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Circular economy guide

How can a circular economy boost sustainability and maximise the value of your built environment assets?

PICK
EVERARD

Deliver better together.

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Defining the circular economy

1

Takes a systemic approach to prioritising the flow of resources, to minimise and mitigate humanity's footprint on planet Earth

4

Seeks to maximise opportunities to regenerate nature, and use regenerative materials

2

Seeks to maintain products and materials in circulation at their highest value use through reuse, repair, refurbish and recycling

5

Minimises pressure on finite and natural resources and in doing so reduces waste and pollution

3

Is designed to operate within the constraints of finite and depleted resources

6

Has the potential to contribute to up to 45% of the net zero challenge

What the circular economy isn't:

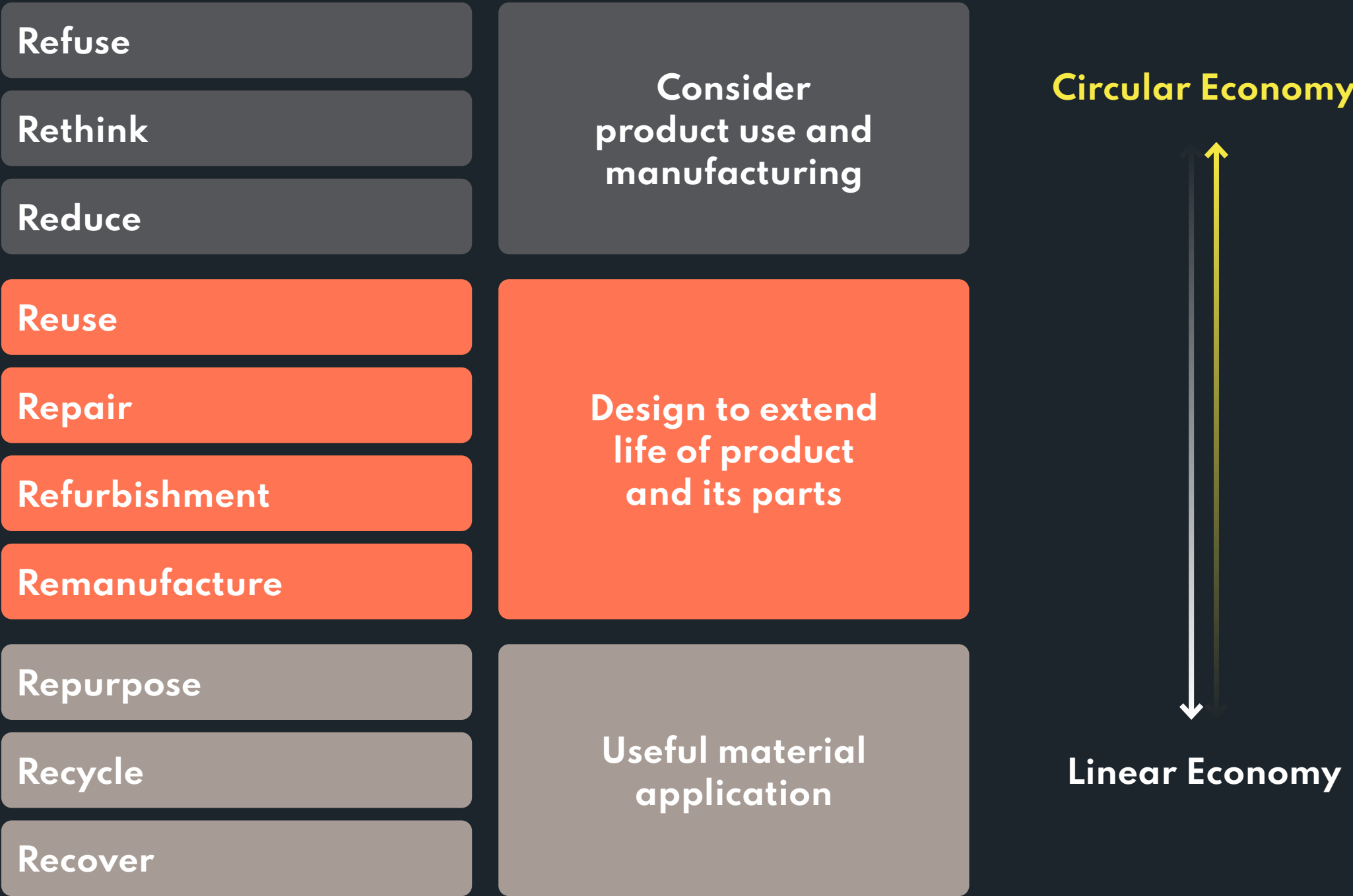
Recycling: Whilst recycling does prevent materials from becoming waste it often downgrades and loses the inherent value of the original product/component.

