Lighting solutions to meet your sustainability ambitions

Our industry leading approach to sustainable excellence.

Enlightened solutions

We know that our impacts become your impacts.

That your sustainability objectives can only be met if your partners and suppliers are committed to setting, meeting and surpassing their own targets.

This is especially relevant for lighting today, as 78% of the impact of our products will be incurred long after they leave our gates. But, this is a figure that's changing fast.

Alongside the decarbonisation of the grid, our design and manufacturing choices are continually driving down the amount of energy it takes to light a space well.

Because we know that when we do better, you do better.

Sustainability is a way of life for us

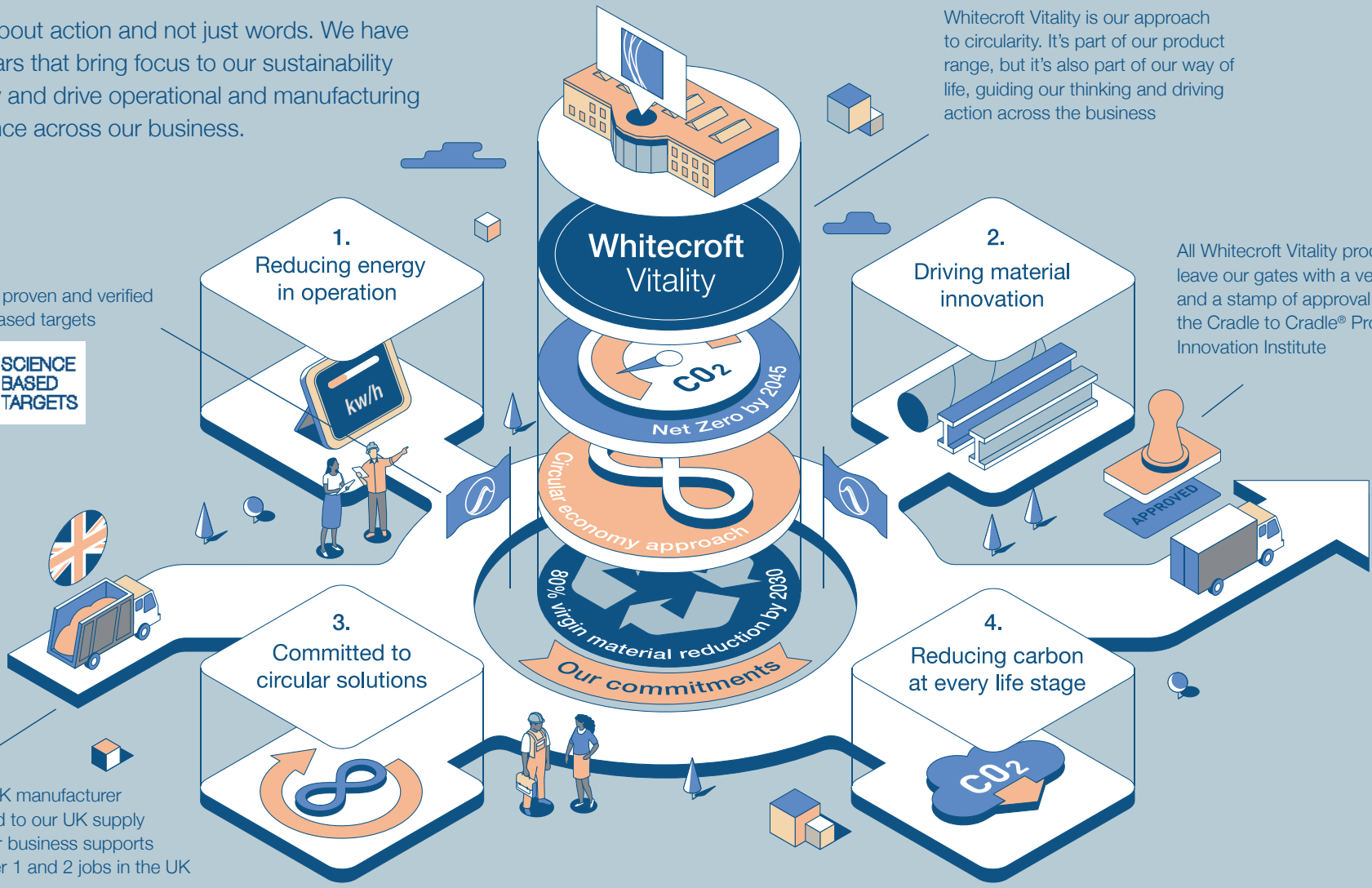
We're about action and not just words. We have four pillars that bring focus to our sustainability strategy and drive operational and manufacturing excellence across our business.

Whitecroft Vitality is our approach to circularity. It's part of our product range, but it's also part of our way of life, guiding our thinking and driving action across the business

We follow proven and verified science based targets

SCIENCE BASED TARGETS

All Whitecroft Vitality products leave our gates with a verified EPD and a stamp of approval from the Cradle to Cradle® Product Innovation Institute



We're a UK manufacturer committed to our UK supply chain. Our business supports 6,000+ tier 1 and 2 jobs in the UK

1. Reducing energy in operation

Every industry is facing the challenge of achieving Net Zero. Switching to a renewable supply is a good start, but reducing the energy we use in the first place is an even better start.

