

Shining a light on net zero



Global warming the story so far

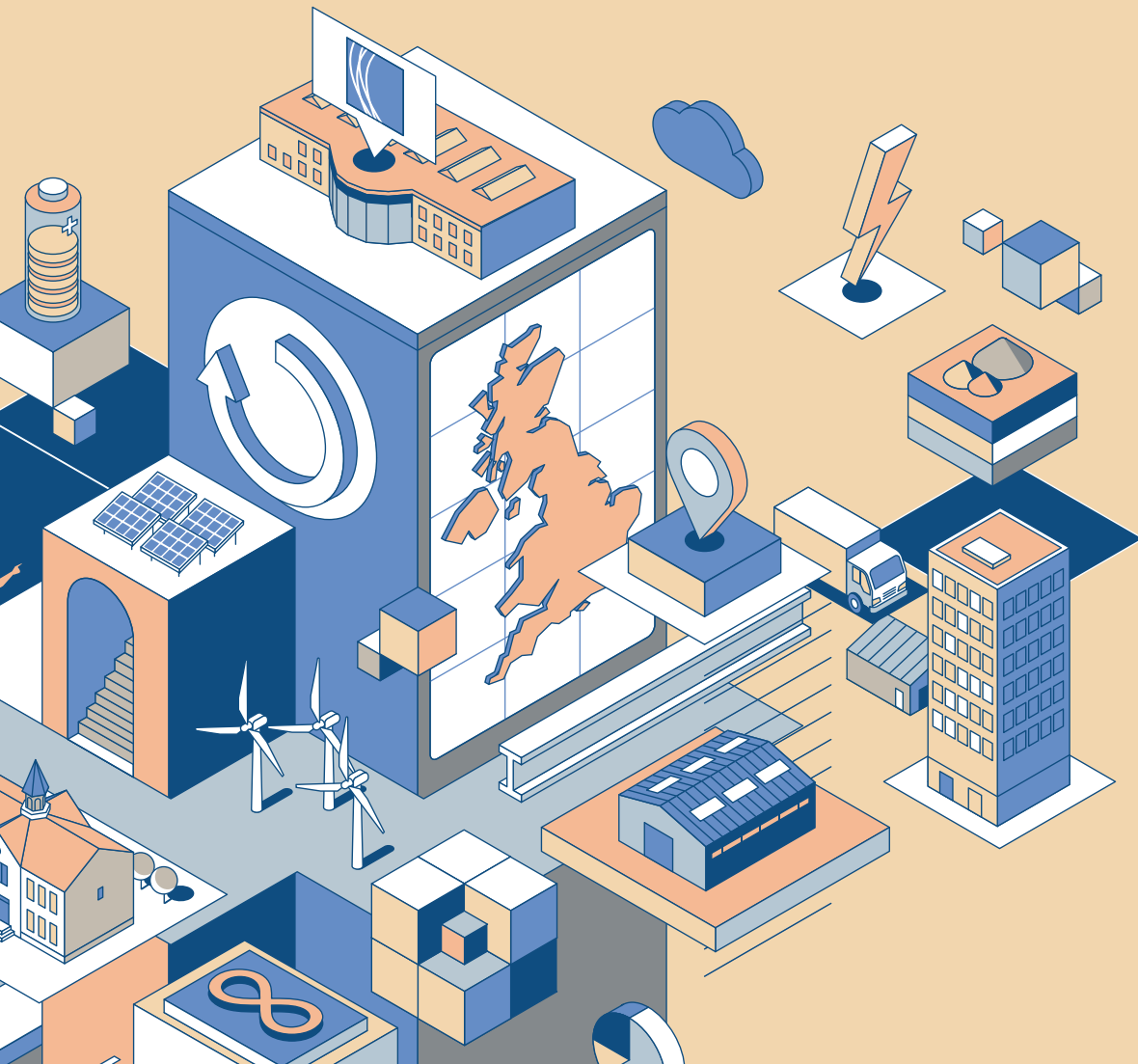


Global warming, caused by human activity, is no longer a theory. The devastating effects are beginning to be seen, in erratic weather patterns: heatwaves; floods and severe storms; loss of polar ice; and rising sea levels. If left unchecked, the dire consequences are here for all to see.

It was at the Paris Agreement in 2015, that for the first time, the world's nations came together to agree to limit global temperature rises to 1.5°C above pre-industrial levels.

