potential for reuse:</b> Low</p> <p><b>Condition:</b> Good</p>
--	---



Account: Enfield Council

Powered by

# Artificial Intelligence:

Easing the burden of uploading

AI prompts

Data feeds into resource passport

Output - tagging

The image displays a user interface for the EME AI Engine, which is used for managing inventory and tagging items. The interface is divided into several sections:

- Header:** Includes the EME logo (EXCESS MATERIALS EXCHANGE) and user navigation options like Profile and Logout.
- Navigation:** A sidebar menu with options for Inventory, Marketplace, Auctions, Info, and User.
- Main Information:** A product listing for 'light fitting' featuring a QR code, a photo of the ceiling-mounted luminaire, and a list of tags such as 'ceiling mount', 'Fixture', 'Decoration', 'Pattern', 'providing light', 'light bulb', 'Metal', 'Ceiling', 'Building material', 'Building', 'Composite material', 'illumination', 'Glass', 'lampshade', and 'enhancing ambiance'.
- AI Engine Workflow:** A progress bar at the top shows steps: Usages, Functionalities, Materials, Components, Computer Vision, and Tags. The 'EME AI Engine' section provides a list of potential tags detected by the AI, with toggle switches to select relevant ones. A 'Selected tags' section at the bottom shows the chosen tags: illumination, decoration, providing light, enhancing ambiance, metal, glass, light bulb, lampshade, fixture, ceiling mount, Building, Composite material, and Ceiling.

# Tracking and tracing:

Ensuring  
accountability and  
transparency

History timeline records  
all changes, i.e.,

- location
- quantity
- condition

The screenshot displays the EME EXCESS MATERIALS EXCHANGE interface. On the left is a navigation menu with options: Inventory, Marketplace, Auctions, Views, Info, and Client Admin (User). The main content area is titled 'Tracking & Tracing' and features a 'Timeline' section with a date selector for January 9, 2023, at 4:00:35 PM. Below this, three data fields are shown: 'Field: Location' with two entries (one in red, one in green), 'Field: Project' with two entries (one in red, one in green), and 'Field: Expected value/cost' with one entry in red. To the right is a 'Location History' map showing a blue path with location pins across a city street grid.



# Matchmaking:

AI-driven solutions  
for material reuse

Environmental, Social,  
and Economic indicators  
for matches generated  
through EME AI engine

- Inventory >
- Marketplace >
- Auctions >

- VIEWS
- Info >

- CLIENT ADMIN
- User >

## Main Information

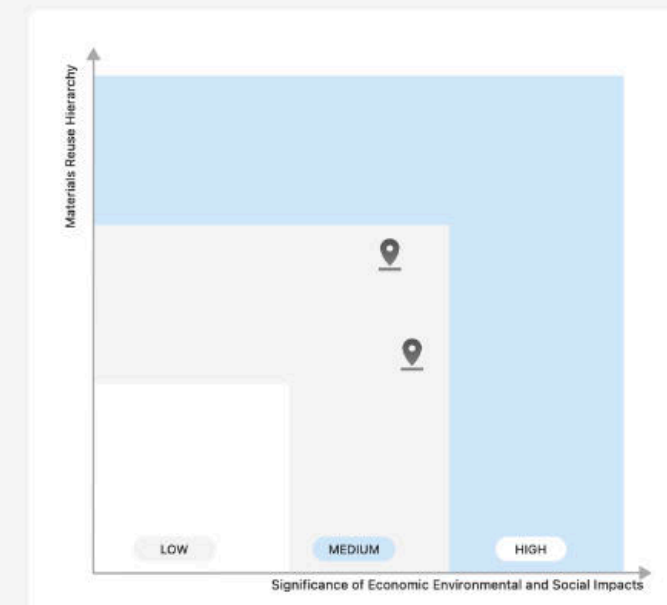


**Title**  
light fitting

**Description**  
ceiling mounted luminaire

- Tags**
- Fixture
  - ceiling mount
  - Fixture
  - Decoration
  - Pattern
  - providing light
  - light bulb
  - Metal
  - Ceiling
  - Building material
  - Building
  - Composite material
  - illumination
  - Glass
  - lampshade
  - enhancing ambiance

## Solutions



Search

- [View](#)  
ALUMAFLOOR  
Material made of 52% post-i...  
[Read More](#)
- [View](#)  
ALUMAFLOOR  
Material made of 52% post-i...  
[Read More](#)

Showing: 2 out of 2 First 1 Last



# Marketplaces:

Ability to browse across the market

Flexible search engine, i.e.