At Whitecroft, we are continually driving down the cost of lighting a space. While the traditional metric of luminaire lumens per watt (llm/W) tells us how efficient a product is, this 'design-for-compliance' approach can result in a significant gap between how well a product is capable of performing and how it performs when used — known as the 'Performance Gap'. For us, it is about going beyond compliance to performance excellence.

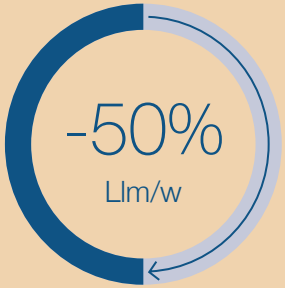
As the UK fluorescent lamp phase out continues, it presents British businesses with a forced but timely opportunity to consider the long-term energy cost, efficiency, and quality of their lighting.

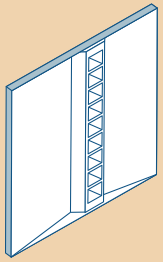
The importance of people and light quality

With people projected to be 90% of a building's cost over its lifetime, a recent study by the International WELL Building Institute has shown the significant financial benefits of investing in design that promotes health and well-being. For lighting, this goes beyond simply providing sufficient illumination on a horizontal plane, it must consider multiple aspects such as glare, uniformity, surface illumination, communication, colour, quantity, flexibility, functionality, controllability and adaptability.

Get it right and a lighting solution has the ability to inspire, motivate and increase productivity.

Right product



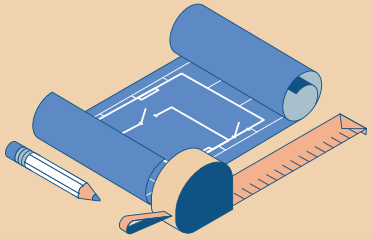


Highly efficient luminaires

Using the latest LED technology, careful optical design and superior thermal management, our products create comfortable spaces while offering an **energy reduction of up to 50%.**

Our Cascade Flex product family offers an efficacy > 130llm/W and is one of the best performing office compliant recessed modular luminaires on the market.

Right place

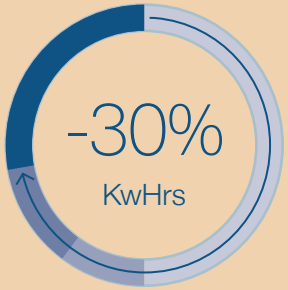


Optimised lighting design

By selecting products with the best lighting distribution for the application, we reduce installation points to deliver an additional **energy saving of up to 20%.**

These benefits of course can only be realised if light quality is maintained. Our designs maximise visual interest and comfort for the user, while meeting all of the relevant compliance standards.

Right time



Effective lighting controls

By ensuring no luminaire is ever on when it doesn't need to be, we help to **reduce energy by a further 30%.**

Organic Response® node-to-node communication quickly responds to changes in the space layout and use, creating agile, engaging and efficient environments.

2. Driving material innovation

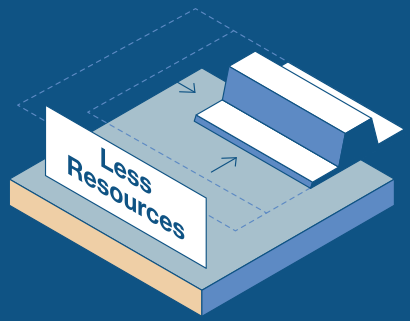
The extraction of virgin materials not only depletes valuable natural resources, in many cases it is also far more carbon intensive than using recycled content. At Whitecroft, we've set ourselves an ambitious target to reduce our use of virgin materials by 80% by 2030*.

We are also constantly challenging ourselves to reduce the embodied carbon within our products through intelligent design and careful material selection.

And when you choose Whitecroft, our carbon reduction, becomes your carbon reduction.

*Compared with 2021 values.

Miniaturisation

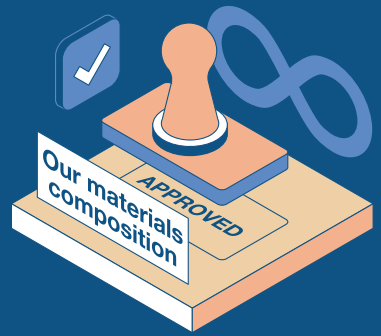


We're using fewer resources by making our products lighter, simpler and modular.

Recycled content

We're increasing our use of recycled content year on year to help meet our target of an 80% reduction in our use of virgin materials by 2030.

Transparency



We understand our materials composition by seeking verification against the Cradle to Cradle® Restricted Substances List (RSL).