Each country is to set its own emission-reduction targets, reviewed every five years to monitor progress and maintain the collective resolve. Whilst developed countries are to support less developed nations with actions that will address climate change and switch to renewable energy.

The UK takes a lead on net zero



The UK took a lead, in 2019, by becoming the world's first major economy to pass laws to achieve net zero by 2050. The country had already made good progress by reducing emissions by 42% at the same time as growing the economy by 72%, since 1990. However, much more has to be done by Government and every sector of the economy to hit the 2050 target.

This has led to the [Net Zero Strategy](#) published in October 2021, which sets out how the UK will deliver on its commitment to reach net zero by 2050.

The Strategy builds on the Government's 10-point plan which includes measures to quadruple our offshore wind capacity by 2030, drive the growth of low carbon hydrogen, invest in the next generation of nuclear energy, accelerate the shift to zero emission vehicles and make our buildings more energy efficient.

The plan to achieve net zero

The plan that came out of the Paris Agreement was to create a net zero world by 2050. Put simply, net zero is the balance between the greenhouse gases produced and the amount removed from the atmosphere. We reach net zero when the amount we add is no more than the amount taken away.

It was agreed at COP 26 in Glasgow that countries would meet again in 2022, to pledge further cuts to carbon dioxide (CO₂). This is to try to keep temperature rises within 1.5°C, which scientists say is required to prevent a “climate catastrophe”. Current pledges, if met, will only limit global warming to about 2.4°C.



“The 1.5°C limit lives. We must steer it to safety by ensuring countries deliver on the promises they have made, and on the expectations set out in this pact to increase climate ambition to 2030 and beyond.”

Alok Sharma
President of Glasgow COP 26

Reducing greenhouse gas emissions in the built environment



A key element in the Government's net zero strategy is the plan to decarbonise commercial, industrial and public sector buildings. Reducing carbon emissions in buildings is critical to achieving net zero emissions by 2050.

With the UK built environment accounting for 25% of the UK's total carbon footprint*, a key element of the strategy is to decarbonise commercial, industrial and public sector buildings. Latest figures indicate that operational emissions account for 70% while 30% come from building materials and construction. To reduce carbon emissions in buildings it's necessary to understand the difference between embodied and operational carbon, and to appreciate the importance of reducing both.

To reach net zero, some emissions will have to be offset, however the priority should be to reduce operational and embodied carbon emissions as much as possible before offsetting. Whilst those emission impacts may not be fully realised today, the choices we make can have both positive and negative long-term impacts.