- Material
- Project
- Tag
- Location

EXCESS MATERIALS EXCHANGE

Inventory >

Marketplace v

Create new marketplace

Search

Recent Searches

marketplace

uk construction

wood

Auctions >

---

IEWS

Info >

---

CLIENT ADMIN

User >

---

ENFIELD Council Powered by NetPositive SOLUTIONS

Account: Enfield Council

User: Nitesh Magdani

[Terms & Conditions](#)

[Privacy Policy](#)

v.1.0.3 - [Contact Support](#)

© 2024 EME. ALL Rights Reserved

MARKETPLACES Add New

JFH Marketplace

Search

Filter Sort By ASC

Grid View Map View

John F Hunt

Marketplace search result page...

MARKETPLACES Add New

Search

Filter Sort By ASC

Profile Logout

<p><b>Derwent London marketplace</b> This entry has this number of matches: 2</p> <p>Derwent London developments</p>	<p><b>StructureTone London</b> This entry has this number of matches: 3</p> <p>STO London developments</p>
<p><b>Newham Council marketplace</b> This entry has this number of matches: 1</p> <p>Newham council local developments</p>	<p><b>BAM UK &amp; Ireland marketplace</b> This entry has this number of matches: 4</p> <p>BAM UK construction and demolition sites</p>
<p><b>City of Westminster marketplace</b> This entry has this number of matches: 4</p> <p>Westminster local developments</p>	<p><b>The FIS Reuse Initiative</b> This entry has this number of matches: 2</p> <p>Project site for the FIS Reuse Initiative</p>

ENFIELD Council Powered by NetPositive SOLUTIONS

Account: Enfield Council

User: Nitesh Magdani

[Terms & Conditions](#)

[Privacy Policy](#)

v.1.0.3 - [Contact Support](#)

© 2024 EME. ALL Rights Reserved

# Auctions:

Time limited  
passports in line  
with procurement  
needs

Environmental, Social,  
and Economic indicators  
for matches generated  
through EME AI engine

- Inventory >
- Marketplace >
- Auctions >

VIEWS

- Info >

CLIENT ADMIN

- User >

Account: Enfield Council

User: Nitesh Magdani

[Terms & Conditions](#)

[Privacy Policy](#)

v.1.0.3 - [Contact Support](#)