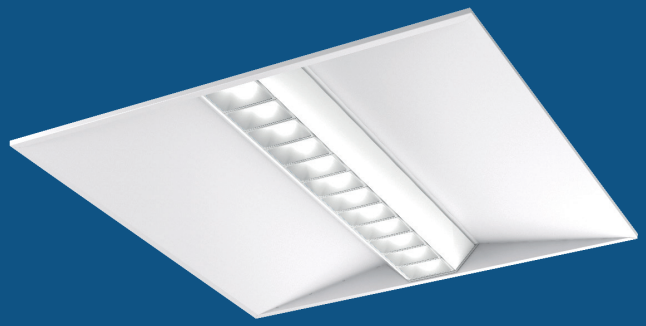
Flight

70% Less
Plastics

30% Less
Cardboard

82% Less
Steel

35% Less
Electronics



Cascade Flex

102
Plastic bottles to make a flat panel

34
Plastic bottles to make a Cascade Flex

For example, a school using
600
Products

→ Equates to a reduction of
40,800
Plastic bottles

Selene 2

25% Less
Embodied carbon*

100%
Pre-consumer recycled waste plastic end caps

Double sided light engine

40% Less
FR4 material

*Based on TM65

3. Committed to circular solutions

The circular economy envisions a world where every product is made with its entire life cycle in mind. It begins with design, then manufacture, usage, then finally end of life.

The aim is that the resources used in a product can go round and round in infinite circles, reducing waste and use of virgin materials.

While it starts with a focus on design and innovation, it requires a mindset shift for the whole business and the adoption of new practices, across every aspect of the product life cycle.

At Whitecroft, circularity is a primary focus. The Cradle to Cradle® Product Innovation Institute, the internationally recognised assessment body of circular solutions, has already certified our Whitecroft Vitality range, and we're increasing our commitment to their principles every day.

