WASTE MANAGEMENT / CIRCULAR ECONOMY

Alan Cawley
Sustainability Manager – Ireland and Europe

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Outline

- Our company objectives and targets
- Why is waste important to Sisk
- Sisk Waste 6 Programme
- Circular economy
- Case studies

Our Business

Fifth generation leading the family business into its third century – 162 year pedigree

John SISK

John V SISK

John G SISK

George H SISK

JP SISK
Director

Owen SISK
Director

Richard SISK
Director

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Objectives and Targets

2030 Sustainability Roadmap

- Our 2030 Sustainability Roadmap reflects our company's role and purpose and what we must do to tackle important sustainability issues and where we can have significant influence and impact.
- Our 2030 Sustainability Roadmap
  Themes focus on five key areas, with 21 targets:
  - Caring for the Environment
  - Tackling Climate Change and Air Pollution
  - Embracing Innovation and Digital Technology
  - Enhancing Communities
  - Leading on Responsible Business Practices

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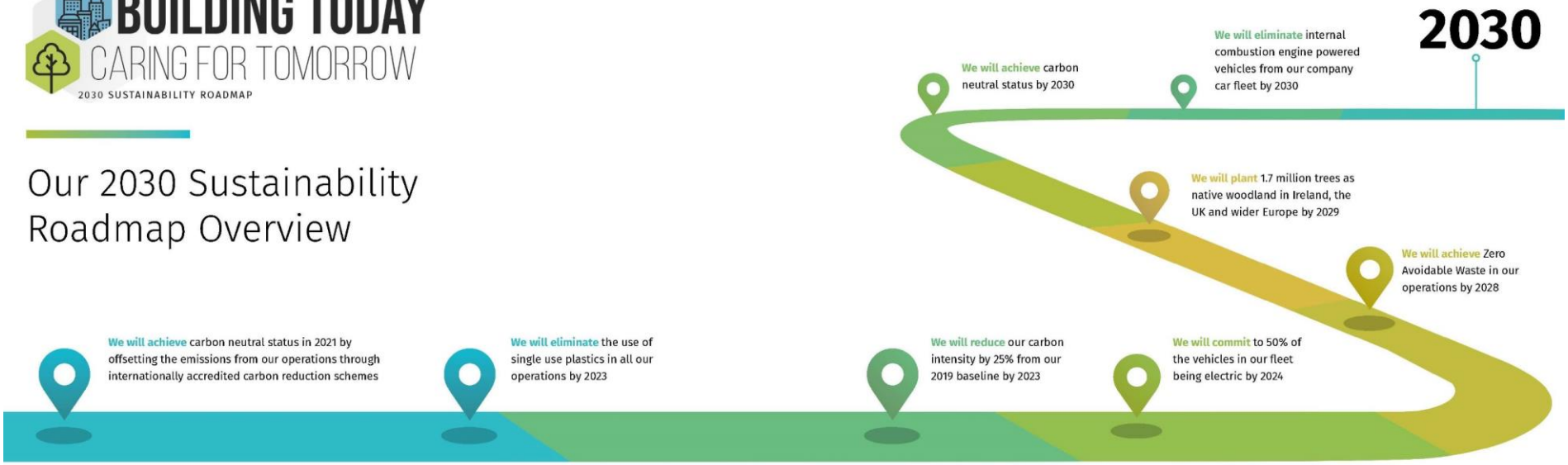
2030 Sustainability Roadmap