© 2024 EME. ALL Rights Reserved

## Overview



### OFFICE STRIP OUT CONTRACT

Strip out contract for office interior in Victoria

**Start Date & Time**  
2024-04-09 23:50:21



> Office strip out contract

Search



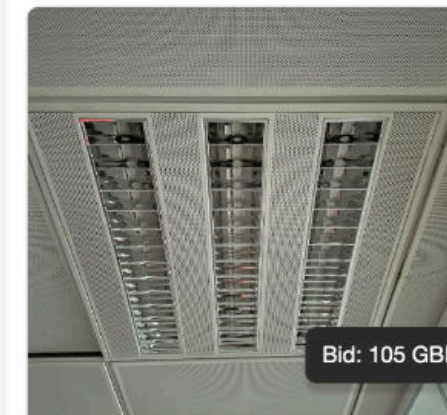
Filter

Sort By

ASC

Grid View

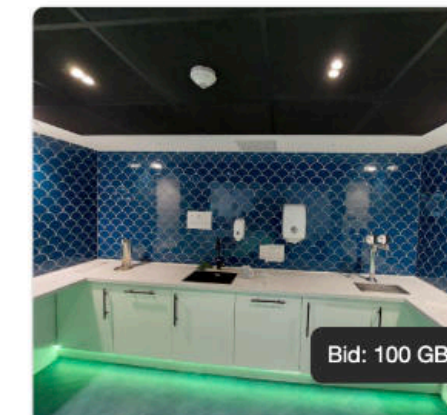
Map View



Bid: 105 GBP

light fitting  
ceiling mounted luminaire

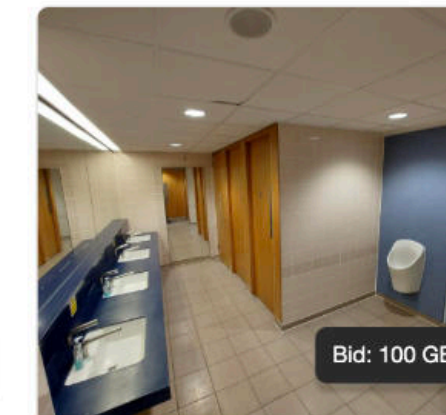
Time Left: 9d 15h 31m 32s



Bid: 100 GBP

Kitchen Units - 1 Victoria S...  
Kitchen cabinets and worktops

Time Left: 9d 15h 31m 32s



Bid: 100 GBP

Bathroom Items - 1 Victoria...  
Sinks, WCs and hand dryers.

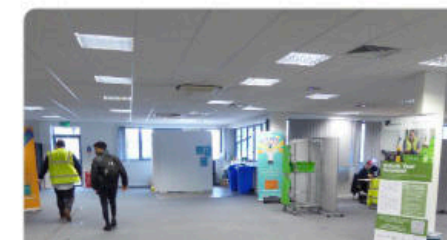
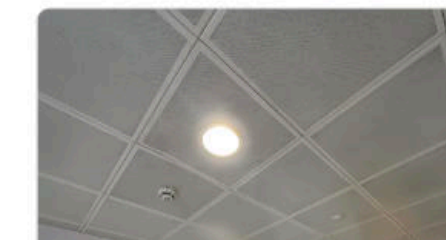
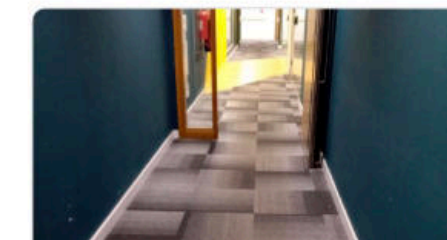
Time Left: 9d 15h 31m 32s



Bid: 100 GBP

Doors - 1 Victoria Street  
Timber office, conference suite an...

Time Left: 9d 15h 31m 32s



# Regeneration

**Enfield Council's £6bn  
regeneration scheme over 25  
years**



# The Business case for reuse: The Drumsheds

## Options for reuse identified and quantified:

- 4 recipient projects identified
- Remaining steel to be sold to Steel Re-manufacturer

tonnes of embodied carbon

# 464

Potential savings from steel reuse

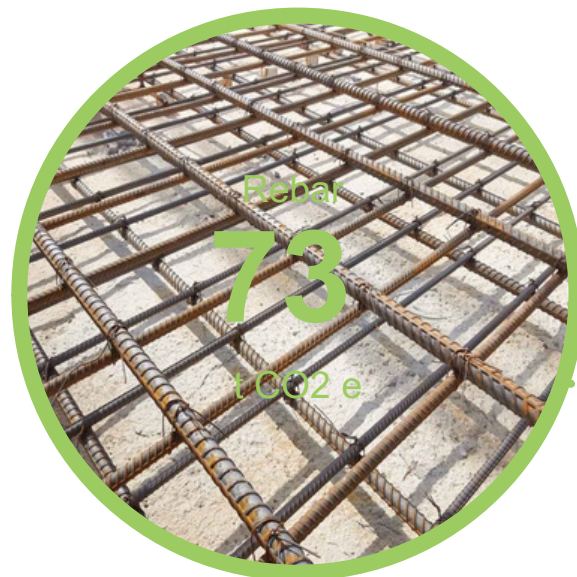
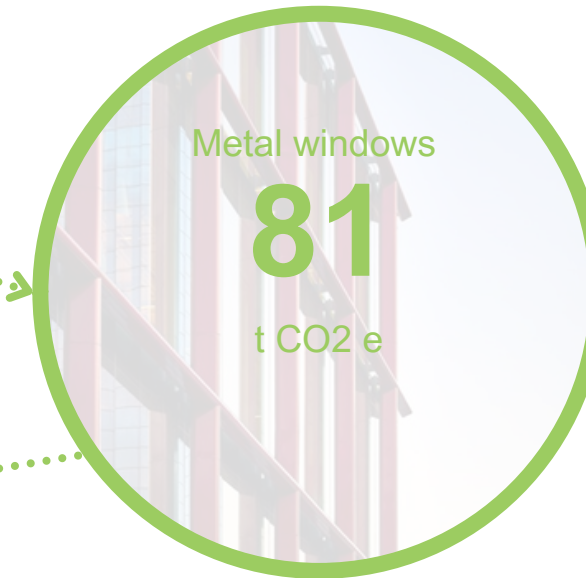
# £113k