Whitecroft Vitality

Market-leading sustainable solutions

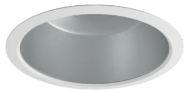
Cascade Flex Vitality

Avenue Metro Vitality

Flight Vitality

Trimpak Vitality

Mirage 3 Vitality



Selene 2 Vitality

Horizon 360 Vitality

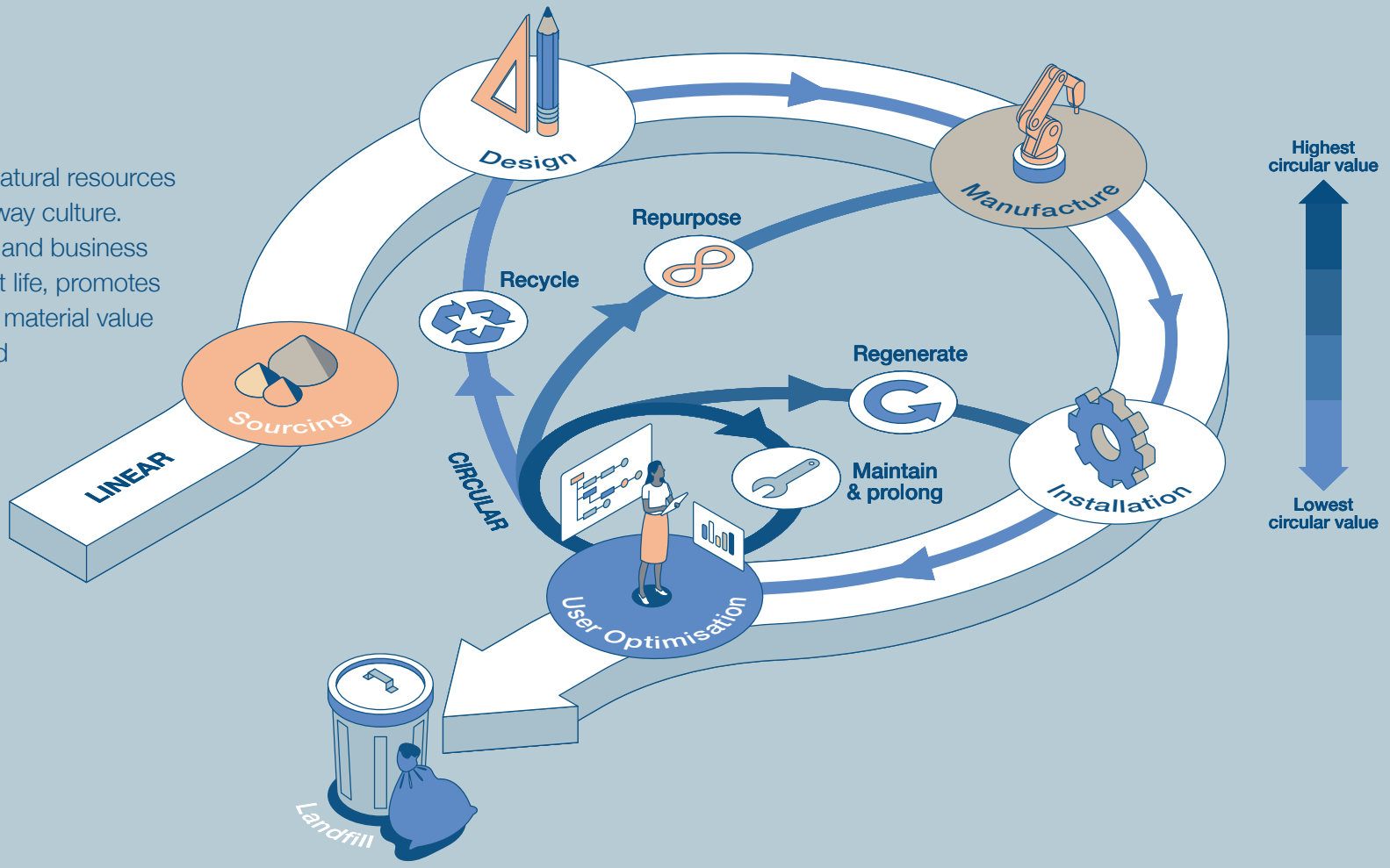
ACL Industry Vitality

All Whitecroft Vitality products as standard come complete with:

- Third party Cradle to Cradle® Certification and Type 3 EPDs
- E-light & DALI for highest efficacy and control
- Lithium battery technology
- Lowest whole life carbon footprint (operational and embedded)
- Material Health Certificates & Passports

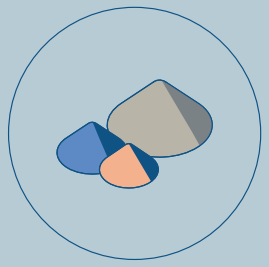
Linear vs. circular

Linear design plunders natural resources and promotes a throw away culture. Adopting circular design and business models prolongs product life, promotes regeneration, maximises material value and reduces our demand on virgin materials.



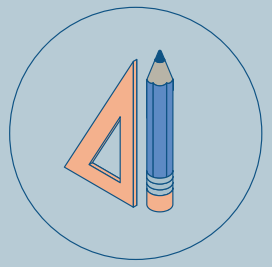
Designed for circularity

How we apply circular design and processes at every stage of production.



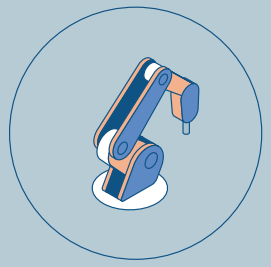
1. Sourcing

Our ambition is to reduce our use of virgin materials by 80% by 2030. We also source from UK suppliers, reducing transportation emissions.



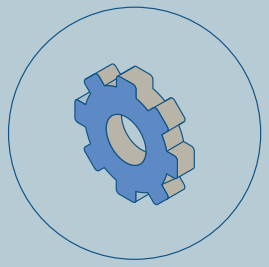
2. Design

By reducing the size and weight of our products, we're able to further reduce materials. By making our products using durable, modular and replaceable components, we're designing in the ability to maintain and regenerate them, prolonging life and designing out waste.



3. Manufacture

We use renewable energy to power our operations. We also use a UK based supplier network meaning our deliveries keep their carbon footprint down.



4. Installation

Getting your w/m^2 as low as possible while maintaining comfort, interest and compliance, is crucial. Our creative application designers ensure the right placement of our products for maximum energy saving.

5. User Optimisation

Our cutting-edge lighting controls ensure no luminaire is ever on unless it needs to be. Monitoring luminaire performance effectively in this way can make a saving on your energy usage of up to 30%.

4. Reducing carbon at every life stage

Reducing energy usage and switching to renewable sources reduces the carbon impact of a product in operation. But that doesn't account for the impact a product has during manufacture (known as embodied carbon), or the carbon impacts of disposal at end of life.

At Whitecroft, we're modelling the entire life cycle of our products and we're innovating to reduce carbon at every stage using One Click LCA.

