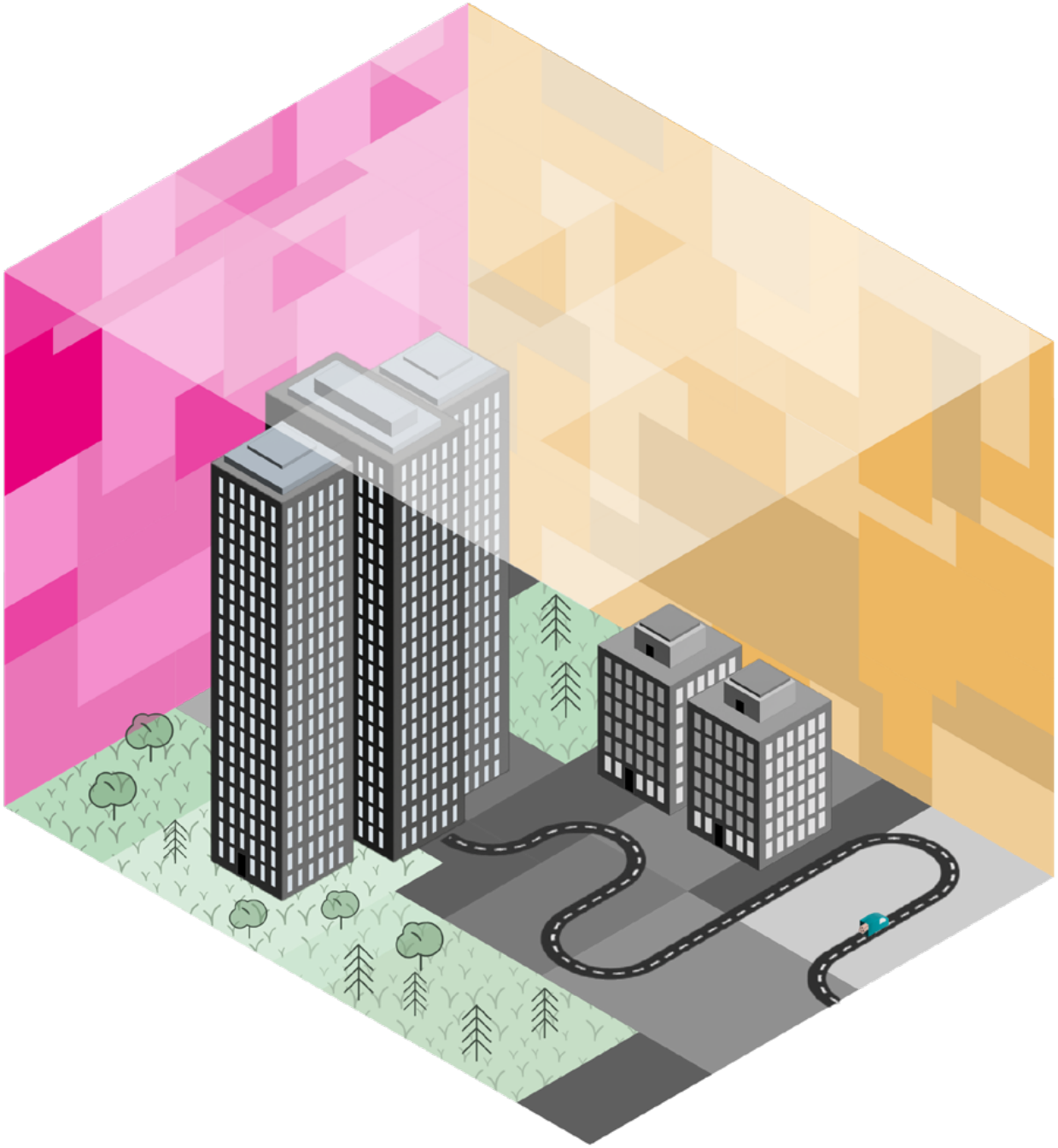
Delivering Net Zero:

Key Considerations for Commercial Retrofit



UK GBC

ADVANCING NET ZERO

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Foreword

There is an urgent need to increase the pace at which we are retrofitting the UK's commercial real estate. Doing so will allow us to meet net zero targets whilst simultaneously supporting the Paris Climate Agreement's commitment to limiting global temperature increase to 1.5 degrees Celsius.