carbon offsetting cost benefit  
(at £245/tCO<sub>2</sub>)

S.W.L. 20 TONNES  
1987 No.6695



# Key reusable products and materials (by embodied carbon)



Reclaimed Materials	Material quantity	Embodied Carbon (KgCo2e)
Block F - Existing		
Bricks (m3)	240.35	96000
Concrete frame (m3)	349.98	154000
Concrete slab (m3)	510.67	163000
Re-bar (m3)	43.0325	73000
Aluminium frames (m3)	9.2	81000
Glass (m2)	307.23	13000



# Brick façades – Harbet Road

- **Option 1** – Retain insitu to maintain original features and character.
- **Option 2** – Reuse or repurpose bricks within new scheme (depending on dismantled condition)
- **Option 3** – Sell through (EME) market place to deliver social, environmental and economic benefit to other projects



Minimal CO2  
High value



Low value  
High CO2



# Airports (Tulips project)

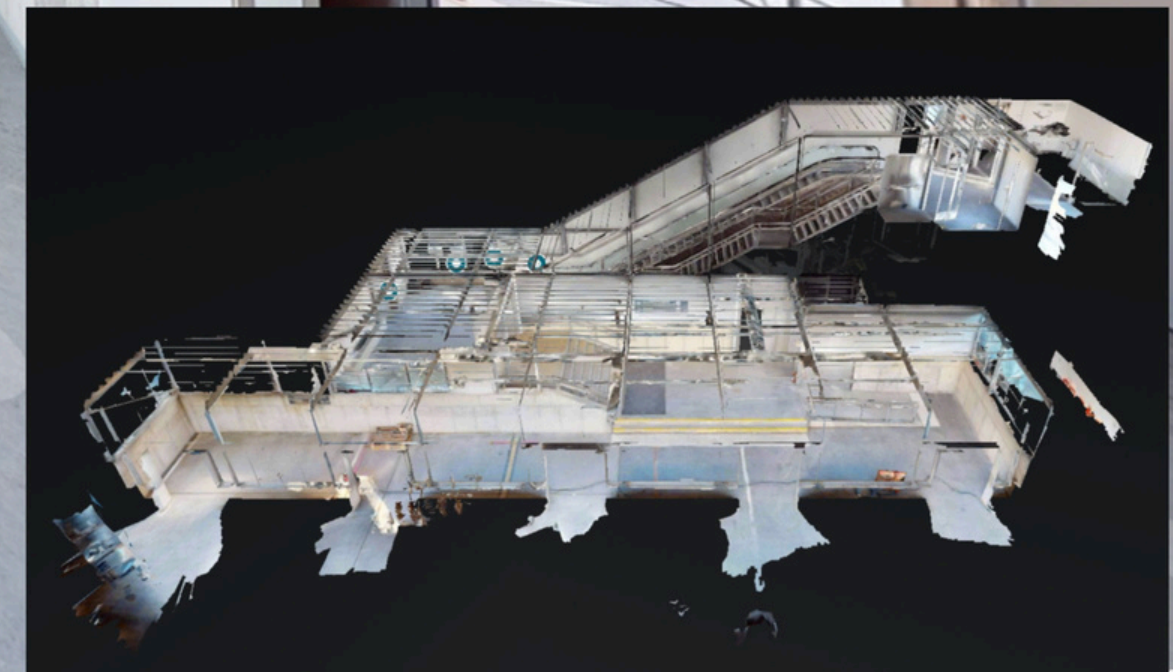
- Pre-demolition audits
- Inventorisation & relocation
- QR codes
- Track and trace