A KPI: It is a systemic approach to the management of materials to drive beneficial outputs for people and planet.

A marketing or greenwashing exercise: it has tangible discreet actions that can be applied across business value chains.

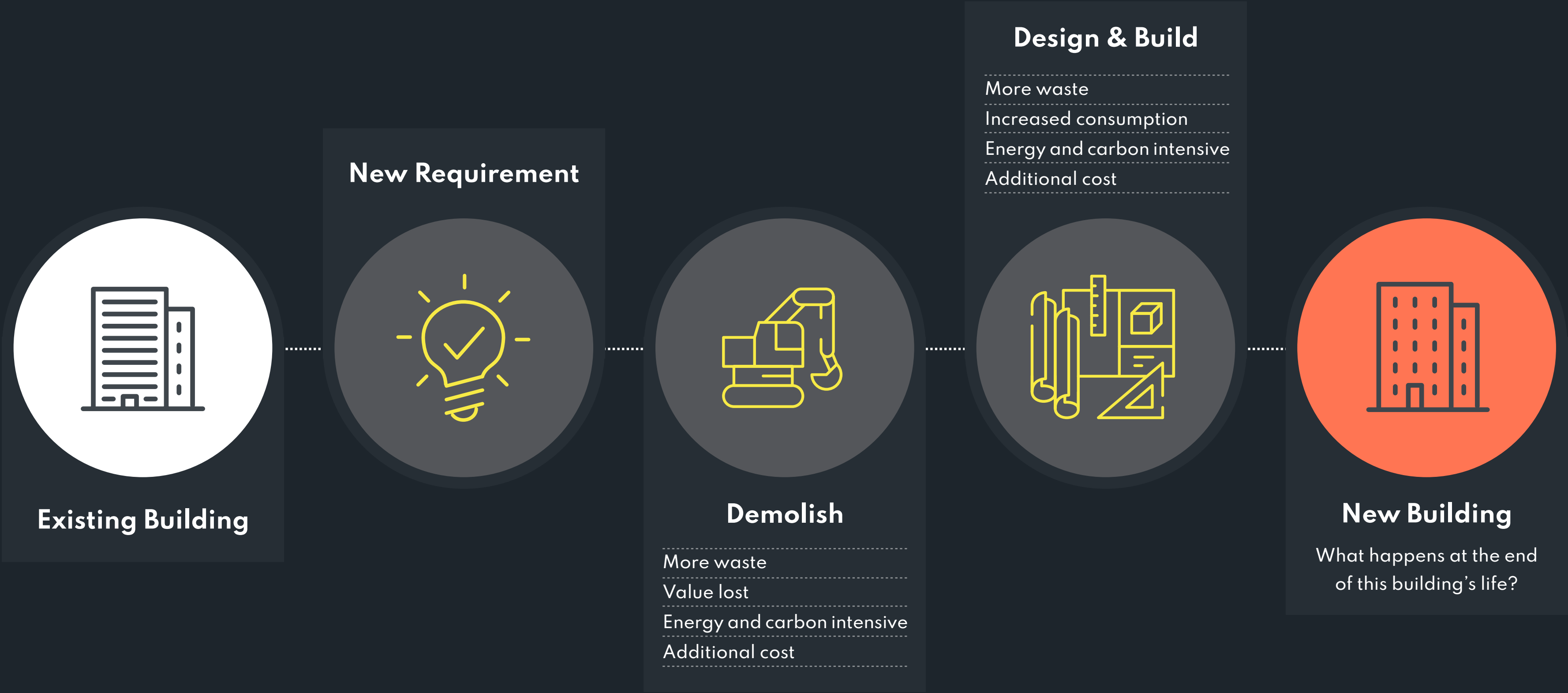
A one-size-fits-all solution: Individual sectors and projects require tailored strategies to effectively implement circular practices.