Demand for sustainable space is surging, with occupiers driving towards net zero targets and investors responding to market expectations and increasing regulation – not only to avoid 'brown discount' and risk of stranded assets, but increasingly acknowledging the need to act to secure a global sustainable future.

Collaboration across the sector is now key to drive towards this common purpose.

JLL estimates that, in order to meet global emissions standards by 2050, the rate at which we're repurposing our commercial building stock needs to increase to around 5% annually. In the UK, this means that the pace of office redevelopment needs to at least double from levels seen over the last ten years, while delivering a step change to achieve the 59% reduction in energy use needed by 2050.

This publication provides insight into the key considerations for commercial retrofit established by key cross-industry stakeholders, from designers through to building managers, with a view to supporting your work when you plan your next commercial retrofit project.

Along with retrofit case study projects, the established key considerations showcase how we and others have approached the challenge of commercial retrofit to deliver successful projects that begin to address the issues with our existing building stock.

The publication includes retrofit definitions, key considerations and supporting case studies - outlining a method for approaching retrofit projects and setting out clear definitions to help give clarity to the industry in establishing best practice approaches.

It is imperative that we begin seriously addressing our existing building stock on our journey to decarbonising the UK built environment.

We need to act now.

David Bownass, Head of UK Net Zero Design Consulting, JLL

Executive Summary

UKGBC's Advancing Net Zero Programme is catalysing the construction and property industry to take the initiative and lead our transition towards net zero for the UK's built environment. Our approach in securing this support has been the development of the Net Zero Carbon Buildings Framework Definition and supporting projects.

Whilst to date the focus has been largely on new net zero carbon projects, this publication, and others to follow will bring commercial retrofit into sharp focus, promoting the important conversation around our existing built assets and providing a level of clarity and consistency to the approaches required to decarbonise them.

This guide is aimed at industry professionals and stakeholders including architects, engineers, planners and facilities managers, as well as landlords and building owners who are involved in the scoping, planning, delivery, and management of commercial retrofits. Any group that has the intention of supporting the successful delivery of net zero-focused retrofit projects will benefit from the following guidance.

KEY CONSIDERATIONS

As the costs associated with meeting net zero goals become clearer, it is essential that property owners and key stakeholders are provided with a transparent picture of their potential return on investment as well as the benefits of opting for a net zero focused retrofit versus standard practice. The following 10 key consideration areas have been established to support this:

1. **Understanding the building** to help inform the most appropriate decision making on the project.
2. **Assessing what is required:** An assessment appropriately tailored to the size and scale of the retrofit is essential to identify key areas of focus.
3. **Making the business case:** A balanced case must consider a broad range of drivers not only to illustrate the need for retrofit but also its potential benefits for owners and occupiers.
4. **Barriers and opportunities:** The potential barriers should be understood to identify ways to overcome them, and opportunities identified to best capitalise on them.
5. **Performance targets:** For retrofits where full building energy modelling and verification is planned, a clearly defined set of performance targets will both focus the decision-making process and provide clear benchmarks to track project performance.
6. **Establishing a standardised, scalable approach to multiple building or portfolio retrofits** to support consistency and efficient implementation of low carbon measures.
7. **Building management and optimisation:** The existing building's operational optimisation is a critical first step in the retrofitting process.
8. **Low carbon building services and energy efficient fabric upgrades:** Understanding the condition of the existing building will help identify a hierarchy of low carbon options to pursue.
9. **Materials and circular thinking:** Reducing embodied carbon and promoting the circularity of construction materials and products is key to establishing a low carbon asset.
10. **Monitoring and performance verification:** To ensure low carbon benefits are realised, measurement, recording and evaluation of data should take place to verify the effectiveness of the retrofit measures.