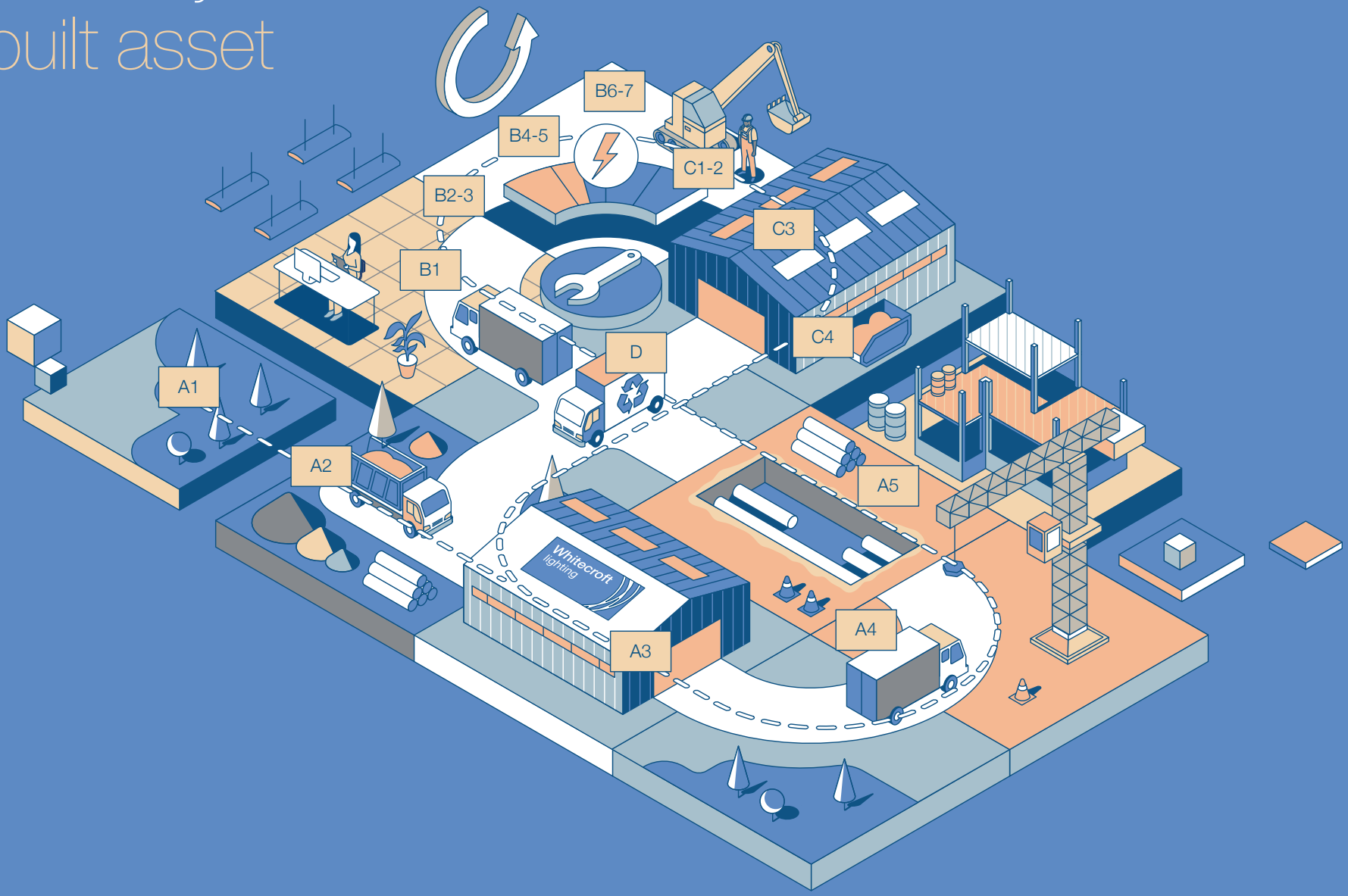
One Click LCA

The #1 LCA software for calculating environmental impact and helps to identify opportunities for further reduction in products and buildings.

Module		Stage
Raw Materials	A1	Product
Transport	A2	
Manufacturing	A3	
Transport	A4	Assembly
Assembly	A5	
Use	B1	Use
Maintenance	B2	
Repair	B3	
Replacement	B4	
Refurbishment	B5	
Operational energy use	B6	
Operational water use	B7	
Deconstr. & demoltion	C1	End of life
Transport	C2	
Waste processing	C3	
Disposal	C4	
Reuse		Beyond the system boundaries
Recovery	D	
Recycle		

Information for a life cycle assessment (LCA) as defined by BS EN 15978:2011

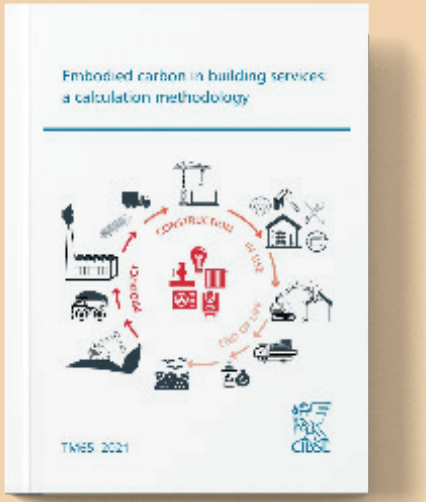
The life cycle of a built asset



Whitecroft and life cycle assessment

We're committed to complete transparency when it comes to the impacts of our products. In doing so, we constantly challenge ourselves to improve, as well as supporting our customers in achieving their sustainability ambitions.

Our Whitecroft Vitality products come with Type 3 LCAs in the form of independently verified EPDs.