AVINOR  
OSLO AIRPORT

TULIPS

Grey mild steel door and door frame

[Open passport](#)



# Offices

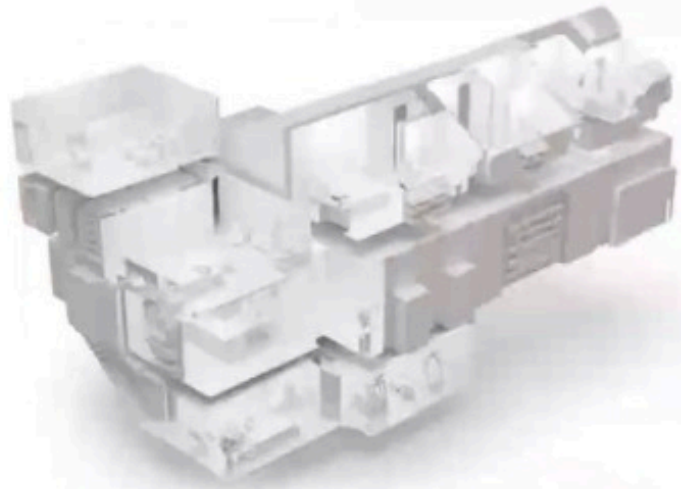
- Pre-demolition audits
- Strip out contracts
- Digital Product Passports
- Open days