BUILDING TODAY
CARING FOR TOMORROW
2030 SUSTAINABILITY ROADMAP

Our 2030 Sustainability Roadmap Overview



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Objectives and Targets

04 Supply Chain, Packaging & Waste

Targets

11 We will reduce our waste intensity by 50%, when measured against our 2019 baseline, by 2025

12 All operations will be undertaken with Zero Avoidable Waste by 2028

13 We will eliminate the use of single use plastics in all our operations by 2023

14 We will successfully embed circular economy principles into strategic business planning by 2023

18 We will successfully embed the ISO 20400 Sustainable Procurement principles into our way of working by 2022

Themes

Sponsors

DONAL MCCARTHY

MARK MCGREEVY

11	We will reduce our waste intensity by 50%, when measured against our 2019 baseline, by 2025	• By continuing our Waste 6 programme targeting the 6 largest waste streams generated by Sisk. • Through elimination of single use plastics in all operations. • By successfully embedding circular economy principles in strategic business planning. • By increasing the use of modern methods of construction and lean construction methodologies.
12	All operations will be undertaken with Zero Avoidable Waste by 2028	• By working with a supply chain with aligned values. • Through embedding Zero Avoidable Waste principles at design and considering deconstruction, where we have the opportunity to influence decisions. • Through our Waste 6 Programme targeting the 6 largest waste streams generated by Sisk. • By eliminating our use of single use plastics in all operations. • By successfully embedding circular economy principles in strategic business planning. • Where waste is unavoidable it will be recovered at the highest possible level of the waste hierarchy.
13	We will eliminate the use of single use plastics in all our operations by 2023	• By appointing a 'Single Use Plastics Working Group' from within Sisk and our supply chain. • By developing a business transformation guide to work with our supply chain partners to eliminate SUPs. • By identifying SUPs, building a plan, and implementing change to meet the 2023 commitment.
14	We will successfully embed circular economy principles into strategic business planning by 2023	• By reviewing and adopting appropriate tools and systems to assess and embed circularity into Sisk operations. • Through assessing the current level of circularity in Sisk operations and re-assessing throughout the process. • By identifying and implementing opportunities to improve circularity e.g. through designing out waste, keeping materials/ products in use and generating environmental benefits. • Through collaboration with our clients, the design teams and our supply chain to increase circularity in the products which are specified and procured.

What is waste?

Definition of waste

Article 3(1) Waste Framework Directive:

"'waste' means any substance or object which the holder **discards** or **intends** or is **required** to discard"… " or **otherwise dealt** with as if it were a waste" (Ireland)

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Why is waste important?

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Why is waste important?

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Why is waste important?

Costs based on typical £40 million residential project

Mixed Skips

Mixed C&D	- £274,000
Plasterboard	- £5,500
TOTAL	**- £279,500**

Segregated Skips

Mixed C&D	- £88,000
Plasterboard	- £5,500
Metals	- £2,000
Timber	- £41,000
Inert	- £77,000
TOTAL	**- £213,500**

Cost saving of **£66,000** or **24%**!!!

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Value of the resource lost

The value of the contents of a skip is estimated as £1343

- Skip hire: £85.00
- Labour cost: £163.00
- Unused materials: £1095

Source: WRAP / Amec survey - 2008

Cost of rework - quality

Failure of the bonding of EPDM around windows leading to major leaks to finished apartments

Fitout stripped out and redone

Incorrect movement joint designed causing resin to break

Movement joint replaced with alternative joint

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Waste?

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Waste 6 Programme

Waste 6 Programme

- Identification and classification of waste
- Assess quantities and properties
- Plan the avoidance
- Correctly collect, store and treat the waste
- Follow Duty of Care requirements

