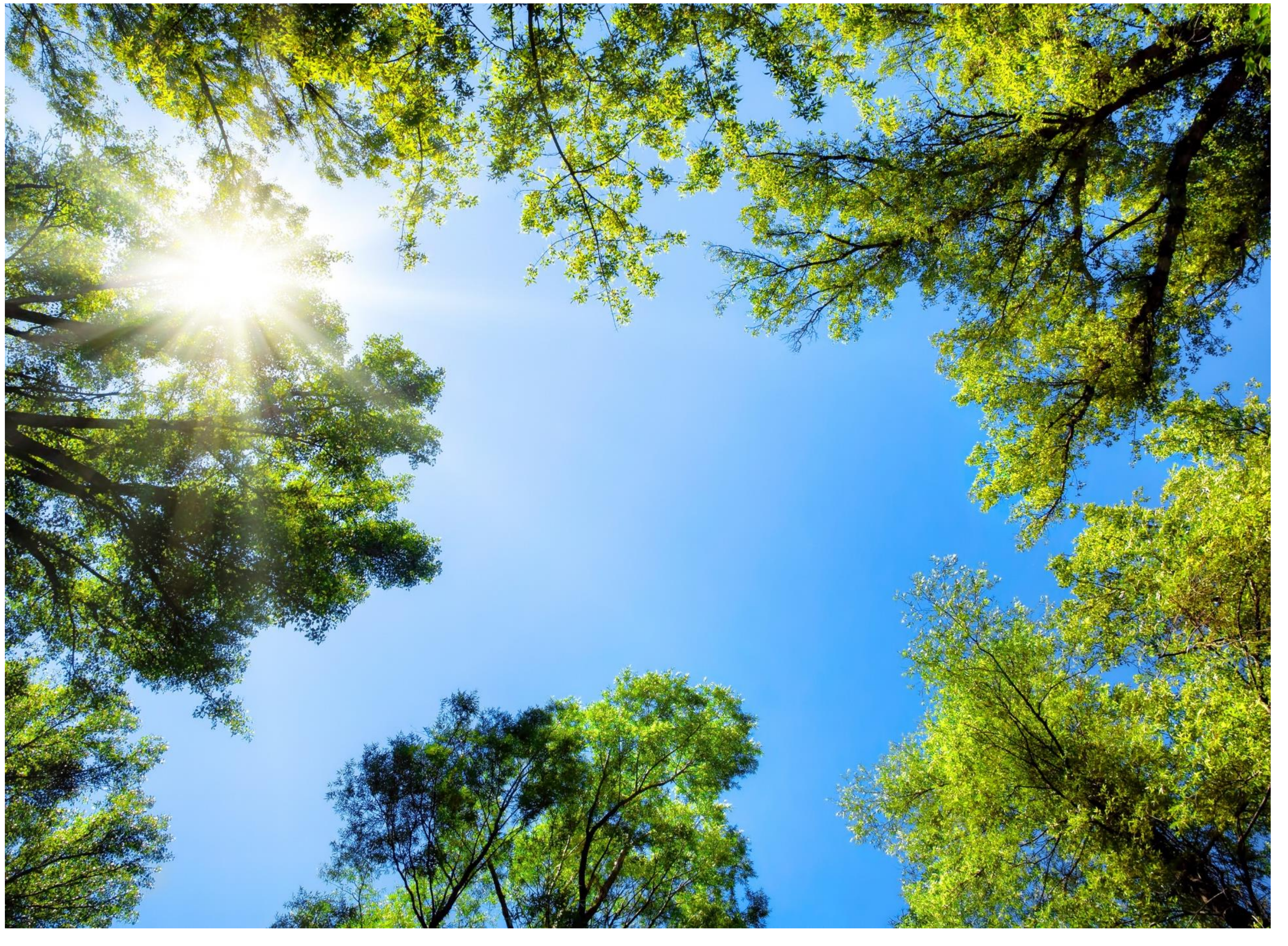
CAMDEN GOODS YARD

15112-WAT-XX-XX-RP-V-59006

CGY Circular Economy Statement

March 2025



Camden Goods Yard

Property Sustainability Services
Circular Economy Statement
RIBA Stage 2
15112-WAT-XX-XX-RP-V-59006

March 2025

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Revision		**Status**	
P*nn*	Preliminary (shared; non-contractual)	S1	Coordination
C*nn*	Contractual	S2	Information
		S3	Review & Comment
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EXECUTIVE SUMMARY

This document has been prepared by Waterman Building Services on behalf of St George West London Limited ('the Applicant'), providing a Circular Economy Statement Proposed Development to vary the extant planning permission for the Camden Goods Yard project. The Planning Statement provides the full description of the proposal.

Please refer to the Planning Statement for the planning history. It should be noted that redevelopment of the Main Site was granted for the Original Permission 15th June 2018 (application reference: 2017/3847/P) was then amended by the December 2020 Planning Permission (ref 2020/3116/P). Therefore, a Pre-Redevelopment and Pre-Demolition Audit were not required for these planning applications including the blocks that form part of the Proposed Development in this application.