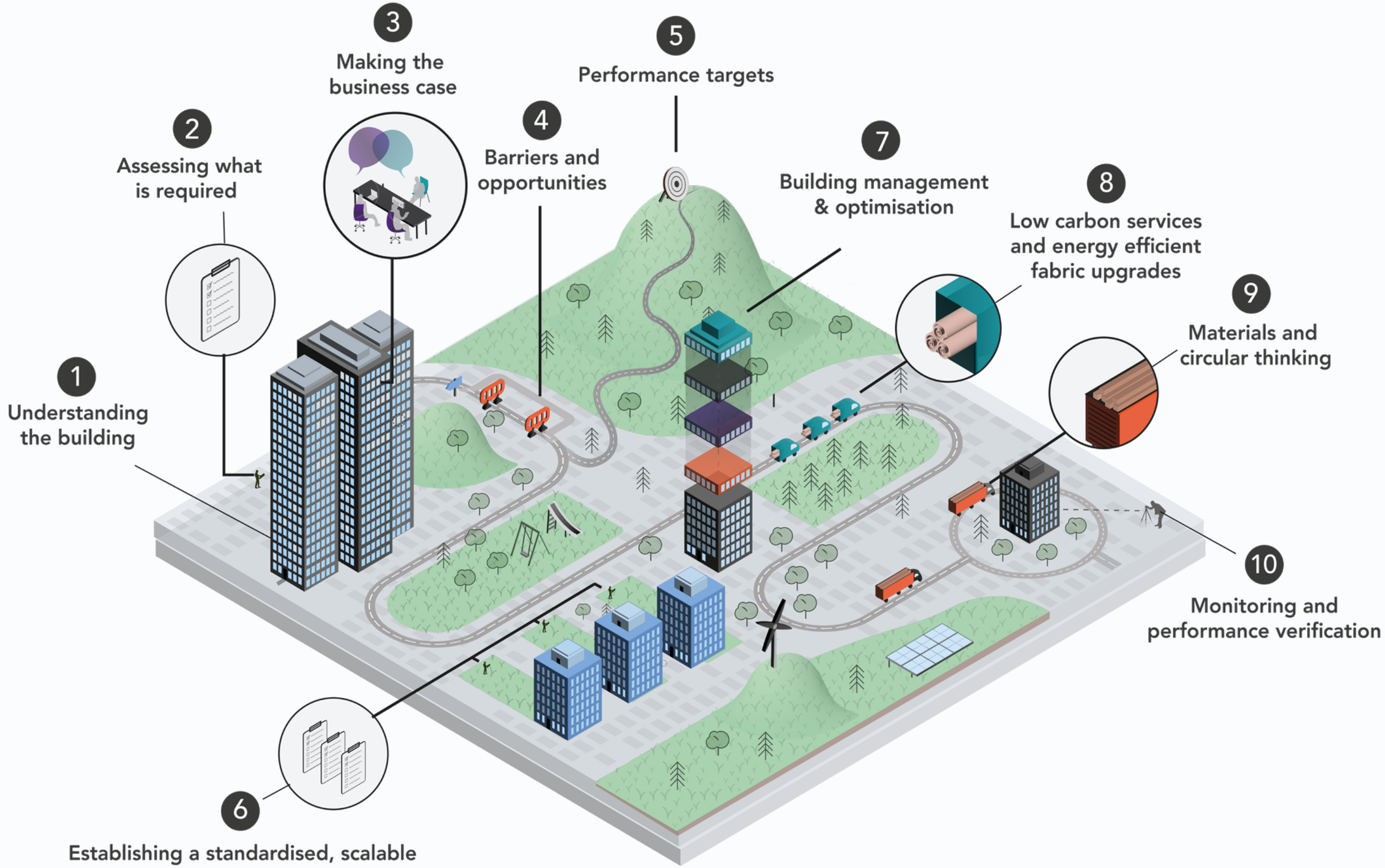
Drawing from established industry thinking and discussions with built environment professionals this guide has assembled key information to support and guide the significant efforts needed to achieve our net zero ambitions.

DEFINITIONS

To date, the lack of consistency and clarity within the industry around the key definitions associated with retrofit has contributed to a difficulty in establishing best practice approaches to support net zero carbon alignment. To help resolve this issue, drawing from both established industry thinking and discussions with built environment professionals, the following definitions have been established to provide a level of clarity and consistency to commonly accepted retrofit types.

Light retrofit: focus on performance optimisation, basic remodelling, replacement, or adaptation of existing building elements which tend to focus on a single aspect or feature (lighting upgrades, optimisation of building controls and operation, etc).

Deep retrofit: focus on significant works of size or scale that result in a fundamental change to the building structure and/or services. This can be represented as a collection of light retrofit enhancements or individually disruptive measures, such as major plant replacement.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