



Lewes District Council

# **CIRCULAR ECONOMY**

## ***TECHNICAL ADVICE NOTE***

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# 1. Introduction

- 1.1 Lewes District Council has declared a **climate emergency**. The Lewes District Corporate Plan 2020-2024 is working towards a Carbon Neutral future for the District. This requires a huge effort in many different areas. Plan-making and development management can support the transition to a low-carbon future in a changing climate.
- 1.2 This Technical Advice Note is directed towards encouraging a circular economy approach for the development sectors. The built environment sector is the largest user of materials globally. In the UK, construction is one of the largest consumers of materials and produces more waste than any other sector. In East Sussex and Brighton & Hove construction and demolition wastes (C&DW) amount to over half the total of all wastes produced<sup>1</sup>, of 1.75million tonnes of solid waste handled each year C&DW accounts for 51%.<sup>2</sup>
- 1.3 Extending the life of buildings and recovering and reusing materials at the end of their life can significantly reduce the demand for materials and subsequent waste produced. Adopting a circular economy approach in the development sector will play a significant role in promoting resource efficiency and addressing the challenge of the climate emergency.
- 1.4 This Circular Economy Technical Advice Note has been prepared alongside the LDC Technical Advice Note on Sustainability in Development.

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<sup>1</sup> East Sussex County Council, Construction and Demolition Waste SPD:  
<https://www.eastsussex.gov.uk/environment/planning/mineralsandwaste/>

<sup>2</sup> East Sussex, South Downs and Brighton and Hove Waste and Minerals Local Plan draft revised policies consultation document March 2020:  
<https://eastsussex.objective.co.uk/portal/wmlpr/2020a/r03>

## 2. Background

- 2.1 Circular economy is an approach to the recovery and reuse of materials to minimise waste and the import of replacement resources to help achieve climate resilience and sustainability and as such fits within the context of national, regional and local planning guidance and policy.
- 2.2 Circular economy is an element of Building Community Wealth, one of the main pillars in the **Councils Corporate Plan for 2020-2024** which highlights the circular economy as a sustainable way to build community wealth. The Council is currently piloting a scheme to secure local employment opportunities in Newhaven with the 'Newhaven Local Employment and Training Technical Guidance Note' having recently been approved. This Newhaven Technical Guidance Note seeks to build "community wealth", which is another key aspect of the circular economy.
- 2.3 The National Planning Policy Framework (NPPF) sets out the purpose of the Planning System to contribute to the achievement of sustainable development through three overarching objectives, an Economic, Social and Environmental objective, which includes using natural resources prudently and minimising waste and pollution. These objectives are interdependent and need to be pursued in mutually supportive ways.
- 2.4 The Waste Management Plan for England 2011 sets out the Government's ambition to work towards a more sustainable and efficient approach to resource use and management. The National Planning Policy for Waste (2014) sets out detailed waste planning policies requiring that decisions ensure that the handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities and minimises off-site disposal.
- 2.5 The East Sussex, South Downs and Brighton & Hove Waste and Minerals Local Plan (WMP)<sup>3</sup> seeks to reduce the environmental footprint, in particular greenhouse gas emissions, associated with the production and management of waste and minerals. It takes account of international and national policies relevant to waste and minerals and forms part of the statutory development plan for the area. A number of its policies, particularly those for implementing the waste hierarchy, are especially relevant to the circular economy and have informed this TAN.

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<sup>3</sup> <https://www.eastsussex.gov.uk/environment/planning/mineralsandwaste/>

- 2.6 Policy **WMP3a** of the WMP promotes strategies for waste prevention and re-use, and encourages development that involves the preparation of materials for re-use. It also supports developments that involve the utilisation of materials, or energy, derived from waste as a resource. Policy **WMP3d** sets the objective for waste management during construction, demolition and excavation. The durability of the construction has to be maximised, and waste needs managed as far up the *Waste Hierarchy* as practicable. The waste hierarchy is shown in figure 1 and discussed further in paragraph 4.3. Proposals for development should demonstrate how this is monitored within the construction phase. Policy **WMP3e** requires facilities for efficient waste management to be provided for and identified within the site plan. These should be addressed through the submission of a Site Waste Management Plan which is further explained in this document.