This document accompanies the GLA Circular Economy Statement (CES) Assessment Template, which has been developed to meet the relevant planning Policy D3 ('Optimising site capacity through a design-led approach') and SI 7 B ('Reducing waste and supporting the Circular Economy') of the London Plan (Ref. 1), and has been produced in line with the GLA Circular Economy Statement Guidance (Ref. 2). This document aims to communicate how the Proposed Development has embraced circular economy principles, to ensure the adoption of sustainable methods and ultimately support the creation of a more circular and resilient city.

As part of the Circular Economy Principles the Proposed Development has pursued, the following commitments have been made:

A minimum of 95% of excavation waste will be put to beneficial use.

A minimum of 95% of construction and demolition waste will be diverted from landfill.

A minimum of 65% municipal waste will be recycled by 2030.

A minimum of 20% reused/recycled content by value specified across the Proposed Development.

The building has been considered with various layers, each with different design requirements and design approaches. For example, the structural frame is considered to not need replacing through the lifespan of the building, and therefore embodied carbon in the use stage of the development should be minimised as far as is practicable. In-situ concrete for load bearing elements has been specified with 20% cement replacement with the ambition of increasing this where appropriate.

Other layers which may need replacing several times over the lifespan of the building, such as building services, will be designed with accessibility in mind, to minimise damage to nearby components during replacement and maintenance.

It is important that all design considerations and improvements to achieve the Circular Economy objectives are documented and included within the Contractor requirements to ensure that these are implemented during the Construction Phase.

An updated Circular Economy Statement shall be produced post-completion to evaluate the as-built impact, and will provide reasoning behind any significant differences should they arise.

1 INTRODUCTION

1.1 Background

This document has been prepared by Waterman Building Services on behalf of St George West London Limited ('the Applicant'), providing a Circular Economy Statement for the Proposed Development to be submitted as a s73 application for the Camden Goods Yard project. The Planning Statement provides the full description of the proposal.

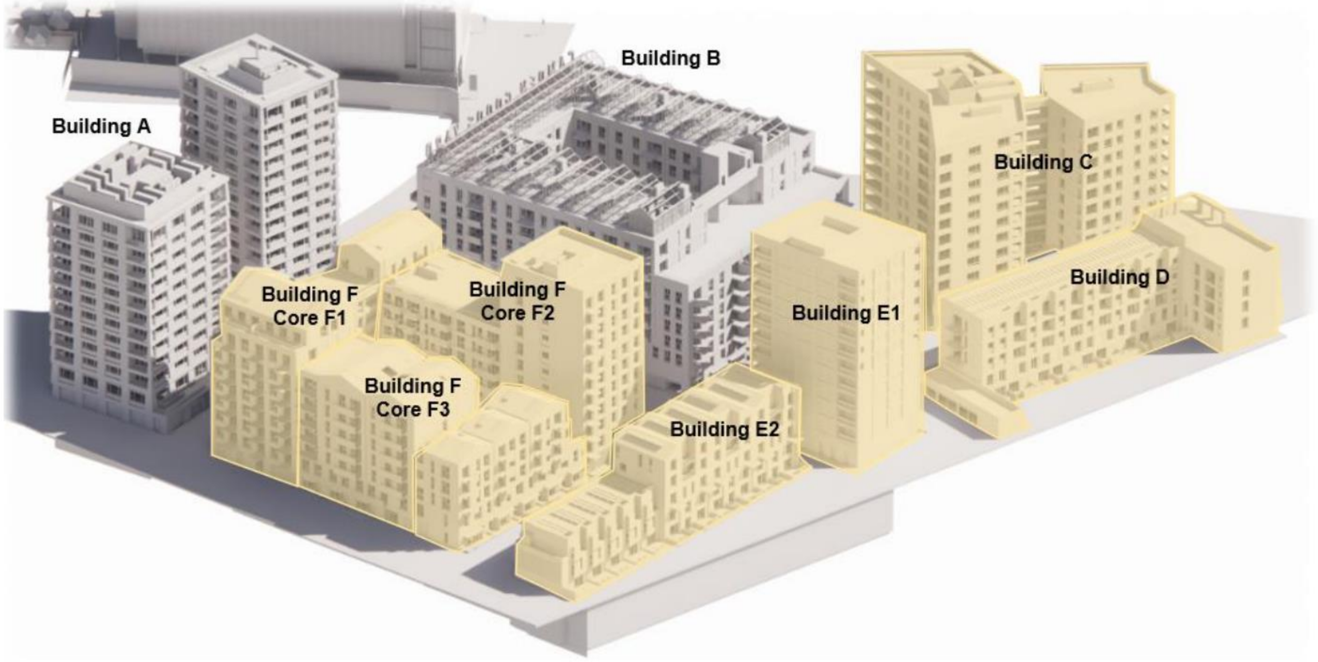
This document accompanies the GLA Circular Economy Statement (CES) Assessment Template, which has been developed to meet the relevant planning Policy D3 and SI 7 B of the London Plan (Ref. 1) and produced in line with the GLA Circular Economy Statement Guidance (Ref. 2). The purpose of this document is to detail the Circular Economy Principles that have been adopted within the design of Blocks C, D, E1, E2 and F, and highlight how the Proposed Development intends to meet the targets set by the GLA, and relevant policy requirements.