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: Green Building Council

**Source: LETI

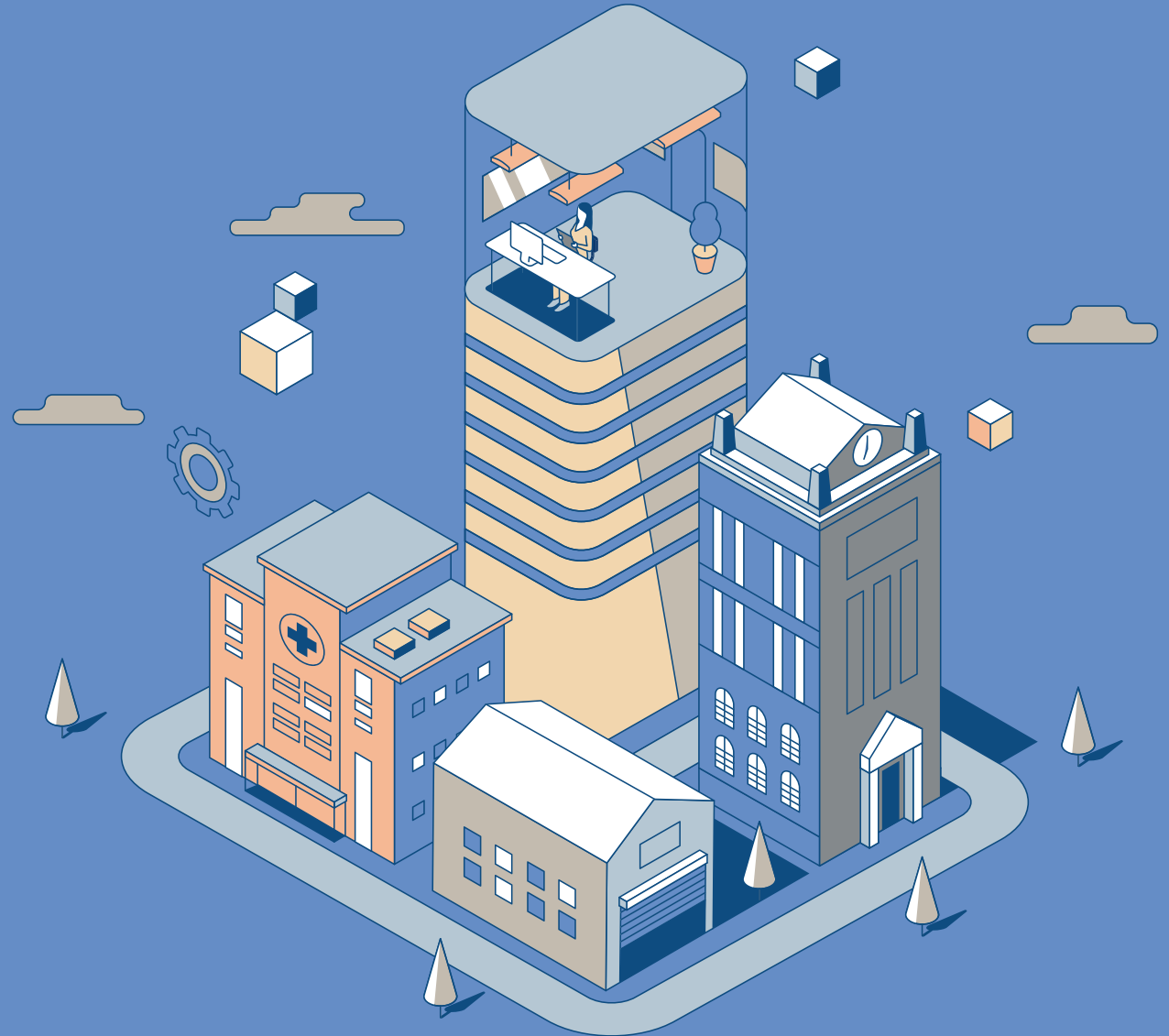
We must all do more to reduce our carbon impact

To reach net zero aspirations, the construction industry needs transformational change, which has to start now.

We need to work together to consider, challenge and understand the long-term impacts of the choices we make. Only by doing this can we start to play our part.

For this to happen, today's lighting solutions need to go far beyond simply meeting the efficiency targets for the here and now.

The following are five considerations we as lighting designers and manufacturers can make to reduce our impacts now and into the future.



Don't lose sight of people

In our drive to deliver highly efficient, low carbon lighting solutions, we must also acknowledge the need to create positive, life-enhancing environments for the people who occupy the spaces.

Staff are approximately 90% of a business running costs, so their health and well-being is a major consideration for all concerned.

The health and wellbeing of people doesn't have to come at the cost of carbon emissions. Delivering high quality lighting design that follows industry guidance, will result in resilient, flexible, adaptable spaces that places people first. This will ensure the long-term viability of the solution and minimise long-term environmental impacts.

 LEARN MORE ABOUT HEALTH, WELLBEING AND PRODUCTIVITY



1.

Make every watt count

First and foremost we need to put the right light in the right place, using the latest technology available to drive down energy consumption from all parts of the lighting system.

To do this effectively it requires more than simply considering luminaire efficacy and controls. We need to apply smarter design practices and understand all lighting loads.

Of course, this must all be done whilst meeting the needs of the occupier.



2.