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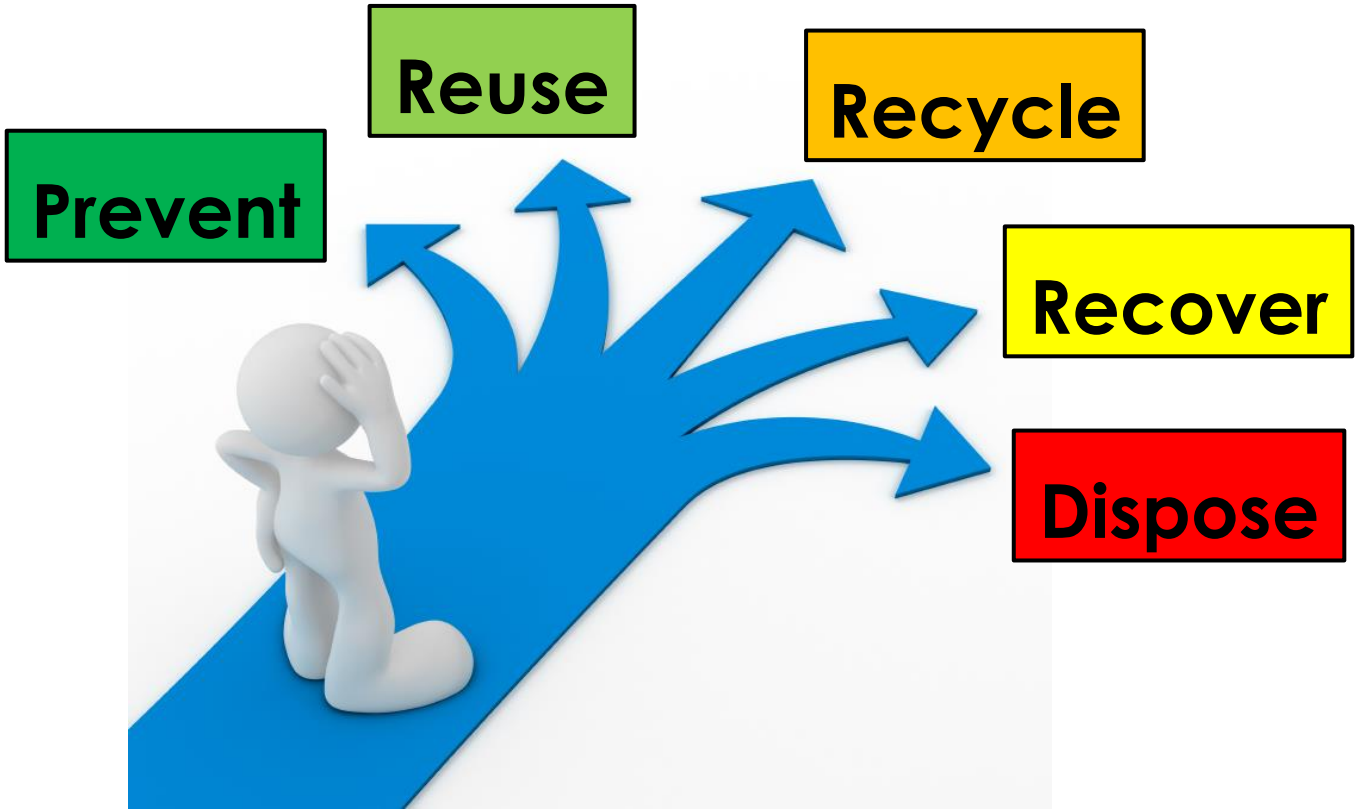
Waste hierarchy

You can apply the Waste Hierarchy when selecting the waste techniques for your project…



W1 Bulk Materials

ONE Bulk Materials

Golden Rule: Ensure quantities are identified prior to commencement and reuse options explored

Reuse
- Reuse soil & stone within development or on other sites
  - Article 27
- Encapsulate hazardous soil and stone within development

Recycle
- Article 11/ Article 28 – Ireland
- Quality Protocols – UK

Recover
- Soil recovery facilities

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Take-back schemes

British Gypsum
SAINT-GOBAIN

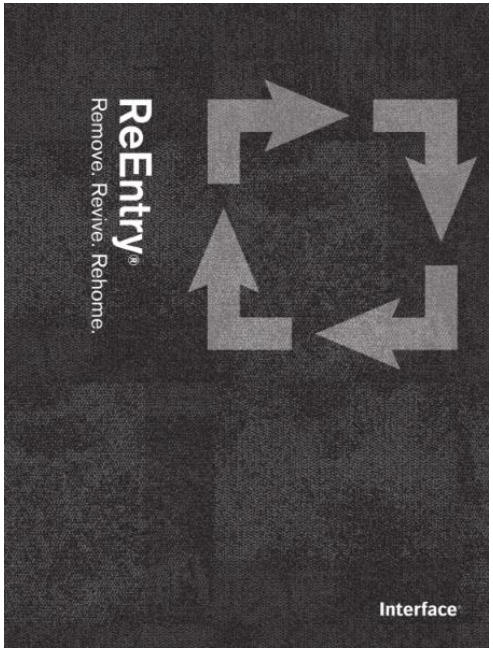
Gyproc
SAINT-GOBAIN

PROTEC
TEMPORARY PROTECTION

Recycle IT
Community Electrical Recycling

Kingspan®

TRACO uk



the pallet loop®

RPS
Returnable Packaging Services

Community RePaint
Proudly sponsored by Dulux

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Circular Economy

What is a circular economy?