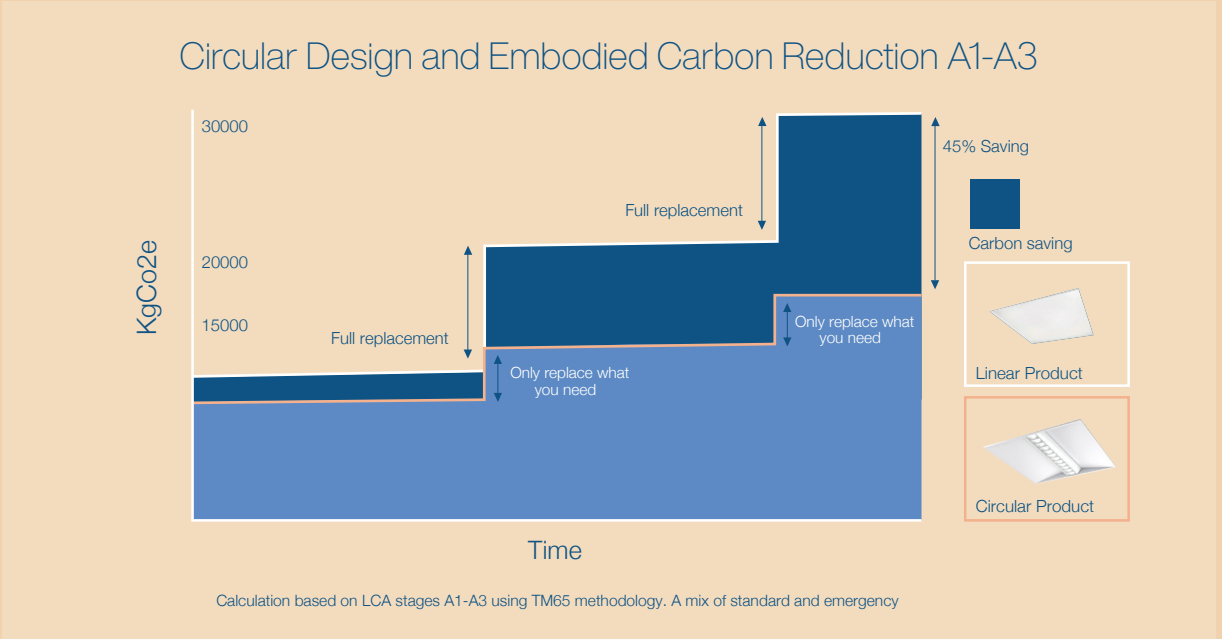
All our standard products come with Type 2 LCAs in line with TM65.

The circular economy and carbon reduction

The built environment contributes up to 25% of the UK's total carbon emissions. To make a significant reduction to that figure, we need to think differently. We need transformative change. Increasingly the adoption of the circular economy is seen as key to supporting this change.

The 2022 Circularity Gap Report highlighted that through the adoption of the Circular economy, embodied carbon could be reduced by up to 39%.

The graph below compares the embodied carbon of a flat panel designed in a linear way and our Cascade Flex that has been designed and maintained in a circular way.



Calculation based on LCA stages A1-A3 using TM65 methodology. A mix of standard and emergency

CASE STUDY

Vitality Relight at Southmead Hospital

Bespoke circular lighting solution saves client time and money

Southmead Hospital's facilities managers Bouygues approached Whitecroft Lighting to upgrade large areas of hospital corridor lighting and the emergency lighting system. The client was seeking a solution that reduced energy use whilst being in compliance with healthcare environment regulations, as well as being able to withstand regular cleaning with anti-bacterial cleaning chemicals. It also needed to take into account aesthetics and the required lighting levels and glare rating. Whitecroft's design team quickly assessed the lighting in-situ and designed a bespoke replacement LED gear tray mounted with emergency lighting, that worked with as much of the existing infrastructure as possible. Whitecroft also custom built a secondary diffuser to sit behind the polycarbonate body to diffuse glare from the LEDs.

Cut down on waste materials by 80%

This circular product was used to update all 245 luminaires, with an ongoing project to roll out approximately 6000 luminaires over time. The solution is connected by a simple plug and socket making it quick to install therefore minimising disruption and saving the client time and money. The solution cut down on waste materials by 80%, and halved the operating power from 60W to 27W, increasing the operational energy efficiency by 55%, as well as offering a quick approach for changing the LEDs. Importantly, the new lighting also met with the required healthcare regulations and was able to withstand the rigorous cleaning schedules.

6,000

Retrofitted gear trays

80%

Reduction in waste materials

55%

Energy reduction

CASE STUDY

Manchester Town Hall

Circular economy retrofit supports the plan to make Manchester a zero-carbon city by 2038