Material Hierachy



The negative impacts of a linear approach

We are committed to moving away from the current approach, which leads to lost value, increased waste, and excessive material consumption. It is clear that this system is unsustainable and needs to change.



A circular approach to the management of resources

Our mission is to enable the reuse of materials, to reduce waste, to regenerate nature, and to decarbonise the built environment.

New Requirement



Existing Building

The most sustainable building is the one that already exists.



Retain Value

We retain, retrofit, reuse or repurpose components and buildings.

- Waste minimised
- Value maximised
- Energy and carbon reduced
- Whole life value



Circular Design & Build

We maximise the use of, regenerative and recovered materials into design and design for future deconstruction and reuse.

- Waste minimised
- Consumption reduced
- Energy and carbon reduced
- Whole life value



New Building

We design to maximise asset/resource life.

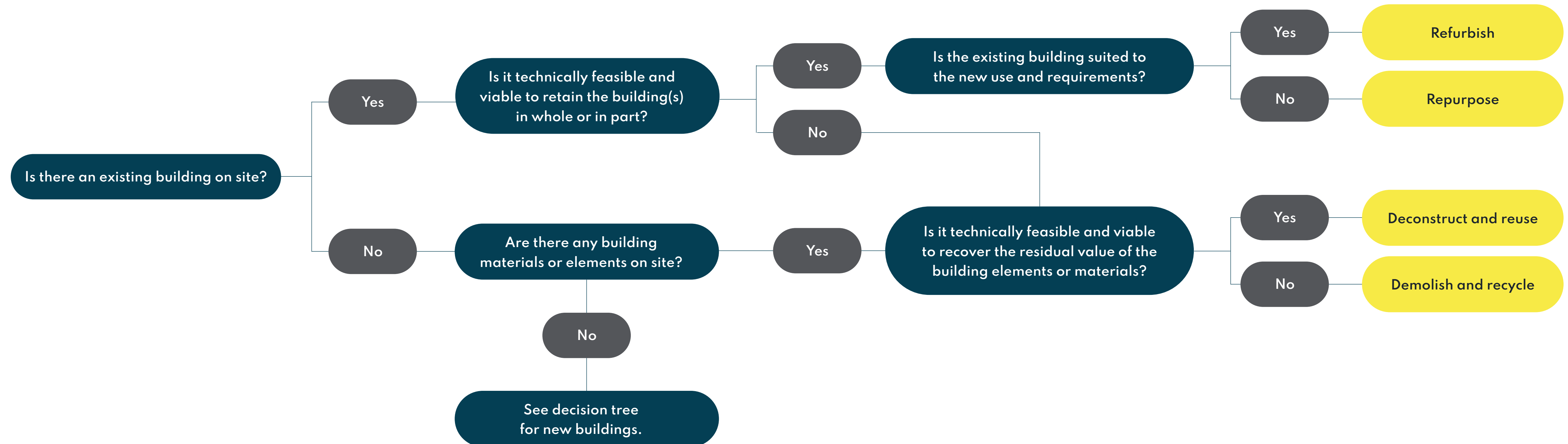


Future reuse

At the end of the building's first life it should now be easier to reuse resources.