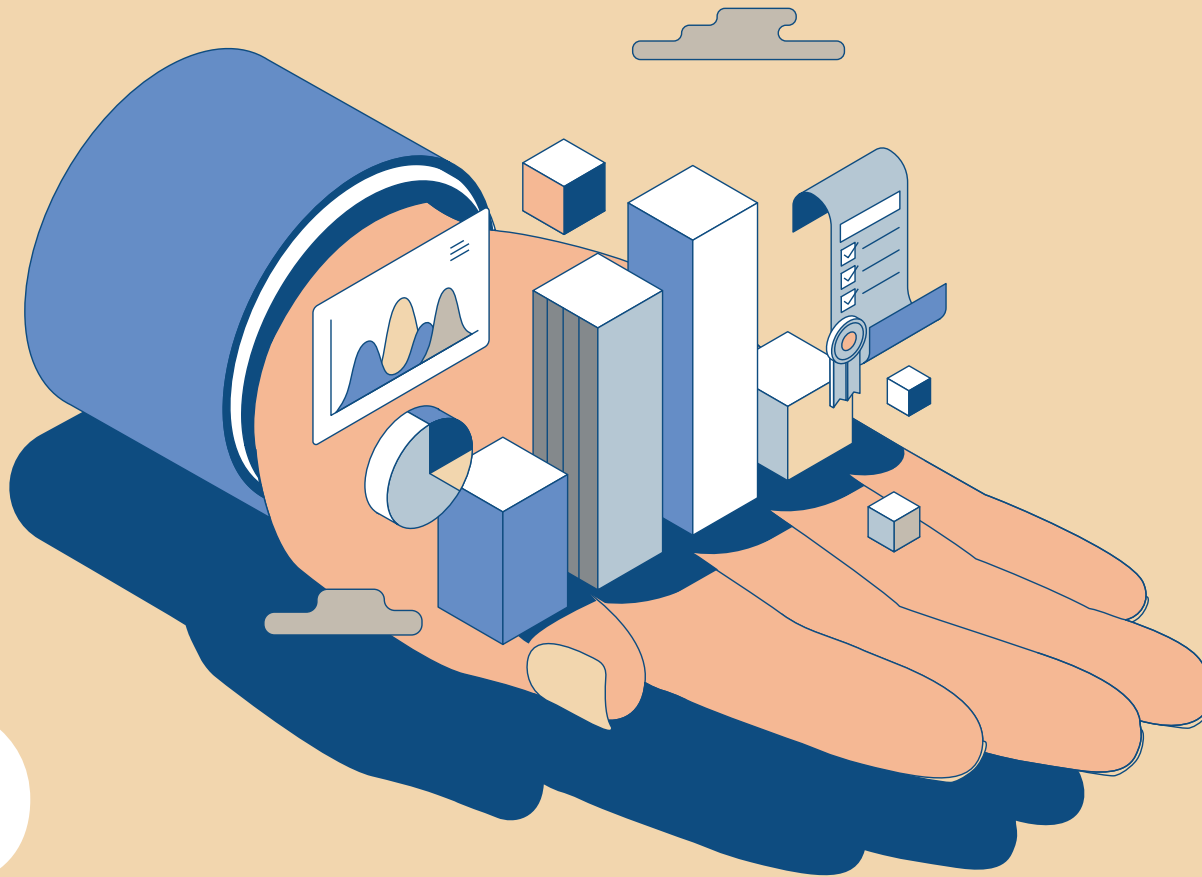
Know your impact

As a manufacturer we need to be transparent with data. In this way the client knows the material implications, through-life embodied and operational carbon impact of our products, and the wider system consequences.

For example, as we transition to renewable energy sources of power, the embodied impacts of material extraction, manufacture supply and end of life will become increasingly important considerations.

This data should be provided from partners who have third party accredited and industry recognised solutions, which provide reliable and predictable outcomes.

Examples of third party accreditation may include Environmental Product Declarations (EPDs) and Cradle to Cradle certification.



3.