### **3. What is the Circular Economy?**

- 3.1 The circular economy is defined as the approach where materials are retained in use, extracting their maximum value for as long as possible before being reused or recycled, leaving minimum waste. A circular economy would contribute to reducing waste, material cost, vehicle movements, air pollution, and noise. Where a circular approach is adopted, there is an emphasis on repair and reuse. This creates jobs, and means that development is easier adapted for future use.
- 3.2 The circular economy is a systems approach; it includes products, infrastructure, equipment and services and applies to every industry sector, not only the building sector. The circular economy contrasts with a linear economic development approach of 'make, use, dispose' industrial processes and the lifestyles dependent on them; a lifestyle of using up products with a finite lifespan created with finite reserves of materials. The circular approach, by contrast, takes insights from living systems. It considers that our systems should work like organisms, processing nutrients that can be fed back into the cycle.
- 3.3 In the planning context, the circular economy approach can be applied to development of residential and commercial buildings. Innovative design is required where the timeframe of the buildings' use is a starting point, including design principles which allow for longevity, and for adaptability or flexibility to changing requirements and circumstances over the future of these buildings. Residential developments are unlikely to require a comprehensive change, but in contrast non-residential buildings should be

adaptable and flexible and design must consider how a building can be kept in use for as long as possible.

- 3.4 Applying circular economy thinking to the built environment is complex, however there are guiding principles that promote a whole systems approach. These three core principles are summarised in Table 1.<sup>4</sup>

**Table 1 - Core Principles**

Principle	Developers commit to...
<b>Responsible sourcing of materials</b>	<ul style="list-style-type: none"> <li>• Minimise the quantities of new materials used</li> <li>• Minimise the quantities of other resources used</li> <li>• Specify and source materials and other resources responsibly and sustainably</li> </ul>
<b>Designing for circularity</b>	<ul style="list-style-type: none"> <li>• Design for longevity, adaptability or flexibility and reusability or recoverability</li> <li>• Design out construction, demolition, excavation and municipal waste arising</li> </ul>
<b>Managing waste</b>	<ul style="list-style-type: none"> <li>• Manage demolition, excavation and construction waste</li> <li>• Manage municipal waste (household and industrial waste, if applicable)</li> </ul>

- 3.5 The adoption of a Circular Economy approach will mean adapting the design and logistics of a development, which will also allow developers to benefit from cost savings; for instance by purchasing fewer materials and managing less waste arising from the development.
- 3.6 Choosing the most appropriate Circular Economy strategy will depend on context, the nature of the development, and owner and occupier needs. In many cases, a different approach can be adopted for different elements of a particular development. It may be possible to use components of an existing building on the site in the new development and demolish another

<sup>4</sup> Source: pre consultation draft of the Guidance 'A Built Environment for All Londoners' (Mayor of London). The principles are consistent with the Waste Hierarchy and with economy systems thinking approach developed by the Ellen MacArthur Foundation (EMF).

building on the site but recycle or sell its construction components for reuse.

- 3.7 Demolition often leads to large amounts of waste, it also has impacts on the amenity of residents and retaining a building can preserve the character of the surrounding area. Therefore, the re-purpose and refurbishment of existing buildings to new uses is encouraged wherever possible. If the site includes an existing building which is proposed for demolition it is expected that the planning application would outline why it is not suitable for re-purpose.
- 3.8 Some of the different approaches that can be adopted are provided in Table 2. This is not an exhaustive list of methods, but can provide an overarching framework to define the approach/approaches to a given project.

**Table 2 - Approaches to development**

<b>Existing developments or components</b>	
<b>Refurbishment</b>	Redevelopment for similar needs and uses but meeting or exceeding current regulation and standards through restoring, refinishing and future proofing while minimising changes and avoiding replacement of any parts. Parts of historical significance are incorporated in the design and carefully preserved. Designed for longevity, adaptability or flexibility to prolong the new life of the development.
<b>Repurpose</b>	Redevelopment to accommodate different needs and/or uses (e.g. from industrial use to mixed use) but exceeding current regulations and standards through adapting and modifying with significant changes, and replacement of shorter-life parts. Parts of historical significance are incorporated in the design and carefully preserved. Designed for longevity, adaptability or flexibility to prolong the new life of the development.
<b>Deconstruct and reuse</b>	Building/Infrastructure disassembled, with the entire asset being reconstructed elsewhere, or individual components directly reused elsewhere.
<b>Demolish and recycle</b>	Traditional demolition, with elements and materials converted into new elements and materials and objects for use on the site, on another site nearby or sold back into the supply chain.