A circular economy tree for existing buildings

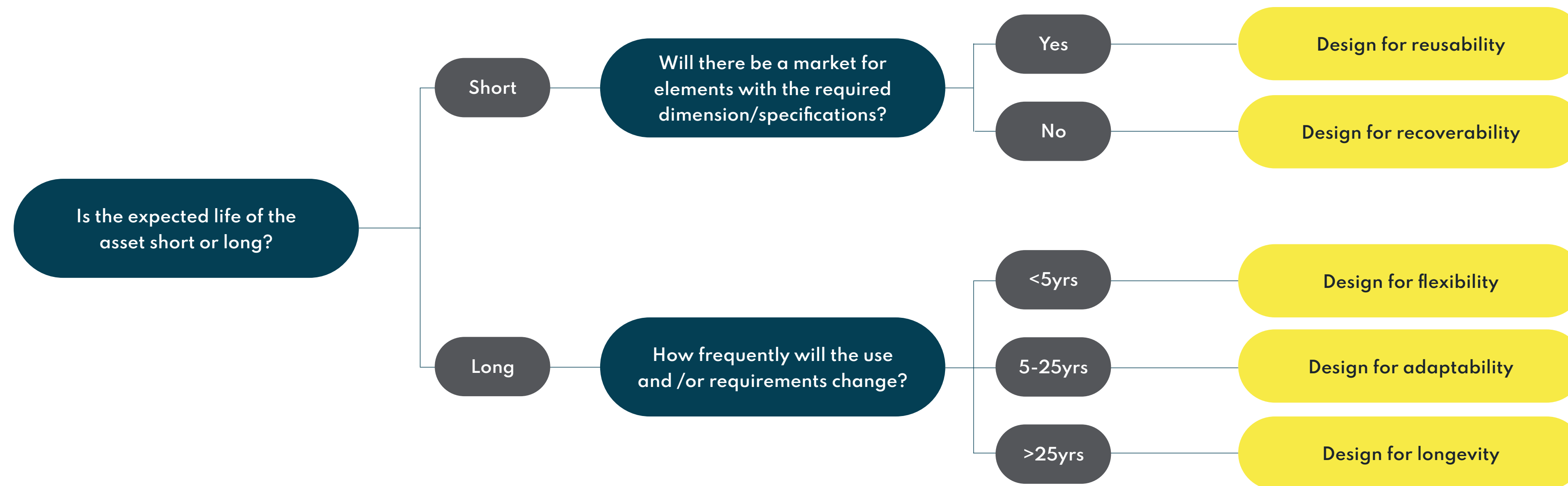
These are the key questions you should be asking to identify circular design principles.



As adapted from the London Plan

A circular economy decision tree for new buildings and infrastructure

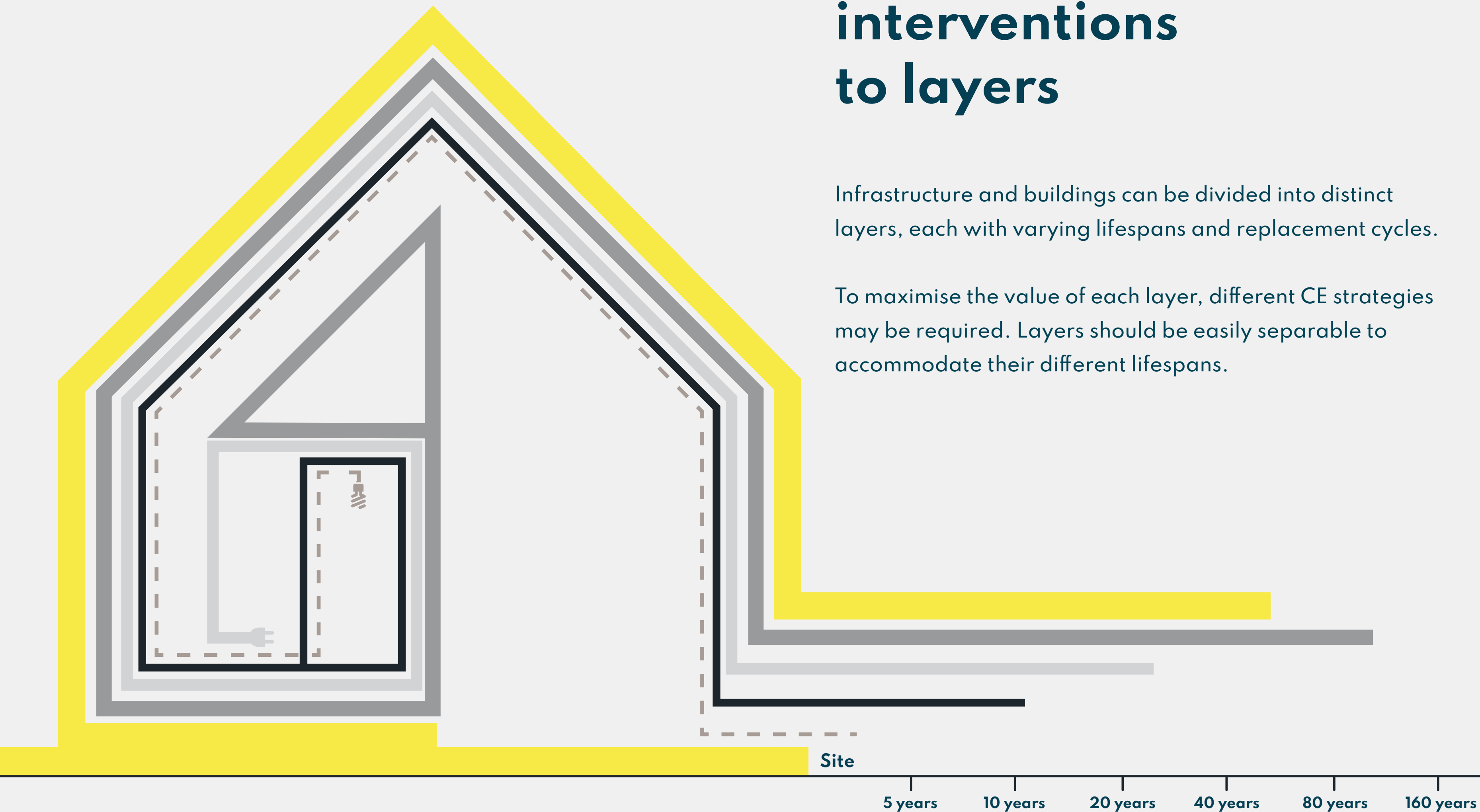
These are the key questions you should be asking to identify circular design principles.