The report concludes that all targets relating to recycled content and diverting waste from landfill will be met. The Proposed Development has been considered according to its constituent layers, with each layer embedding the most relevant circular economy principles, respectively.

1.2 Site Context

The Main Site parcel within the Site, highlighted in Figure 1, is located on Chalk Farm Road, London, NW1 8EH, within the London Borough of Camden. The full Site extends to an area of approximately 3.264 ha and is bounded by Chalk Farm Road to the North, railway lines to the South, the Juniper Crescent HS2 Project Offices to the West, and Regent's Canal to the southeast of the Site.

Figure 1: Blocks forming part of the Proposed Development (shaded yellow) (Main Site only. PFS Site also forming part of Camden Goods Yard not shown)



1.3 Proposed Development Description

The Proposed Development forming part of this s73 application to vary the extant permission for the Camden Goods Yard development is summarised in the description of the proposal in the accompanying Planning Statement.

The Proposed Development comprises the proposed amendments in respect of Blocks C, D, E1, E2 and F of the Main Site Parcel, identified in the detail within the accompanying DAS Addendum and identified here for ease of reference:

- Insertion of secondary stairs to Blocks C, E1 and F in accordance with fire safety guidelines for residential buildings
- Reduction of affordable housing from 38% to 15% by habitable room (from 203 to 83 homes)
- Minor tenure and unit mix changes to approved plans
- Marginal increase to footprint of Block E1 (0.5m on the east, west and north elevations) to accommodate a secondary staircase
- Minor reduction in heights of Blocks C, D, E1, E2 and F.

The following conditions attached to the Operative Permission control development and are the subject of this S73 Application:

- Condition 3, 4 and 6 - approved drawings and documents – these contains drawings which identify affordable homes (references amended) and new drawings are submitted to comply with fire regulations including a second stair core introduced into Blocks C, E1 and F and associated changes.
- Condition 5 - contains drawings which identify affordable homes (references amended). The condition also refers to the 'affordable housing statement (June 2017)' which is amended.
- Condition 73 - refers to '203 affordable' homes. This will be revised to '83 affordable homes'. The condition also refers to a total of 27,983sqm GEA of non-residential floorspace. This is revised to 28,792sqm, a de minimis increase of 809sqm following re-measurement of the scheme and marginal building footprint increase to building E1. We also note that the 2,769 sqm GEA of ancillary floorspace (gym, concierge, plant room, parking and energy centre) previously referred to in condition 73 (2020/3116/P, dated 3rd December 2020) has unintentionally been omitted from the Operative Permission and is proposed for reinserted.

The original planning permission for the Camden Goods Yard Site – comprising the Main Site and PFS Site was granted detailed planning permission 15 June 2018 (application reference: 2017/3847/P). This was then amended by a s73 application for the December 2020 Planning Permission (ref 2020/3116/P). Therefore, a Pre-Redevelopment and Pre-Demolition Audit were not required for these planning applications.

Table 1: Housing Quantum

	Consented	Proposed	Variance
Total Homes	644	637	-7
Habitable Rooms	1,722	1,669	-53
Private Homes	441	554	113

Private Habitable Rooms	61.9%	85.3%	23.4%
Affordable Homes	203	83	-120
Affordable Habitable Rooms	38.1%	14.7%	-23.4%
Private Floor Area (m² GIA)	36,712	49,677	12,956
Affordable Floor Area (m² GIA)	19,809	8,063	11,746

Table 2: Non-residential floor space

Type	Location	Consented*	Proposed
Retail (A1-A3)	Main Site	911	904
	PFS	1,110	1,110
Supermarket (A1)	Supermarket	17,709	17,709
	Retail Area	3,786	3,786
	Car Park	8,820	8,820
	Back of Operations	5,103	5,103
Office	Main Site	4,078	4,077
	PFS	9,080	9,080
Affordable Office (B1a)	Main Site	941	941
Workspace (B1c)	Main Site	684	717
Urban Farm (Sui Generis)	Main Site	1,304	1,304
Community Space	Main Site	74	74
Total		**35,890**	**35,917**

**Main site areas as per 2020 s73 (ref. 2020/3116/P) as amended by NMAs (ref. 2021/3337/P, 2022/4273/P, 2022/5571/P, 2023/1560/P, 2024/2791/P and 2024/4323/P,). PFS areas as per 2023 s73 ref. 2022/3646/P.*

Based on the Proposed Areas shown in and **Error! Reference source not found.**, the Gross Internal Area (GIA) of the Proposed Development has been modelled as 93,657m²

1.4 Policy

1.4.1 London Plan

The London Plan policies D3 'Optimising site capacity through a design-led approach', and SI7 'Reducing waste and supporting the Circular Economy' set out a policy framework that supports the delivery of a circular built environment.

Policy D3 'Optimising site capacity through a design-led approach'

"Aim for high sustainability standards and take into account the principles of the circular economy".

> "To minimise the use of new materials, the following circular economy principles should be taken into account at the start of the design process and, for referable applications or where a lower local threshold has been established, be set out in a Circular Economy Statement (see Policy SI 7 Reducing waste and supporting the circular economy):

- Building in layers – ensuring that different parts of the building are accessible and can be maintained and replaced where necessary
- Designing out waste – ensuring that waste reduction is planned in from project inception to completion, including consideration of standardised components, modular build and re-use of secondary products and materials
- Designing for longevity
- Designing for adaptability or flexibility
- Designing for disassembly
- Using systems, elements or materials that can be re-used and recycled.