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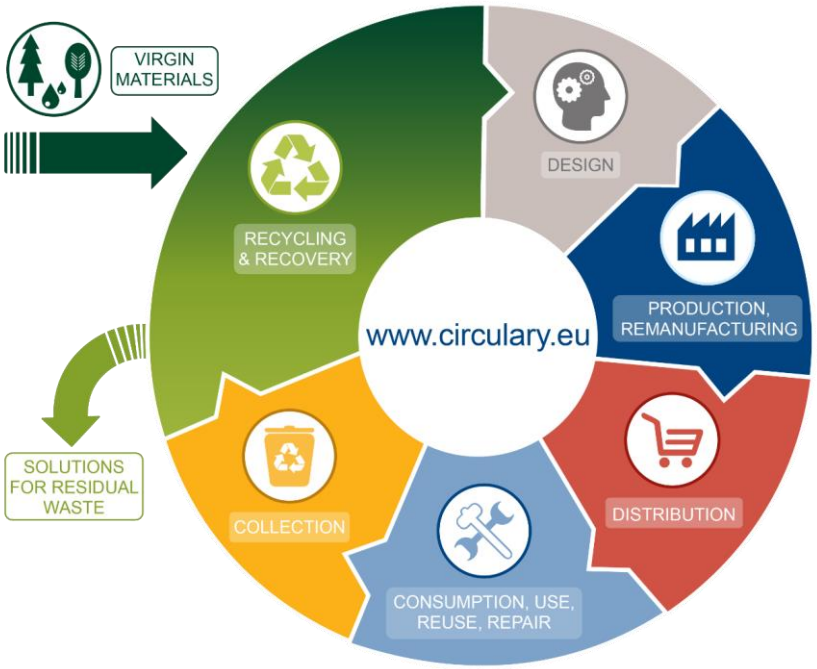
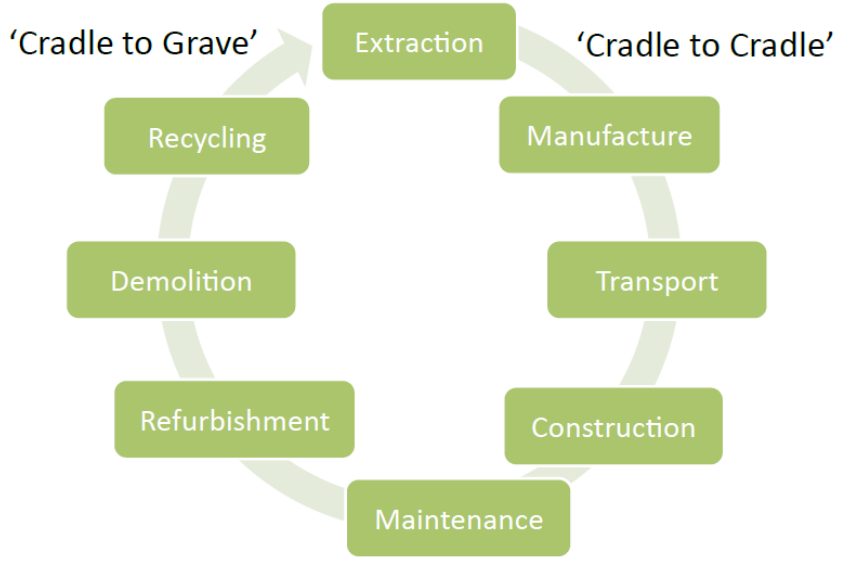
Circular Economy





Life Cycle of a construction product

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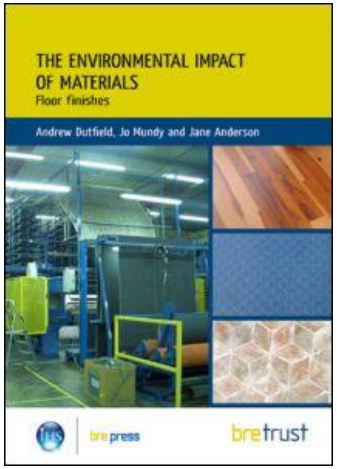
Design Implications