Tailoring interventions to layers

Infrastructure and buildings can be divided into distinct layers, each with varying lifespans and replacement cycles.

To maximise the value of each layer, different CE strategies may be required. Layers should be easily separable to accommodate their different lifespans.

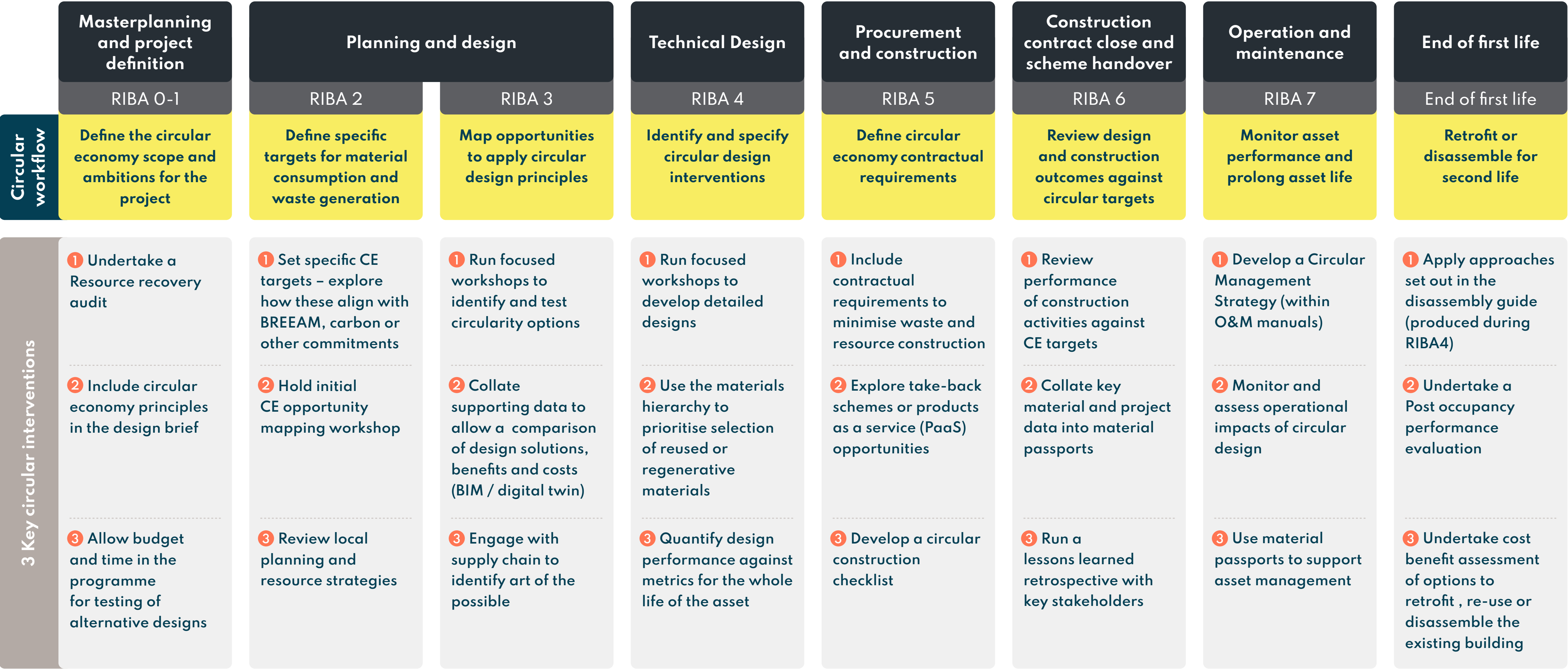


Layer Components and Strategy

- Skin**
Example Components
Sub-structure, structure, floors, fabric.
Overall Strategy
Long life, loose fit. Adaptable to different uses. Consider design for relocation.
- Structure**
Example Components
Building Services
Overall Strategy
Design for maintenance replaceability, remanufacture.
- Services**
Example Components
Internal partitions, ceilings, floors, local services.
Overall Strategy
Design for reconfiguration, use modular systems.
- Space Plan**
Example Components
Internal finishes, furniture.
Overall Strategy
Match material to lifespan, design for disassembly and return to manufacturer.
- Stuff**

As adapted from the London Plan

A framework for the circular economy



Introducing our sustainability and circular economy expertise

Our vision

To become leaders in the sustainable design of buildings and civil infrastructure, and partners of choice for sustainable clients, contractors and operators.

Our mission

To ensure all relevant sustainability drivers are embedded in our design processes to create a lasting and tangible legacy for our clients and the communities in which we work.

To make the reduction of carbon emissions a natural and tangible business currency in our work.

Our approach to the Circular economy

We identify and implement viable sustainable solutions for clients' projects by protecting natural resources through circularity best practice. In this, we continually seek innovative outcomes that foster sustainable economic growth across full value chains. In conjunction with our client teams, our design and procurement teams specify reuse and repurposing of materials, technology and goods to minimise resource consumption across the full lifetime of designed assets.

For example, we specify recycled and secondary products to reduce embodied energy in the design and construction process and advise on how to optimise building / asset reuse or adaptation during operation and at end of life.

We provide a range of services to help our clients embed circular economy principles:

- Circular economy roadmaps
- Net zero and circular whole life approaches to development and project delivery
- Resource recovery and sharing, flexible and adaptable asset design
- Low impact materials and construction specifications
- Advice on repurposing, reuse and recycling of materials and technology
- Zero waste management strategies

Click here to
arrange a free initial
consultation.



If you have a site,
or a project already...

A systemic approach to management of resources

Our mission is to enable the reuse of materials, to reduce waste, to regenerate nature, and to decarbonise the built environment.



Resource Recovery Audit

Capture the value of your existing assets through a resource recovery audit.

Our trained surveyors develop a materials inventory of your existing buildings through a structured process designed to identify value opportunities such as resource recovery and reuse. This approach will help you to create a more interconnected and resource-efficient business model.

Circular opportunity mapping tool

Quantify financial and carbon benefits through our circular opportunity mapping tool. Your building's material and carbon footprint is mapped and a quantified assessment of the impact of circular approaches is undertaken to identify priority interventions. By exploring opportunities for industrial symbiosis and resource exchange through our value chain, we aim to enhance efficiency and sustainability in your projects.

Circular design specialists

Enable circular approaches from start of the project using our circular design specialists. Our multi-disciplinary team of architects, engineers and circular economy experts will work with you to explore the design approaches that maximise material reuse and minimise waste generation. This approach will also capture the benefits realised through diligent design interventions.

If you're just starting out,
or don't know where to start...

... then these are the
key considerations
you need to make
to enable circular
decision making.