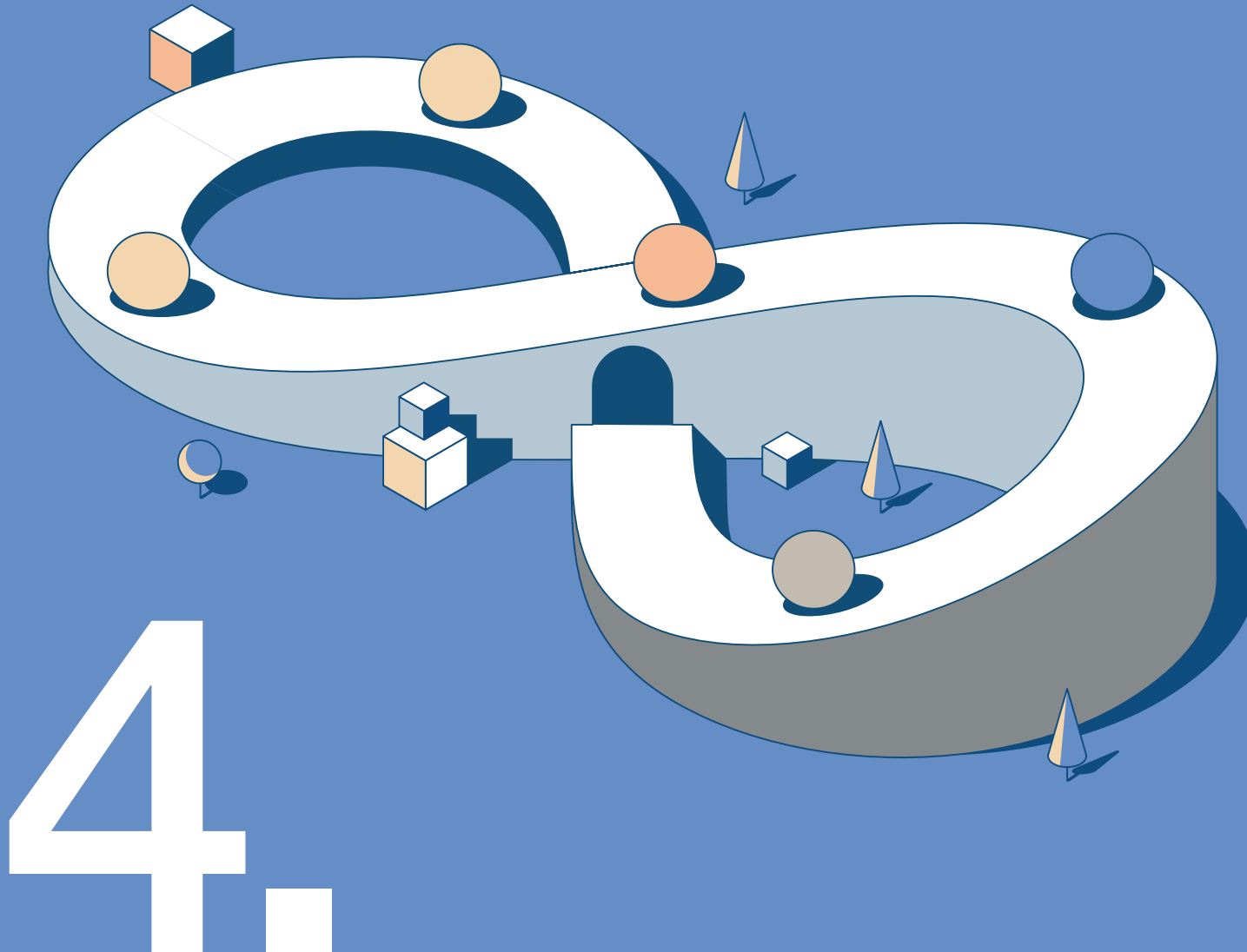
Go Circular

Adopting circular economy principles is key to deliver net zero and to tackle waste and virgin resource consumption associated with carbon impacts.

We must consider not only circular product design but also how the product is managed through its life. By designing in a circular way and maintaining it through its life we can slow resource use, minimise operational energy use, the long-term embodied carbon impact and realise the residual value of the product beyond its first life.

In 2020 we launched our first circular product. Cascade Flex Vitality is designed with reusable and replaceable components. It can be upgraded overtime and is available with integral smart controls for through-life monitoring. When compared over a 40 year life span to a traditional flat panel Cascade Flex Vitality shows embodied carbon emission savings of up to 40%*.