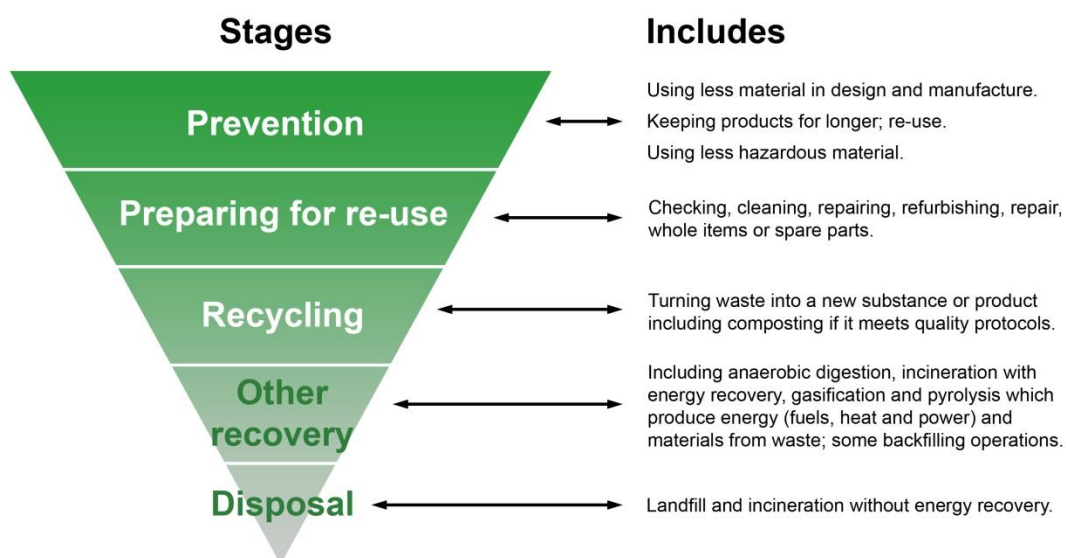
## 4. Expectations for New Development

### Managing waste

- 4.1 The adoption of circular economy principles will contribute to waste reduction as part of the target for developments to produce net zero-waste. The **Sustainability in Development Technical Advice Note** asks for evidence of how construction, demolition and excavation waste have been considered in the planning application. Developments classed as 'major' will be required to submit a Site Waste Management Plan to address this.
- 4.2 It is a requirement set out in Policy 3d of the Waste and Minerals Local Plan for all planning authorities to consider how the applicant proposes to minimise the waste arising from construction, demolition and excavation works in order to maximise the sustainable management of waste and in particular, to minimise the need for landfill capacity.
- 4.3 Key principle of the WMP is the 'waste hierarchy'. The waste hierarchy, as illustrated in Figure 1, represents a ranking of different ways of dealing with waste, in a manner that gives a broad indication of their relative environmental benefits and dis-benefits. The hierarchy therefore acts as a guide to be used when assessing different waste management options.

Figure 1 - Waste Hierarchy

### The Waste Hierarchy





## Sourcing of materials

- 4.4 A circular economy approach aims to save resources, improve resource efficiency and help to reduce carbon emissions. All development must minimise the environmental impact of materials through the use of sustainably-sourced, low impact and recycled materials, using local supplies where feasible.
- 4.5 Where new materials are required several materials certification programmes exist that can provide assurance that materials are responsibly sourced.
- 4.6 The Council recommends the use of the Building Research Establishment Environmental Assessment Methodology (BREEAM). BREEAM is a sustainability assessment and certification scheme for the built environment and provides a widely recognised and well understood framework for the promotion of sustainable design. It allows for the assessment and rating of the environmental life cycle impacts arising from different types of developments, including energy, pollution, water, materials, health and wellbeing, and waste.
- 4.7 The sustainable procurement of materials, including the use of recycled, low impact and sustainably-sourced materials can be achieved by maximising materials ratings on the BRE Green Guide<sup>5</sup>. Targeting relevant BREEAM credits in relation to materials will assist non-residential development to achieve these requirements.
- 4.8 Responsible sourcing of materials also includes avoiding over-ordering of materials or requiring suppliers to participate in 'take-back' schemes where suppliers retrieve packaging and any unused materials.

## Design

- 4.9 In order to support a circular economy approach, all developments must be designed to be adaptable and able to respond to change.