Our team of experts are well positioned to help you to
best implement the circular economy into your project.

1



Stewardship: The extent to which you include the environmental and social impacts of decisions, and actively seek to maximise the positive impacts.

2



Systems thinking: The ability to understand the interconnectivity between systems and how business decisions impact the broader environment.

3



Innovation: A mature approach to enable creative approaches to resource management that add value and improve sustainability.

4



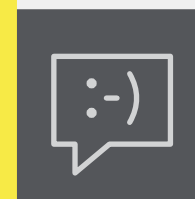
Collaboration: Working together across sectors and disciplines to achieve circular economy goals.

5



Value Optimisation: Maximising the value derived from resources throughout their lifecycle, including reuse and recycling.

6



Transparency: Ensuring clear communication about processes, impacts, and practices to build trust and accountability.

7



Data led: The capability to quantify the impacts and benefits of circular approaches to inform decision making.

Circular economy maturity assessment

We have designed a structured maturity assessment tool based on BSI 8001 and ISO59020 to enable clients to identify their specific strengths and weaknesses to support developing of mature circular economy processes.

We offer a combination of survey based assessments and facilitated workshops, the result of which are targeted recommendations and clear next steps to make the most of new opportunities and build on your strengths.

Circular Economy Case Studies

SEROC Godstone Design

Client: National Highways
Location: Godstone, Surrey, UK
Project duration: 2023 - 2024