*Based on TM65 methodology, Cascade Flex Vitality compared with Tegan 2

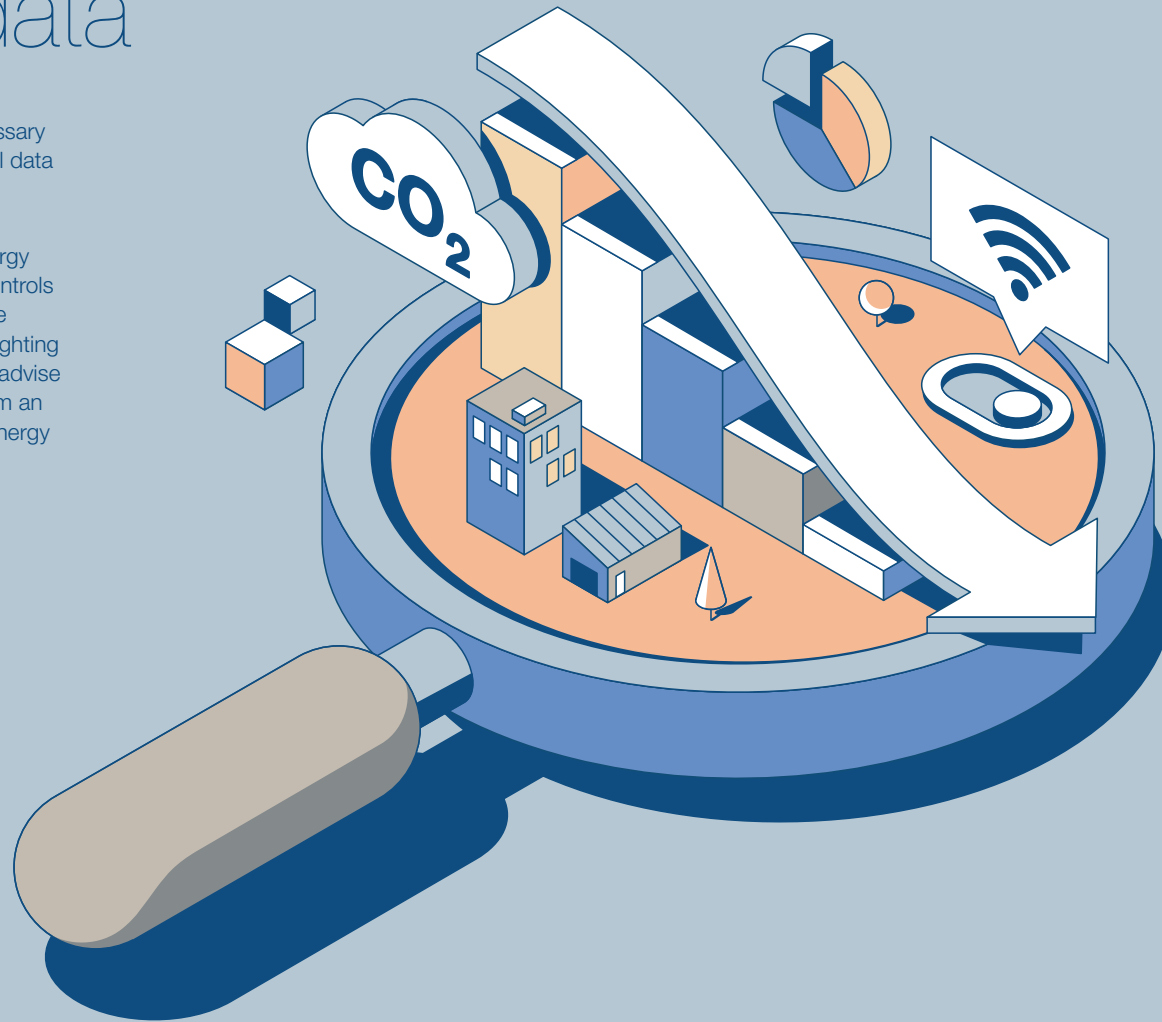


4.

Be smarter with your data

Controls and monitoring of lighting is necessary to provide real time and historic operational data to enable ongoing project performance.

Daylight control, occupancy and delivering appropriate light levels is key to saving energy but to be most effective the lighting and controls system has to be monitored throughout the project's life. For example, monitoring the lighting system and its performance enables us to advise when the lighting system would benefit from an upgrade, ensuring maximum operational energy savings are achieved throughout the life of the project.



5.


Your partner on projects targeting net zero

A partnership approach with our customers is key in achieving sustainability through the lifetime of the building. It's only by adopting a continued dialogue, that we can provide lighting solutions that offer commercial benefit and reduce carbon impacts on the environment.

It's by engaging in a meaningful way that we have developed our approach to circularity and a service for existing buildings undergoing regeneration and decarbonisation.

Whitecroft Vitality products are designed for the circular economy. They are modular, upgradeable and designed to last using high quality components. In addition, they come with complete data transparency in the form of material health EPDs.