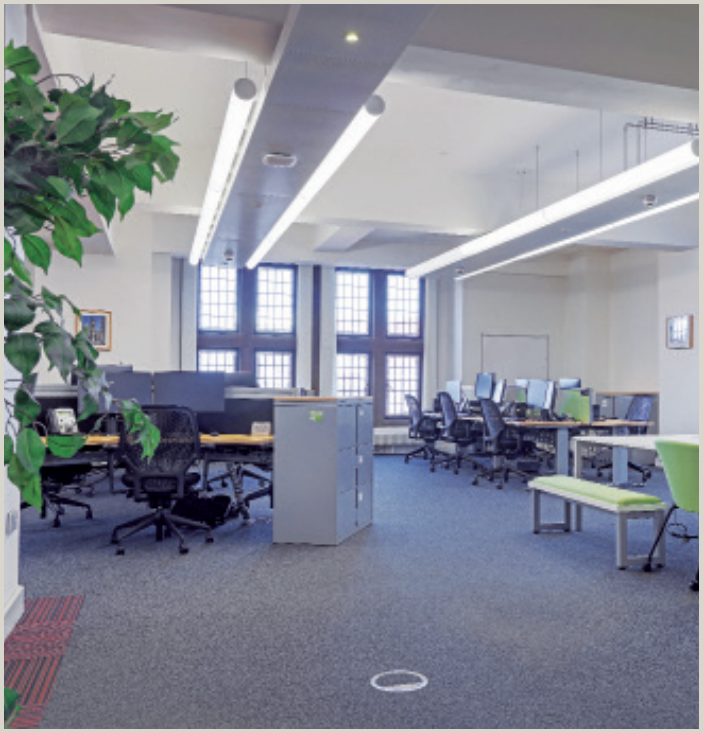
Manchester City Council has set the ambitious goal of achieving carbon neutrality by 2038, and has begun a six year programme of activity to decarbonise its estate of buildings. The iconic Manchester Town Hall was one of the first buildings to undergo a transformation, and Whitecroft was selected to supply the lighting, having previously installed bespoke luminaires.

Whitecroft's brief was to balance the council's environmental targets with the need for high quality lighting and aesthetics fit for the neo-gothic surroundings.

Drawing on principles of circular product design, which seeks to reduce the whole life carbon of lighting by prioritising reuse and replacement, Whitecroft identified a lighting solution that minimised the use of materials whilst increasing ongoing operational efficiency.

Annual energy saving in excess of 44%

Whitecroft upgraded the building's Raft T5 Fluorescent lighting system, fitting 2,350 modular LED gear trays into the Raft. Upgrading rather than replacing the Raft lighting reduced waste by 70%, whilst improved lighting controls have reduced energy output — from 134kW to 75kW. Manchester Town Hall's upgraded lighting is projected to make energy savings in excess of 44%, reducing carbon emissions by approximately 38 tonnes CO_2/year, whilst extending the life cycle of the luminaires and facilitating future energy savings. Whitecroft is set to use similar principles to upgrade the lighting in two further Manchester City Council buildings.



38

Tonnes of CO_2 saved per year

44%

Energy reduction

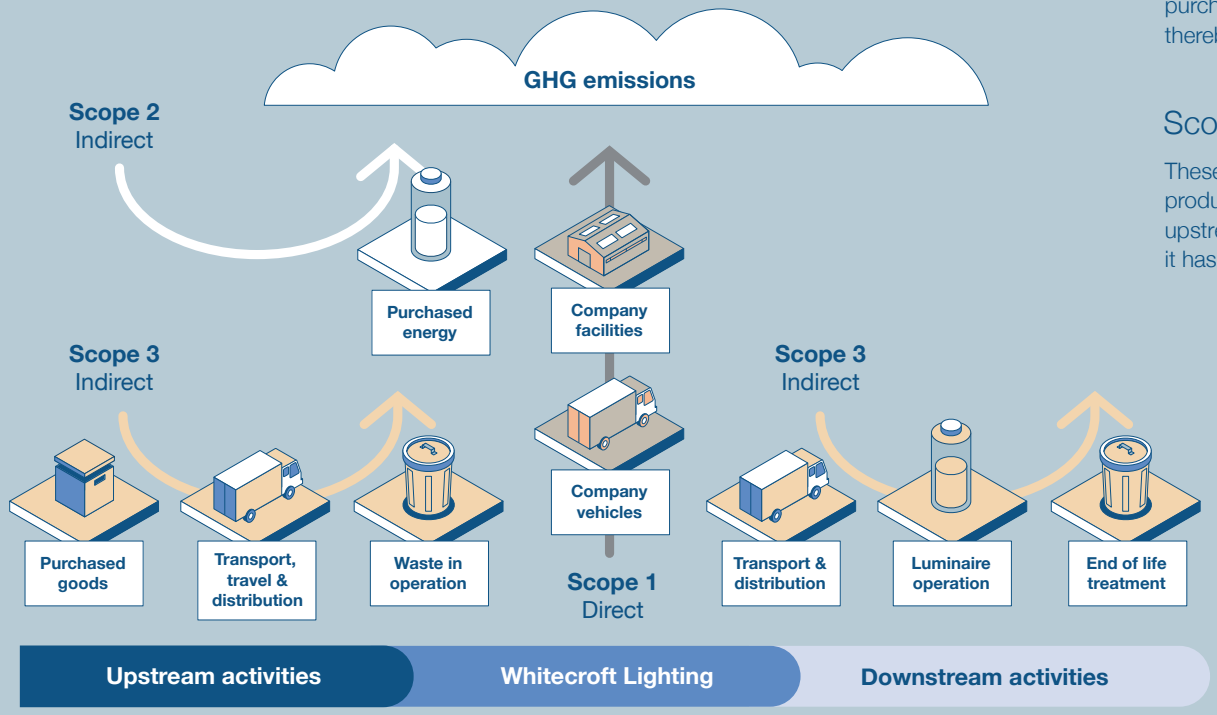
2,350

Retrofitted LED gear trays

Glossary

Measuring green house gas emissions

The greenhouse gas (GHG) emissions that an organisation emits are categorised into three scopes in terms of reporting and accounting.