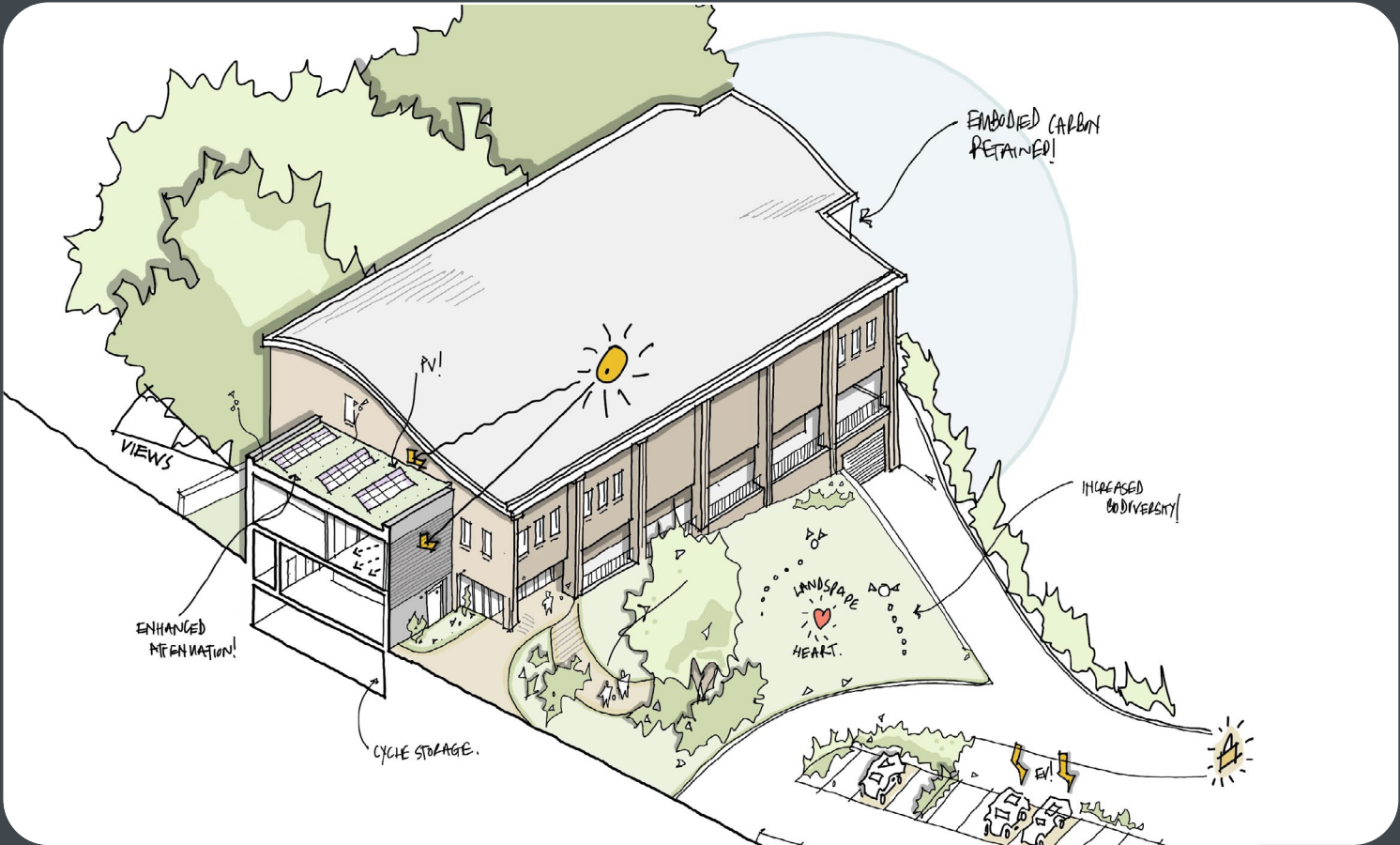
Overview

Working across RIBA3-7, Pick Everard’s sustainability team provided a range of services on the refurbishment, extension and landscape redesign of the National Highways SEROC Godstone building in Surrey.

Collaborating with National Highways, Pick Everard engineers, Downen Farmer Architects and Land Use Architects, our sustainability team conducted detailed thermal modelling, BREEAM alignment, and whole life cycle assessments. We also worked with the client to commission the preparation of an ‘enhanced sustainability performance’ study, including a circular economy assessment of opportunities which explored the recovery and reuse of arisings from the demolition of a significant building at site, alongside a detailed evaluation of the potential to incorporate rainwater harvesting.

Outcomes

The outcomes of our work at RIBA4 included: establishing opportunities to incorporate CLT structures, additional PV cells, and augmenting the site with car ports. Our work also identified opportunities to recover and reuse on site deconstructed steel roof structures, RSJs, and rolled shutter doors; concrete, bricks and timber were also identified for recycling and redeployment at site. The WLCA prepared showed that through the reuse of demolition materials nearly 50% (26tCO₂e) of the carbon impact in the landscape could be saved.



Circular Economy Case Studies

Surrey Outdoor Learning and Development

Client: Thames Young Mariners, Richmond

Location: Surrey

Start date: August 2023

Overview

Pick Everard prepared a detailed Whole Life Carbon Assessment (WLCA) and Circular Economy Statement (CES) on behalf of Surrey County Council, for the Thames Young Mariners' Outdoor Learning and Development (SOLD) Centre.

Through stakeholder and project team engagement, opportunities to reuse materials from demolition activities and furniture from the existing buildings were identified.