Large-scale developments in particular present opportunities for innovative building design that avoids waste, supports high recycling rates and helps London transition to a circular economy, where materials, products and assets are kept at their highest value for as long as possible. Further guidance on the application of these principles through Circular Economy Statements will be provided.

A hierarchy for building approaches maximises use of existing materials. Diminishing returns are gained by moving through the hierarchy outwards, working through refurbishment and re-use through to the least preferable option of recycling materials produced by the building or demolition process. The best use of the land needs to be taken into consideration when deciding whether to retain existing buildings in a development.

Shared and easily accessible storage space supporting separate collection of dry recyclables, food waste and other waste should be considered in the early design stages to help improve recycling rates, reduce smell, odour and vehicle movements, and improve street scene and community safety.

Buildings and spaces should be designed so that they can adapt to changing uses and demands now and in the future. Their lifespan and potential uses or requirements should be carefully considered, creating buildings and spaces that are easy to maintain, and constructed of materials that are safe, robust and remain attractive over time."

Policy SI7 'Reducing waste and supporting the Circular Economy'

Resource conservation, waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:

1) Promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible;
2) Encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products;
3) Ensure that there is zero biodegradable or recyclable waste to landfill by 2026;
4) Meet or exceed the municipal waste recycling target of 65 per cent by 2030;
5) Meet or exceed the targets for each of the following waste and material streams:
   a. Construction and demolition – 95 per cent;
   b. Excavation – 95 per cent beneficial use;
6) Design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

Referable applications should promote circular economy outcomes and aim to be zero waste to landfill. A Circular Economy Statement should be submitted, to demonstrate:

1) How all materials arising from demolition and remediation works will be re-used and/or recycled;

2) How the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life;

3) Opportunities for managing as much waste as possible on-site;

4) Adequate and easily accessible storage space and collection systems to support recycling and re-use;

5) How much waste the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy;

6) How performance will be monitored and reported.

Development Plans that apply circular economy principles and set local lower thresholds for the application of Circular Economy Statements for development proposals are supported.

1.5 Method Statement

A multi-disciplinary workshop was held with the design team out on 28th January 2025 to discuss the following with the Project Team:

- Policy requirements;
- Required documents / studies;
- Circular Economy design approach for the new building;
- Circular Economy principles;
- Key commitments that should be included in the CES.

The provided information has been used to populate the GLA CES Template as well as the reporting forms presented in this document. This document has been produced in line with the GLA Circular Economy Statement Guidance (Ref. 2) and includes all the sections that are highlighted in Table 3.

Table 3: Minimum Submission Requirements at Different Stages

Requirements	Pre-application Stage	Outline Application	Full Application	Post-Construction	Supporting Evidence in the CES template spreadsheet
	RIBA Stage 0-2	RIBA Stage 0-2	RIBA Stage 2-3	RIBA Stage 4-7	
CE Targets	Encouraged	Yes	Yes	Yes	Yes
CE Design Approaches	Yes	Yes	Yes	No	Yes
CE Design Principles	Yes	No	No	No	Yes
CE Design Principles by layer	No	Yes	Yes	No	Yes
Pre-redevelopment Audit	Encouraged	Yes	Yes	No	Yes
Pre-demolition Audit	Encouraged	Yes	Yes	No	Yes
Bill of Materials	No	Yes	Yes	Yes	Yes
End of Life Strategy	No	No	Yes	Encouraged	Yes
Operational Waste Management Plan	No	No	Yes	Encouraged	Yes
Recycling and Waste Reporting Section	No	Yes	Yes	Yes	Yes
Lessons learned and achievements	No	No	No	Yes	Yes

Note that a Pre-redevelopment Audit and Pre-demolition Audit are not required for this s73 application, as a result of construction having commenced following detailed planning permission being granted on 15th June 2018 (application reference: 2017/3847/P).

1.6 Circular Economy Aspirations

The Proposed Development will achieve BREEAM 'Excellent' certification for both the office workshops and retail area which includes Blocks C, D, E1, and F forming part of the scope of the Proposed Development (and this assessment), assessed under BREEAM UK New Construction (NC) version 6.1, in line with Local Plan and GLA requirements. BREEAM UK NC v6.1 represents high standards in environmental, social and economic sustainability performance.

A BREEAM Pre-Assessment has been undertaken for the office workshops (Blocks C and F) and retail (Blocks C, D, E1, and F) scheme, of the Proposed Development to set out the preliminary BREEAM strategies and required steps.

Table 4 shows an overview of the credits that have been identified as setting out best practice in response to circular economy principles as well as which of them are targeted according to the BREEAM Pre-Assessments. Through pursuit of the BREEAM criteria, the design of the Proposed Development will address the principles of the circular economy, particularly those relating to materials, waste, adaptability and disassembly. It is expected that the measures addressed within these credits will be explored and considered throughout the residential portion of the scheme, being implemented where practicable.