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<sup>5</sup> <https://www.bregroup.com/a-z/the-green-guide-to-specification/>

- 4.10 Residential developments are unlikely to require a change of use in the future and are designed for a longer life span. Functional adaptability may include:
- extendibility
  - potential for entrance level bed space and bathroom
  - potential for space for working from home.
- 4.11 However, non-residential developments are likely to have a shorter life-span, and therefore it is especially important that non-residential developments are designed to be adaptable and flexible. Developers may consider how they will ensure the functional adaptability of their building. This is likely to include one or more of the following approaches:
- a structural layer which enables internal flexibility;
  - internal layouts and modular solutions;
  - building extendibility;
  - flexible services.
- 4.12 All developments must be designed and managed to promote on-going operational sustainability over a long lifetime. All developments in Lewes District should seek to adhere to the '*Guidance for Property Developers: Refuse & Recycling Storage at New Residential and Commercial Developments within Lewes District*<sup>6</sup>.
- 4.13 Building design should also enable deconstruction in order to ensure the maximum value of building components can be recovered at the end of the building's life. There are two main considerations for Designing for Deconstruction: the choice of materials and components; and the way they are put together. In general, materials and components that are composite are harder to recycle. When putting together buildings, connections should be simplified and standardised, and building complexity should be reduced.

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<sup>6</sup> [https://www.lewes-eastbourne.gov.uk/\\_resources/assets/inline/full/0/275794.pdf](https://www.lewes-eastbourne.gov.uk/_resources/assets/inline/full/0/275794.pdf)

## 5. The Sustainability Checklist and Circular Economy Requirements.

- 5.1 Lewes District Council supports the circular economy approach and will ask that development proposals incorporate Circular Economy principles into their proposals. The **Sustainability in Development Technical Advice Note** includes a comprehensive list of sustainability objectives that have circular economy objectives integrated. This Technical Advice Note is specifically aimed at new build commercial and residential development. Whilst there is no requirement for Householder applications to submit the Sustainability Checklist, all developments are encouraged to consider the checklist to inform important early decisions and to influence their design/project.
- 5.2 It is not intended to make the process more burdensome, therefore the submission of information should be proportionate to the development proposed. Therefore the **Sustainability in Development Technical Advice Note** includes a checklist for minor and major applications separately.
- 5.3 The checklist asks a series of questions which should be considered from the outset of your project around how waste can be minimised, but also how your design concept has considered reducing the materials used and how you have designed for the maximum longevity of the buildings proposed. Information provided should be proportionate to the development proposed, therefore for large schemes it is likely you will submit a statement alongside the checklist which sets out how your project is considered sustainable development covering all aspects of the checklist.
- 5.4 You may not know what specific materials are proposed to be used at application stage; therefore you should show a commitment to considering responsibly and locally sourced materials and minimising the quantities of new materials used.
- 5.4 The circular economy approach aims to minimise the wider environmental impacts of materials and construction processes. Buildings must be designed to be adaptable, flexible and able to respond to change in order to extend a building's useful life, ensuring resource efficiency and avoiding unnecessary demolition. To increase contributions to the sustainability objectives, developers are encouraged to integrate circular economy principals from the outset of a project, and therefore it will be requirement

to submit a checklist and/or accompanying statement with all pre-application advice requests for relevant proposals and applications for outline planning permission.

- 5.5 A Site Waste Management Plan (SWMP) is required to be submitted with all major applications to evidence how you will meet the requirements of WMP3 of the WMP. A SWMP should include, where relevant to the proposal the types and quantities of waste that will be generated during the demolition (if any) and construction phases and the measures to ensure that waste is managed in accordance with the waste hierarchy. Planning Statements should set out how waste will be dealt with during the operational phase of the development in terms of the waste hierarchy.

# Appendices

## Appendix 1: Additional Resources / Further Reading

### **BREEAM**

The BREEAM In-Use (BIU) assessment process adopts circular economy concepts to rethink how resources are considered. BIU ratings are scored against key environmental categories that assess a building's environmental performance and management. These categories are based on influential factors including: energy and water efficiency, health and wellbeing benefits to occupants, biodiversity, access to sustainable transport, resilience to risks including from climate change and circular economy principles (waste and materials). Performance against these categories determine a development's overall BREEAM In-Use rating from good and best practice to beyond.

Further information is available here: <https://www.breeam.com/discover/technical-standards/breeam-in-use/>

### **BSI (The British Standards Institution)**

Published in May 2017, BS 8001 is the first practical framework and guidance of its kind for organisations to implement the principles of the circular economy and has been written in way so that it can be used wherever they are in the world. It is intended to apply to any organisation, regardless of location, size, sector and type. It will be useful to those with varying levels of knowledge and understanding of the circular economy. It provides practical ways to secure smaller 'quick-wins', right through to helping organisations re-think holistically how their resources are managed to enhance financial, environmental and social benefits.

Further information is available here: <https://www.bsigroup.com/en-GB/standards/benefits-of-using-standards/becoming-more-sustainable-with-standards/BS8001-Circular-Economy/>

### **The Ellen MacArthur Foundation**

The Ellen MacArthur Foundation was launched in 2010 to accelerate the transition to a circular economy. Since its creation the charity has emerged as a global thought leader, establishing the circular economy on the agenda of decision makers across business, government, and academia.