Impact

The principles of designing for flexibility, adaptability and disassembly were also applied, for example: the specification of reconfigurable internal walls to allow spaces to be quickly modified for a range of user needs, but also to allow for potential future usage changes.

The design team were looking to reuse materials already on site, made available by the upcoming demolition works, to reduce the volume of new materials having to be procured.



Circular Economy Case Studies

Kelvedon Park Live Fire Training Centre

Client: Essex County Fire and Rescue Service

Location: Essex

Start date: November 2024

Overview

Pick Everard undertook a circular economy opportunity mapping exercise on behalf of Essex County Fire and Rescue Service for a new live fire training centre to support with planning.

The proposed project design includes significant opportunities to enable circular economy practices, including:

- Relocation and refurbishment of existing structures/buildings
- Reuse of training material and equipment
- Reuse of redundant hardstanding and spoil on site
- Flexible and adaptable building design to enable future upgrades/layout alterations

Impact

Implementation of circular design principles has achieved the following quantifiable benefits:

- The retention, refurbishment and relocation of existing assets has provided a total 270sq.m. (28%) of floorspace
- The refurbishment of existing assets and optimisation of materials has resulted in cost savings of approximately £300k at Stage 3



Interested in learning more?

Our team of circular economy specialists are always available to discuss opportunities, provide you with guidance or trouble-shoot your existing projects.



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[Click here to arrange a free initial consultation.](#)