Table 4: BREEAM Credits setting out best practice in response to CE principles

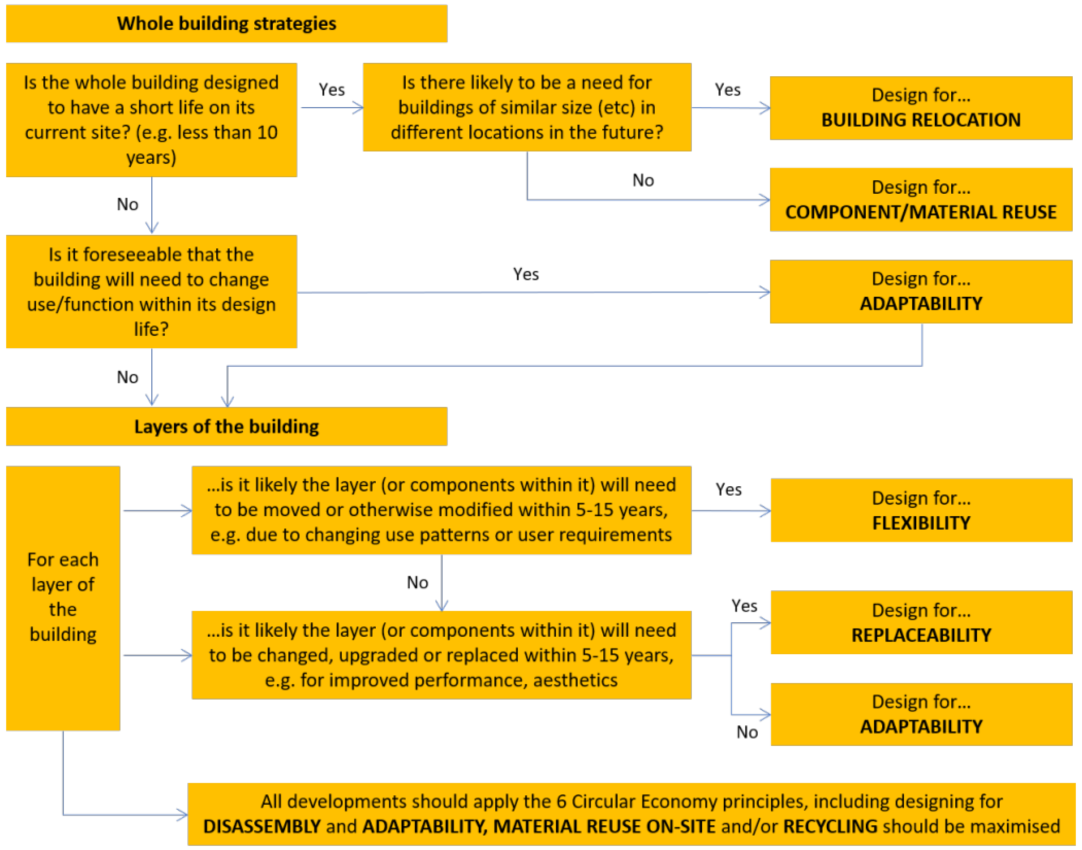
Credit		Credit targeted?
Man 03	Responsible Construction Practices	Targeted
Ene 01	Reduction of Energy Use and Carbon Emissions	Targeted
Ene 02	Energy Monitoring	Targeted
Wat 01	Water Consumption	Targeted
Wat 02	Water Monitoring	Targeted
Mat 01	Life Cycle Impacts	Targeted
Mat 02	Environmental Product Declarations	Targeted
Mat 03	Responsible Sourcing of Materials	Targeted
Mat 05	Designing for Durability and Resilience	Targeted
Mat 06	Material Efficiency	Not Targeted
Wst 01	Construction Waste Management	Targeted
Wst 02	Sustainably Sourced Aggregates	Not Targeted
Wst 03	Operational Waste	Targeted
Wst 05	Adaptation to Climate Change	Targeted
Wst 06	Design for Disassembly and Adaptability	Targeted
LE 01	Site Selection	Targeted

2 CIRCULAR ECONOMY DESIGN APPROACHES

2.1 Proposed Development

As with the approach to the existing buildings, CE principles must be considered in the design of the proposed scheme. Figure 2 shows the Decision Tree for Design Approaches for New Buildings, as provided in the current GLA Circular Economy Statement Guidance (Ref. 2), this offers the basis of the approach followed for the Proposed Development.

Figure 2: Decision Tree for Design Approaches for New Buildings and Layers



The Proposed Development will be designed for a long lifespan, in line with industry specifications. It is also not foreseeable that the building will need a change in use / function within its design life.

When considering the layers of the building, the items with design lives of more than 15 years will be designed to be flexible, within the limits of maintaining a lean design. For example, if a change of use to residential is desired, the Proposed Development will have sufficient structural loading capacities, floor to ceiling heights, and adjustability with internal layouts to accommodate this change.

The layers of the building that are expected to be replaced within 5-15 years, such as the interiors and some MEP layers, will be designed for easy maintenance and replaceability, ensuring that these can be accessed with minimal damage to other layers and components.

Table 5 summarises the Circular Economy design approaches for the new buildings (Blocks C, D, E1, E2 and F), in accordance with the GLA Circular Economy Statement Guidance spreadsheet. These approaches are further discussed in the next sections of this document.