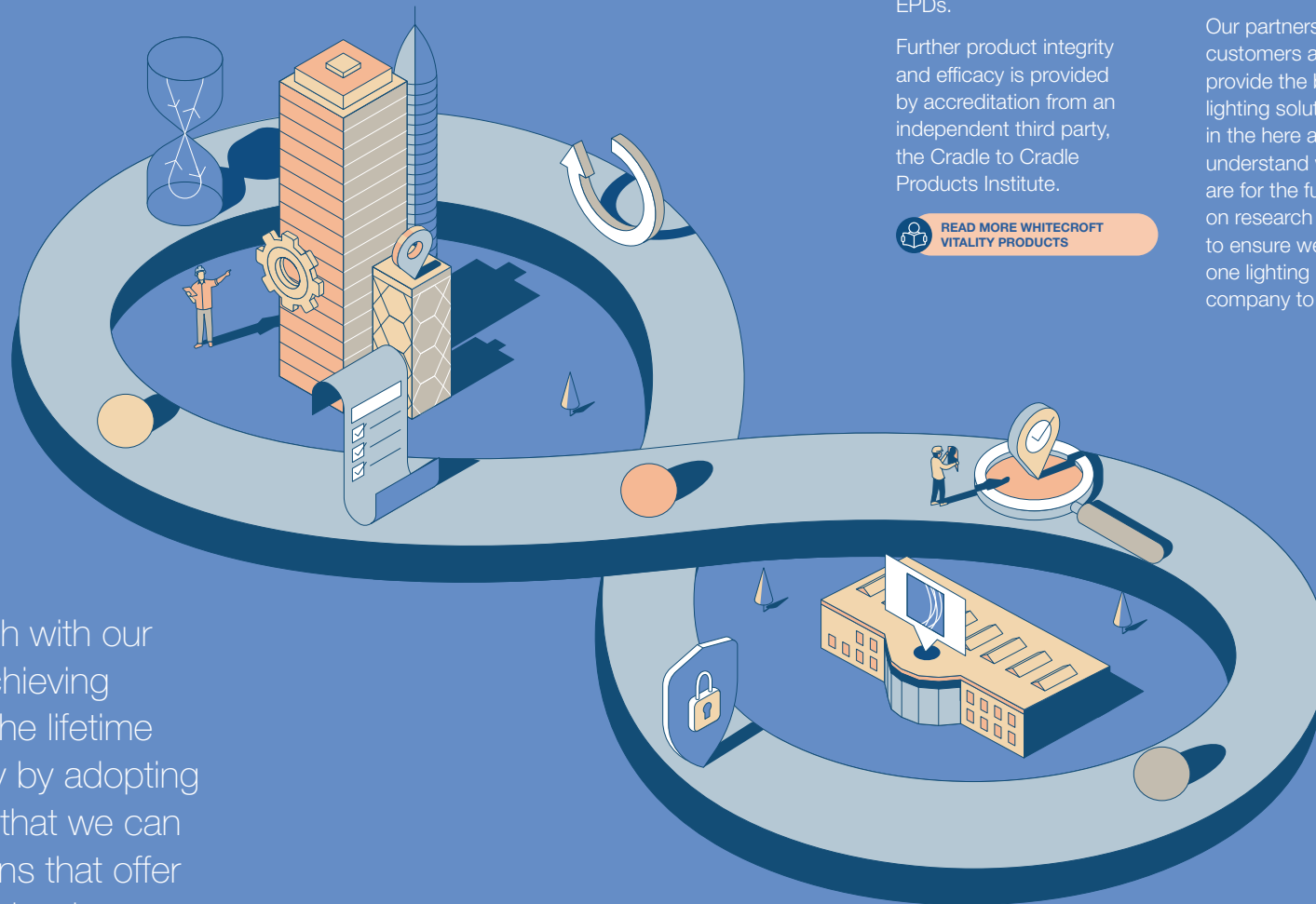
Further product integrity and efficacy is provided by accreditation from an independent third party, the Cradle to Cradle Products Institute.

 [READ MORE WHITECROFT VITALITY PRODUCTS](#)

Vitality Relight is a service for existing buildings that offers the opportunity to make significant operational savings as well as conserving the original embodied carbon associated with the building's construction.

 [READ MORE VITALITY RELIGHT SOLUTION](#)

Our partnerships with our customers aren't only to provide the best possible lighting solutions and support in the here and now, but to understand what their needs are for the future and to embark on research and development to ensure we are the number one lighting and controls company to meet those needs.



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 reusability through replaceable modular hardware.



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