Further information is available here:

- <https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy>
- <https://www.ellenmacarthurfoundation.org/our-work/activities/circular-economy-in-cities>
- <https://www.ellenmacarthurfoundation.org/resources/learn/circular-design-toolkit>

### **GOV.UK - U1 waste exemption: use of waste in construction**

The U1 exemption allows you to use suitable waste, rather than virgin raw material or material that has ceased to be waste, in construction activities. However, a quality protocol must be complied with.

Further information is available here:

<https://www.gov.uk/guidance/u1-waste-exemption-use-of-waste-in-construction>

### **Mayor of London**

The Mayor has set out his vision of London transitioning to a circular economy in the draft London Plan and his Environment Strategy. The Design for a Circular Economy Primer has been written to help support organisations in the built environment sector understand how they can embed circular economy principles into their projects and design processes.

Design for a Circular Economy Primer is available here:

[https://www.london.gov.uk/sites/default/files/design\\_for\\_a\\_circular\\_economy\\_web.pdf](https://www.london.gov.uk/sites/default/files/design_for_a_circular_economy_web.pdf)

Circular Economy Statement Guidance - pre-consultation draft is available here:

<https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/planning-guidance/circular-economy-statement-guidance-pre-consultation-draft>

### **TU Delft**

TU Delft has established itself as one of the leading technical universities in Europe and offers a range of online technical educational courses.

Further information is available here:

- <https://ocw.tudelft.nl/courses/circular-economy/>
- <https://online-learning.tudelft.nl/courses/circular-economy-design-and-technology/>
- <https://online-learning.tudelft.nl/courses/circular-economy-for-a-sustainable-built-environment/>

## **UKGBC – UK Green Building Council**

UKGBC was originally established to offer clarity, cohesion and leadership to a disparate sector, and to campaign for a sustainable built environment. UKGBC is working with its members and other stakeholders to develop practical guidance, raise awareness, and influence policy to enable organisations working in the built environment to overcome the barriers to implementing circular economy principles.

Further information is available here: <https://www.ukgbc.org/our-mission/>  
<https://www.ukgbc.org/ukgbc-work/circular-economy/>

## **WRAP**

*How Moving To A Circular Economy Can Help The UK To Build Back Better.* WRAP believes that adopting a more circular economy could help the UK recover from the economic impact of the COVID-19 pandemic. Further information is available here: <https://wrap.org.uk/buildbackbetter>

*Assessing the costs and benefits of reducing waste in construction.* Reducing, reusing and recycling waste can help to reduce costs on construction projects. Further information is available here:

<https://www.wrap.org.uk/sites/files/wrap/CBA%20Summary%20Report1.pdf>

*Builders: Reducing the cost of waste on site.* WRAP operated a programme of work supporting the construction industry in reducing waste and improving resource efficiency. Further information is available here:

<https://www.wrap.org.uk/sites/files/wrap/Onsite%20Builders.pdf>

## Appendix 2: Glossary of Key Definitions

Term	Definition
Construction and demolition waste	Arises from construction and demolition activities including smaller do-it-yourself project within private households. Wastes may include concrete, bricks, tiles, ceramics, wood, glass, plastic, bituminous mixtures, coal tar, metals, insulation and gypsum among other materials.
Excavation waste	Material excavated from construction sites, including rock, sand, stones and soils uncontaminated with dangerous substances.
Flexibility	Designed to balance the needs of the present with how those needs will change in the future and designed for change through frequent reconfiguring including reconfiguration of non-structural parts.
Industrial waste	Waste produced by industrial activity which includes any material that is rendered useless during a manufacturing process such as that of factories, industries, mills and mining operations.
Municipal waste	Household waste and other waste similar in composition to household waste irrespective of who collects it or disposes of it. It includes all household waste, street litter, waste delivered to council recycling points, municipal parks and gardens wastes, council office waste, Civic Amenity waste, and some commercial waste from shops and smaller trading estates. It can also include industrial waste similar in nature to municipal waste. Waste under the control of local authorities or agents acting on their behalf is now better known as 'Local Authority Collected Waste'
Recovery	To obtain value from wastes through one of the following means recycling, composting or energy recovery
Recycling	The processing of waste materials into new products to prevent waste of potentially useful resources. This activity can include the physical sorting of waste which involves separating out certain materials from mixed waste.
Reuse	The use of a product in its original form with minimal reprocessing, that was originally destined for waste or recycling.