- Selection of Materials
  - Green Guide to Specification
  - PEFC/FCS timber
- Recycled Content
- Responsible Sourcing (BES 6001)
- Environmental Product Declarations
- Lifecycle Assessment – One Click LCA
- Product knowledge (made to measure, precast, availability)
- WRAPS designing out waste (UK)



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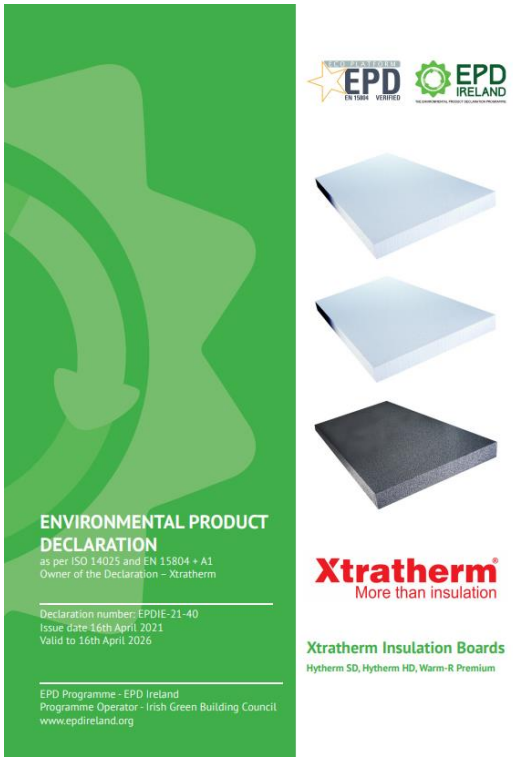
IGBC EPD Campaign

EPD IRELAND
THE ENVIRONMENTAL PRODUCT DECLARATION PROGRAMME

IGBC
GOLD MEMBERSHIP | 2021



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IGBC EPD Campaign

			BDPO - Environmental Product Declarations Credit										
BDPO Line Ref	Material Description	Manufacturer	EPD Available	Program Operator	PCR Stated	Declaration Number	Functional Unit	Certification Vaild when Used	Scope	Third Party Verified	EN15804	ISO 14025	EPD Value
9	Structural Steel: Sections and Plates	CSK	Y	Institut Bauen und Umwelt e.V.	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
10	Steel Decking	CSK	Y	Tata Steel UK Limited	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
12	Ultima + db	Armstrong	Y	Institut Bauen und Umwelt e.V.	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
13	Casoline MF	Gyproc	Y	The International EPD System	Y	Y	Y	Y (review date at use)	Cradle to Gate	Y	Y	Y	1.5
14	Wallboard	Gyproc	Y	The International EPD System	Y	Y	Y	Y	Cradle to Grave	Y	Y	Y	1.5
15	USS External Louvres	Halton	Y	The International EPD System	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
16	Portland Fly Ash Cement CEM II/A-V 42.5 N	Cementa AB	Y	Institut Bauen und Umwelt e.V.	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
17	Portland Fly Ash Cement CEM II/A-V 52.5 N	Cementa AB	Y	Institut Bauen und Umwelt e.V.	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
18	Portland Cement CEM I 42.5 N-SR 3/MH/LA	Cementa AB	Y	Institut Bauen und Umwelt e.V.	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
19	Frost resistant concrete vct 0,40	Snells Betong & Ballast AB	Y	The Norwegian EPD Foundation	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
20	Concrete exposure class XC1 - XC2	Snells Betong & Ballast AB	Y	The Norwegian EPD Foundation	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
21	Frost resistant concrete vct 0,50	Snells Betong & Ballast AB	Y	The Norwegian EPD Foundation	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
22	Steel reinforcement products for concrete	Celsa Steel Service AB	Y	The International EPD System	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
24	Roofing membrane, Icopal Mono PM	Icopal	Y	The International EPD System	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
25	Plywood, Vänerply Prevent	Moelven Vänerply	Y	The Norwegian EPD Foundation	Y	Y	Y	Y	Cradle to Grave	Y	Y	Y	1.5
26	Beams, H400 C30 & H500 C30	Masonite Beams	Y	The Norwegian EPD Foundation	Y	Y	Y	Y (review date at use)	Cradle to Gate	Y	Y	Y	1.5
27	Insulation, regelskiva 035	Isover	Y	The Norwegian EPD Foundation	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
28	Insluation, Stålregel 37	Rockwool	Y	Institut Bauen und Umwelt e.V.	Y	Y	Y	Y	Cradle to Grave	Y	Y	Y	1.5
29	Steel, 1230x0.5 & 1230x0.7	SSAB	Y	The Norwegian EPD Foundation	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
30	Sealant, SikaForce 7736 Part A & SikaForce 7020 Part B, Sikasil-C	Sika	Y	Institut Bauen und Umwelt e.V.	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1
31	Plaster board, GF 15 Protect F	Gyproc	Y	The International EPD System	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
35	Parklex Facade	Parklex Interntional	Y	The International EPD System	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
42	AST S 150	Paroc	Y	The Norwegian EPD Foundation	Y	Y	Y	Y	Cradle to Grave	Y	Y	Y	1.5
43	Firemaster Extra 100 mm	Eurobond	Y	Tata Steel UK Limited	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5
44	Firemaster Extra Perforated 100 mm	Eurobond	Y	Tata Steel UK Limited	Y	Y	Y	Y	Cradle to Gate	Y	Y	Y	1.5