Scope 1 emissions

These emissions refer to the emissions that arise from the direct use of fossil fuels controlled by a business.

Scope 2 emissions

This scope refers to indirect GHG emissions arising from purchased electricity by a business in its operations and thereby outside of its direct control.

Scope 3 emissions

These emissions relate to all other GHG emissions that are produced due to the business activities. These occur both upstream and downstream and occur due to activities that it has no direct ownership or control over.

Fagerhult Group targets

In 2022, the Fagerhult Group mapped all our greenhouse gas emissions for our entire operations based on scope 1, 2 and 3 from the Greenhouse Gas (GHG) Protocol. Using Science Based Targets this has defined our short and long-term ambitions.

- Reduce direct and indirect GHG emissions (Scope 1 and Scope 2) by 70% by 2030, compared with 2021.
- Reduce other direct and indirect GHG emissions (Scope 3) by more than 30% by 2030; compared with 2021.
- To achieve Net Zero GHG emissions for the Fagerhult Group by 2045.

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Carbon definitions

- **Net Zero (Whole Life) Carbon** "A Net Zero (Whole Life) Carbon' asset is one where the sum total of all asset related GHG emissions, both operational and embodied over an asset's life cycle… are minimised, meet local carbon, energy and water targets, and with residual 'offsets'; equals zero."
- **Whole Life Carbon** "Whole life carbon encompasses all carbon emissions that arise as a result of the energy used in the construction, operation, maintenance and demolition phases of a building."
- **Embodied Carbon** is the amount of carbon emitted during the construction of a building. This includes the extraction of raw materials, manufacture and refinement of materials, transport, the building phase of the structure, and the deconstruction and disposal of materials at the end of the life of the building.
- **Operational Carbon** is the amount of carbon emitted during the operational phase of the building. This includes the use, management, and maintenance of the structure.
- **Carbon Offsetting** is when emission reductions or removals achieved by one entity can be used to compensate or offset emissions from another.**

***Source: LETI*

Cradle to Cradle® overview

Cradle to Cradle Certified® is a globally recognised measure of safer, more sustainable products made for the circular economy.

To achieve certification products are independently assessed for environmental and social performance against five key categories. The standard encourages continuous improvement over time by awarding certification on the basis of ascending levels of achievement and requiring certification renewal every two years.

material health

Chemicals and materials used in the product are selected to prioritize the protection of human health and the environment, generating a positive impact on the quality of materials available for future use and cycling.

product circularity

Products are intentionally designed for their next use and are actively cycled in their intended cycling pathway(s).

clean air & climate protection

Product manufacturing results in a positive impact on air quality, the renewable energy supply, and the balance of climate changing greenhouse gases.

water & soil stewardship

Water and soil are treated as precious and shared resources. Watersheds and soil ecosystems are protected, and clean water and healthy soils are available to people and all other organisms.

social fairness

Companies are committed to upholding human rights and applying fair and equitable business practices.

Source: c2ccertified.org/the-standard

Cradle to Cradle Certified® Version4.0 is a certification mark licensed by the Cradle to Cradle® Products Innovation Institute.

Affiliations & accreditations

Useful links

Circular Economy: https://www.circularity-gap.world/

Cradle to Cradle® Product Innovation Institute: https://c2ccertified.org/

Ellen Macarthur Foundation: https://ellenmacarthurfoundation.org/

International WELL Building Institute: https://www.wellcertified.com/

LETI Publications: https://www.leti.uk/publications

NABERS: https://bregroup.com/products/nabers-uk/

UKGBC Bitesize Learning Guides: https://www.ukgbc.org/ukgbc-work/bitesize-learning-guides/

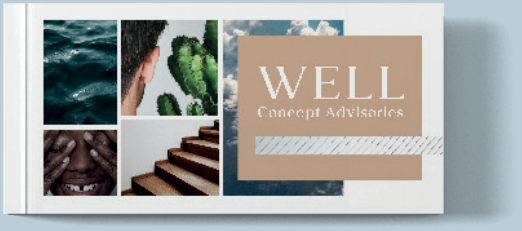
Whitecroft Lighting

Shining a Light on Net Zero: https://www.whitecroftlighting.com/net-zero/#brochure

Whitecroft Product Certifications: https://www.whitecroftlighting.com/technical-centre/whitecroft-product-certifications/

Industry collaborations

WELL Concept Advisor Light



Lighting Task Group contributors

BS 8887

TM65

TM66

Member of the ‘LCA Incubator’ project

GreenLight Alliance

Whitecroft Lighting

A leading light in sustainability

In recent years, Whitecroft Lighting has been at the forefront of sustainability and circularity in UK commercial lighting, leading the market in the development of products that minimise the use of material and promote re-usability through replaceable modular hardware.

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