3XN  
GXN

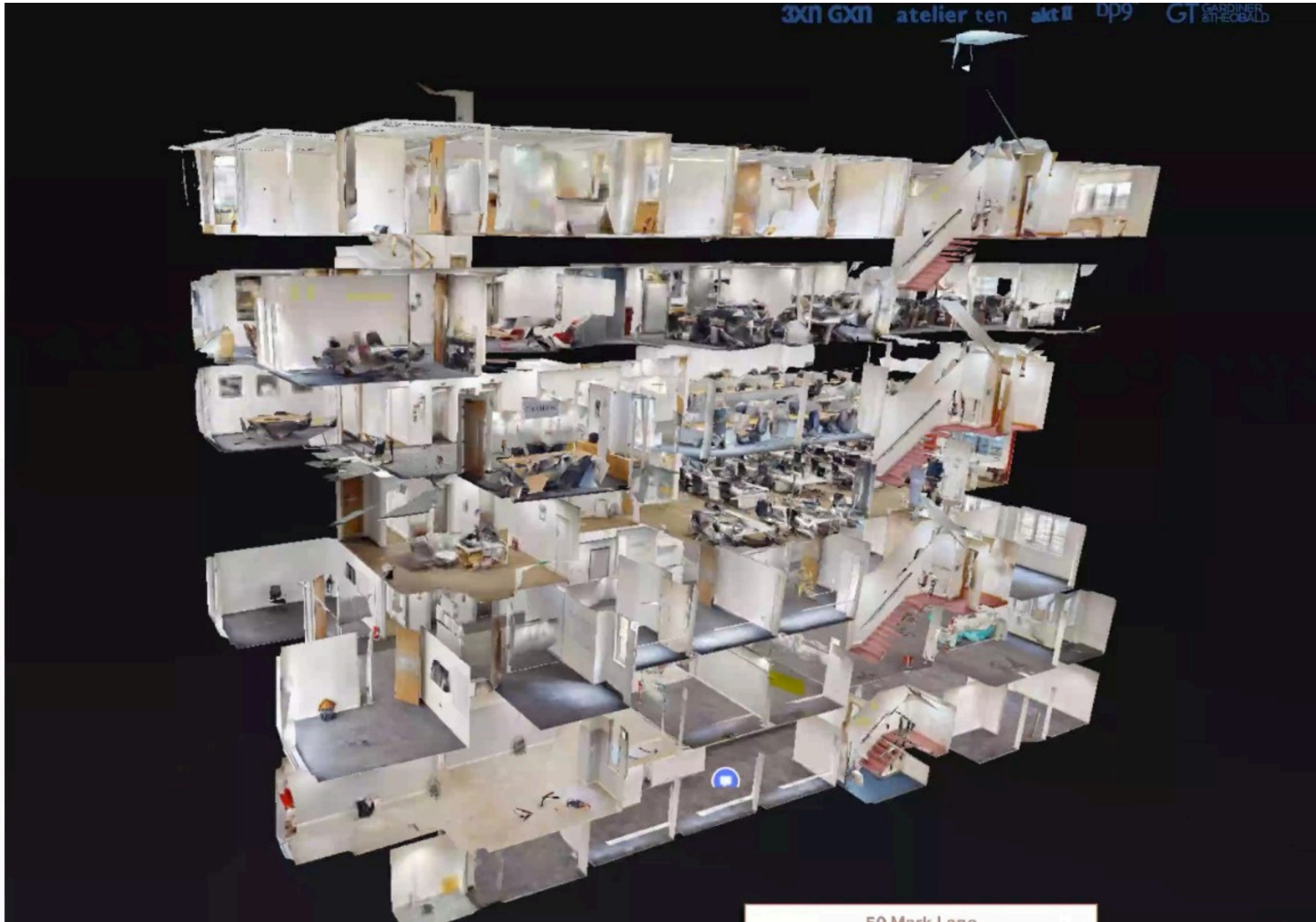
Hobart Partners

John F Hunt

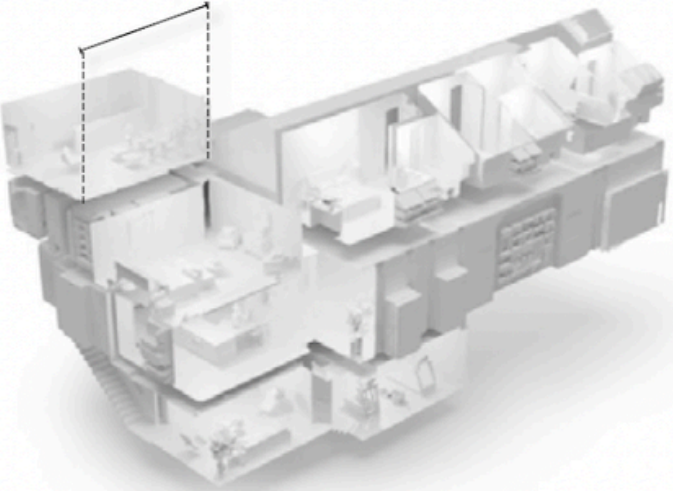




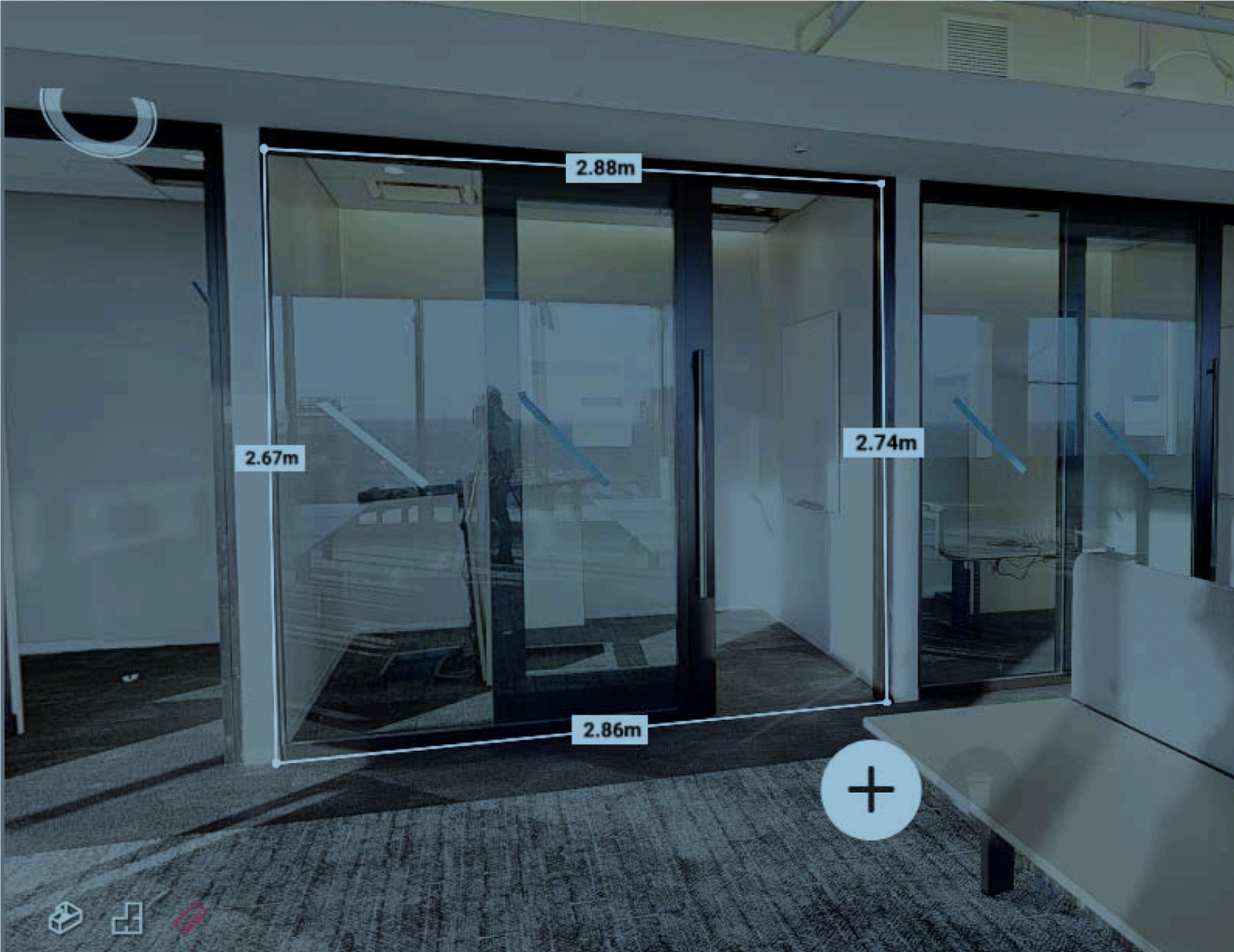
3D building scan



Real Time measures



Real time measures



# Key Reusable Products

Analysis from Reusefully & Site Visit



## Furnitures & Appliances



- 166 x **Desk Chairs** (various colours)
- 126 x **Conference Chairs** (various colours)
- 174 x **Desks** (various colours and sizes)
- 144 x **Filing cabinets** (various colours and sizes)
- **Dishwashers, fridges, cookers**



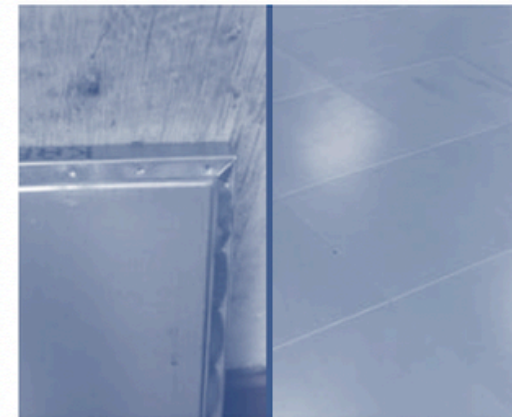
## Ceiling Tiles



- Volume: **17.24 m<sup>3</sup>**
- Surface: **9580 m<sup>2</sup>**
- Weight: **134.1 tonnes**
- CO<sub>2</sub>e saved: **266.8 tonnes**



## Raised Access Flooring



- Volume: **294.8 m<sup>3</sup>**
- Surface: **9580 m<sup>2</sup>**
- Weight: **261.4 tonnes**
- CO<sub>2</sub>e saved: **180.35 tonnes**



## Carpet Tiles



- Volume: **56.3 m<sup>3</sup>**
- Surface: **11263 m<sup>2</sup>**
- Weight: **45 tonnes**
- CO<sub>2</sub>e saved: **110.39 tonnes**



## Doors



- Volume: **55,7 m<sup>3</sup>**
- Weight: **22,3 tonnes**
- CO<sub>2</sub>e saved: **5,9 tonnes**
- Large number of doors varying sizes and typology.
- Assumed to be softwood but likely include hardwood also



# Railroad to construction

## Bicycle shed in Eindhoven Central Station (NL)

A circular bicycle shed is planned for the Central train station of Eindhoven. Among other things, used railroad tracks will be used as load bearing columns. Using used railroad tracks results in a CO<sub>2</sub> emission reduction for those columns of 80%.