Designing Out Waste

There are five principles:

1) Design for Reuse and recovery
2) Design for Off Site Construction
3) Design for Materials Optimisation
4) Design for Waste Efficiency Procurement
5) Design for Deconstruction and Flexibility

Blockwork

Interconnecting block work reduced in final design

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Reuse of materials

Certified timber

Reusing topsoil

Reclaimed bricks

Recycled aggregate

Use of Recycled Materials

50% GGBS used in concrete

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Use of Recycled Materials / Recycling

amvic building system

Insulated Concrete Forms

Gyproc SAINT-GOBAIN

Plasterboard

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Offsite construction

VISIONBUILT
BUILDING THE FUTURE. OFFSITE.

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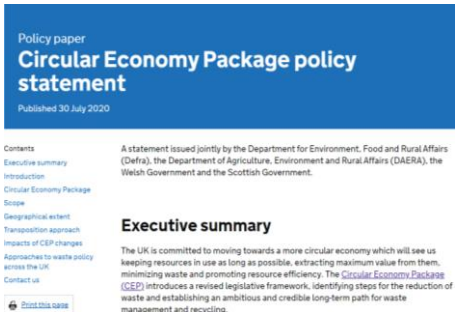
Legislation & guidance

Legislation



Guidance

Case studies

One Wilton - Dublin

- Using GGBS as a cement substitute has allowed us to reduce the embodied carbon by 33% as opposed to just using ordinary cement in the mix.
- This resulted in a reduction in 1486 tonnes of CO2e.

3,734,612
Miles driven by an average passenger vehicle

179
homes' energy use for one year

180,760,973
number of smartphones charged

3,440
barrels of oil consumed

Northwest Lands - UK

Construction of:

- 475 residential units in seven blocks varying between seven and sixteen storeys in height
- large central gardens encompassing a pond, woodland and lawns
- 151 Car parking

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Precast and Modular – Rathbone Market London

Design and construction of a major new build residential development providing 271 mixed tenure homes. The project comprises four residential buildings; one 21 storey, one 12 storey, one 8 storey and one 6 storey, ground floor retail units, basement car park and a landscaped garden

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Precast and Modular – Rathbone Market London

This project incorporated the most effective MMC elements available in the market to guarantee quality of finishes and improve efficiency and speed of construction process. These include:

- Unitized Curtain Walling
- Bolt on balconies
- Bathroom and shower room pods
- Permanent shuttering stairs
- Sustainable construction technologies include a green roof and rainwater harvesting

Thank you.