Table 5: GLA Table for Circular Economy Design Approaches for the New Buildings

Design Approaches for New Buildings Over the Lifetime of the Development		**Applicant Response**
Is the whole building designed to have a short life on its current site? (e.g. less than 10 yrs)		No
Circular Economy Design Approach	**Building/Area/Layer**	**How will the approach be investigated**
Building relocation	Whole Building	The Proposed Development is expected to have a long life (greater than 10 years), therefore building relocation is not considered.
Component or material reuse	Whole Building	The Applicant will actively promote the sustainable sourcing of materials by prioritising the use of recycled, reclaimed, and renewable content. A key focus will be placed on integrating materials that support circular economy principles, ensuring they can be repurposed, reprocessed, or reintegrated into future projects. To minimise environmental impact and reduce reliance on raw materials, the Applicant will aim for a minimum of 20% recycled or reused content across all major building elements. Specific material targets and sourcing requirements are detailed in the Bill of Materials table. Additionally, efforts will be made to explore innovative material solutions, enhance supply chain transparency, and collaborate with stakeholders to maximise resource efficiency and waste reduction.
Adaptability	Frame, Space	The building frame, and some elements of the space are not likely to be moved, modified, changed etc. within 5-15 years, and have therefore been designed for Adaptability. The scheme has been strategically designed to ensure that it remains functional, durable, and adaptable over its lifecycle. While the overall development prioritises long-term stability, the retail areas are expected to undergo more frequent changes due to evolving market demands and tenant requirements. To address this, the BREEAM assessment will focus on securing key credits that enhance adaptability and flexibility within the commercial spaces. These include: • HEA04 – Design for Future Comfort: Ensuring indoor environments remain adaptable to changing climate conditions and user needs. • ENE01 – Energy Performance: Optimising operational efficiency to reduce energy demand and enhance long-term performance. • MAT05 – Designing for Durability and Robustness: Selecting materials that extend the lifespan of building elements while minimising maintenance needs. • WST05 – Resilience of Structure, Fabric, and Building Services: Incorporating climate resilience strategies to protect against extreme weather events and material degradation. • WST06 – Design for Disassembly and Functional Adaptability: Embedding circular economy principles by enabling components to be disassembled, reused, or repurposed at the end of their lifecycle, thus reducing construction waste and supporting material circularity.
Flexibility	Shell, Frame, Space	The retail units have been purposefully designed with flexibility, delivered in a shell and core state to accommodate a diverse range of future uses. This

		approach allows for customisation by tenants and ensures that the spaces can be easily adapted to evolving market demands, minimising the need for extensive structural modifications and reducing material waste. The structural framework has been designed to facilitate: • Multi-use adaptability, allowing units to be reconfigured into flexible spaces, retail environments, or even converted into residential apartments. • Construction methodologies prioritising modular and demountable elements, enabling future alterations with minimal disruption while maximising material recovery at the end of their lifecycle. • The use of durable materials and a resilient structural framework enhancing the lifespan of the building, ensuring it can adapt to evolving needs while reducing environmental impact.
Replaceability	Services, Stuff, Space	The Berkeley Group is committed to implementing Modern Methods of Construction (MMC) to enhance resource efficiency, minimise waste, and support circular economy principles. Retail projects demand high adaptability and flexibility to accommodate evolving tenant requirements, market trends, and consumer behaviours. MMC allows building components to be easily repaired, upgraded, or repurposed without extensive demolition, extending the structure's lifespan while reducing reliance on raw materials. Compared to traditional construction, MMC optimises material usage, reduces waste, and enables precision manufacturing, ensuring components can be disassembled, reconfigured, or relocated with minimal environmental impact.
Disassembly	Whole Building	As per the GLA Decision Tree all building layers should consider designs incorporating the circular economy principle of Disassembly. The structure has been designed for disassembly, reuse, and material circularity, ensuring that components and products can be efficiently dismantled, repurposed, or recycled at the end of their useful life. By embedding design for disassembly (DfD) principles, the project promotes a closed-loop construction system, reducing waste and enhancing sustainability. Key strategies include: • Components and materials will be chosen based on their ability to be easily removed, replaced, or reconfigured, minimising demolition waste and extending their lifecycle. • A detailed digital record of materials and construction methods will be stored to support future disassembly, refurbishment, and waste reduction strategies. • Contractors and subcontractors will be required to provide method statements for disassembly, reuse, and waste management, which will be integrated into the Operation and Maintenance (O&M) Manuals as a contractual obligation. • The building will incorporate modular elements and demountable connections, ensuring that sections of the structure can be refurbished or repurposed rather than demolished.
		• Prioritising waste avoidance and circular material flows to lower carbon emissions, minimise reliance on raw materials, and futureproof the building for evolving needs.
Longevity	Whole Building	As per the GLA Decision Tree all building layers should consider designs incorporating the circular economy principle of Longevity. The proposed development is designed as a long-life, resilient structure, ensuring its sustainability and relevance for generations to come. As a residential-led scheme, it is intended to provide stable, enduring living environments rather than undergo frequent changes. Therefore, the design is guided by principles of longevity, durability, and climate resilience, ensuring that materials and construction methods support long-term use with minimal environmental impact. Key strategies include: • The development will incorporate robust, high-quality materials and construction techniques that enhance resistance to environmental stressors, including extreme weather conditions and temperature changes, reducing the need for repairs or premature replacements. • All flats are designed in accordance with Berkeley Group's Our Vision design standards, ensuring that internal layouts can adapt to evolving resident needs and occupancy changes over time, maximising usability and minimising the necessity for extensive refurbishments. • The selection of low-maintenance, long-lasting materials reduces resource consumption over the building's lifespan, while a circular economy approach encourages recyclable and reusable components, minimising waste generation. • The development is designed to accommodate future retrofitting and upgrades without the need for extensive structural changes, ensuring that energy efficiency improvements and user adaptations can be easily integrated over time.