# Wind mill blades to playgrounds



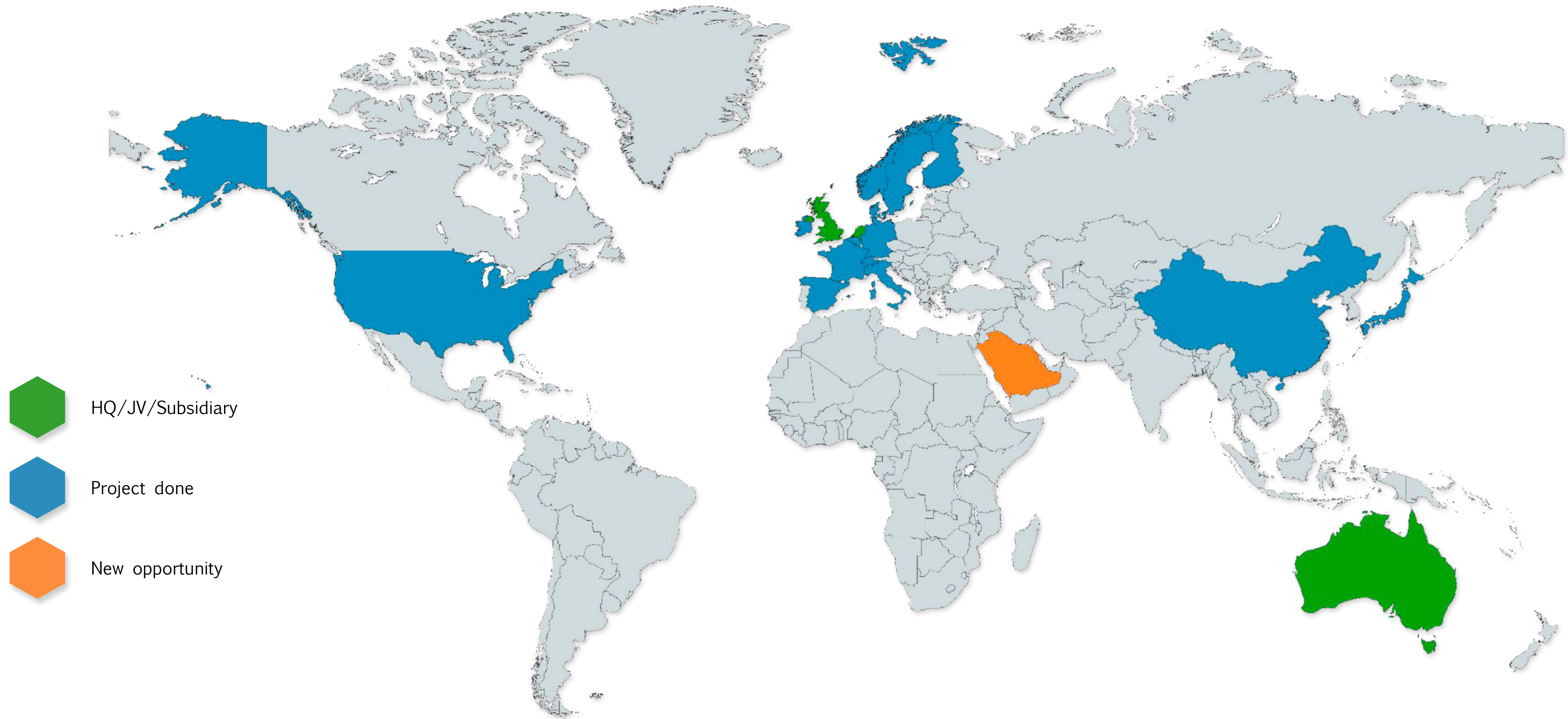
# Window frames as office portioning



# Awards & Nominations



# Global presence



-  HQ/JV/Subsidiary
-  Project done
-  New opportunity







“The circular economy seems to be stuck in the future.”

**EME puts  
it to work.  
Today.**