3 CIRCULAR ECONOMY DESIGN PRINCIPLES BY BUILDING LAYER

This section indicates how the Circular Economy (CE) Principles will be implemented in the different building layers. The six CE Principles that have been identified in the GLA Circular Economy Statement Guidance (Ref. 2) are the following:

1) Building in Layers
2) Designing out Waste
3) Designing for Longevity
4) Designing for Adaptability or flexibility
5) Design for Disassembly
6) Using systems, elements or materials that can be reused and recycled

3.1 Building in Layers

It is important to treat the building as having multiple layers, due to the inherent properties associated with each layer as illustrated in Figure 3. For example, the structural frame will be expected to have a much longer lifespan than the internal finishes of a building. As such, the design approach must vary according to the layer to ensure optimisation of materials and systems, while minimising waste. Table 6 provides an overview of the preferred strategy per building layer and supporting narrative.

Figure 3: Building Layers and their Indicative Lifespans

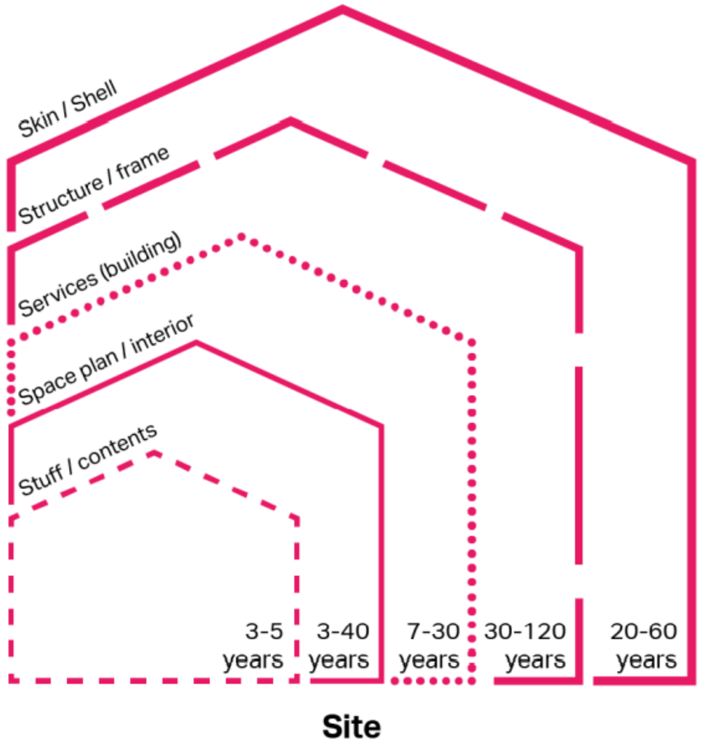


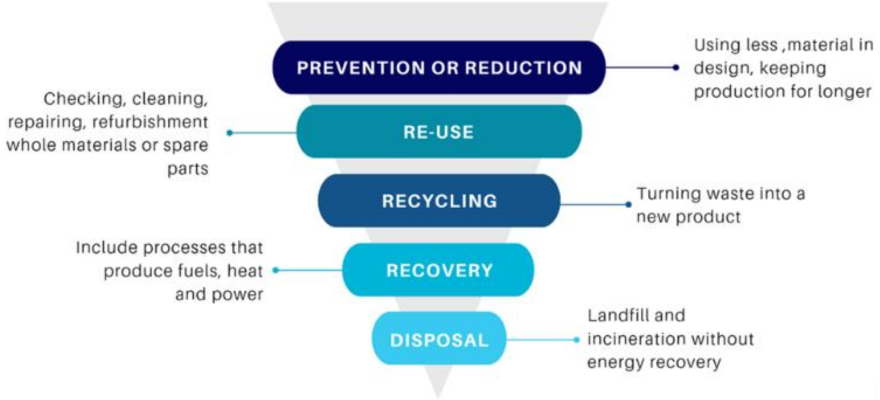
Table 6: Strategy by Building Layer

Layer	CE Strategy	Narrative
Skin / Shell	**Design for Longevity** **Design for Disassembly**	All building elements to be specified with long design lives in accordance with industry standards Adequate waterproofing details to mitigate risk of water damage to structural elements and finishes. Materials selected that require limited maintenance Precast façade considered for disassembly of the façade and reuse at the end of life Modular design where possible to allow for repeatable disassembly strategies. Non-load bearing façade to allow for easier disassembly
Structure/ Frame	**Design for Longevity** **Design for Adaptability**	All building elements to be specified with long design lives in accordance with industry standards Adequate waterproofing details to mitigate risk of water damage to structural elements and finishes. Specification of reinforced concrete for the main structural frame in particular will provide excellent durability and resilience with little need for remedial maintenance Core location and standardised structural grid allows for adaptability Open floor space allowing for more flexible change in use Reinforced concrete (RC) frame and piled foundations with a minimum 60-year lifespan (potentially over 100 years with maintenance).
Building Services	**Design for Replaceability** **Design for Adaptability**	Accessible Building Services to avoid damaging other systems when replacing / maintaining Connected to a district-wide heating system, enhancing energy efficiency and reducing reliance on fossil fuels. Incorporation of mechanical ventilation with heat recovery (MVHR) and openable windows for dual adaptability Eliminates unnecessary material waste by allowing modular and component-level replacements.
Space plan/ Interior	**Design for Replaceability** **Design for Flexibility** **Design for Disassembly**	Layout that can easily be adjusted to different use types. Bare finishes where possible and avoidance of secondary finishes to materials Mechanical connections where possible Modular design where possible
Stuff	**Design for Replaceability** **Design for Flexibility** **Design for Disassembly**	High-quality kitchens, appliances, and sanitary ware selected for long life and ease of maintenance. Modular installation methods enable component-level replacements without requiring full-scale refurbishment. Minimisation of different material types to enhance disassembly and recycling potential.

3.2 Designing Out Waste

The Waste Hierarchy (Figure 4) underpins the key themes of Circular Economy, by minimising the amount of waste sent to landfill while also maximising the residual value of any waste arisings. The Waste Hierarchy should be embedded during the design stage, to subsequently be implemented at construction. By adopting lean design principles, waste arisings will be prevented at the highest level of the hierarchy. Any remaining materials should then be designed with the successive hierarchy levels in mind, ensuring that the lifespans of materials are considered for the construction of each building element, to facilitate re-use or recycling materials at the end of each replacement interval, as well as the end of life for the Proposed Development.

Figure 4: The Waste Hierarchy



3.2.1 Manage Excavation Waste

Excavation waste is not relevant to this project, as the Proposed Development does not require significant ground or enabling works as part of the planning application. This is due to the fact that demolition and ground waste took place on the Main Site parcel in 2021 and therefore does not form part of the scope of this assessment. As a result, waste management strategies will focus on other material streams associated with construction, ensuring alignment with circular economy principles and sustainable resource use.

3.2.2 Manage Construction Waste

The Construction Waste estimated to arise from Blocks C, D, E1, E2 and F is 4,317 tonnes, based on data from the whole life carbon assessment (OneClick LCA). Of this, 87.3% is estimated to be recycled, 12.7% to be reused, and a further 0.1% to be recovered depending on the degree of contamination etc. This therefore means the scheme estimated diversion of construction waste from landfill exceeds the GLA's target of 95%. At the construction stage, the actual figures of construction waste will be monitored and recorded, including where the waste is sent, to confirm that the 95% diversion from landfill target is still being met.

Additional waste recovery and savings measures should be explored during the construction stage to further reduce the tonnes of construction waste that arises while simultaneously increasing the proportion of waste diverted from landfill.

3.2.3 Designing Out Waste

Materials Reclamation

The project identifies a strong emphasis on reclaiming and repurposing materials to minimise waste and reduce the environmental impact of construction. Existing concrete slab materials are crushed and reused on-site for piling mats, significantly reducing the need for raw aggregates. Additionally, high recycled content materials are integrated throughout the project, including aluminium window systems, mineral wool insulation, and modular metal studs. Prefabrication plays a key role in reducing material wastage, with components such as kitchen units, bathroom pods, doors, and surface finishes constructed off-site to precise specifications.

The landscaping strategy also prioritises the use of reclaimed and recycled materials, with block paving containing a high proportion of recycled aggregates and raised metal planter systems eliminating the need for concrete footings. Take-back schemes will be implemented across various construction elements, ensuring that materials such as PPE, pallets, and protective sheeting are returned to manufacturers for reuse.

Lean Design Principles

Lean design principles will be implemented in the key Layers of the Proposed Development.

Substructure: Substructure works are already completed therefore not applicable.

Structure: Lean design and embodied carbon performance were the key principles of the design of the Structure of the Proposed Development. As part of the early design stages a structural options appraisal was completed to establish the most viable option in terms of efficiency, performance, and embodied carbon.

Through this appraisal, an efficient structural grid was identified and adopted, this has allowed for thinner structural slabs and therefore reduced associated embodied carbon and construction waste. Sourcing steel with a high recycled content, and specification of concrete mixes with a minimum of 20% cement replacement, reducing the embodied carbon of the substructure.

Additionally, post-tensioned (PT) slabs with reduced thickness will replace traditional thicker slabs, leading to lower concrete and rebar consumption. Existing concrete slabs will be crushed and reused on-site for piling mats, reducing the need for new aggregate materials. Cement with high ground granulated blast furnace slag (GGBS) content will be used where possible to lower the carbon footprint of concrete production.

Shell/ Skin: The building's exterior will incorporate prefabricated and high recycled content materials to reduce waste and improve efficiency. Windows and external doors will be an aluminium system with a high proportion of recycled content, manufactured off-site for precision and minimal on-site adjustments. Mineral wool insulation, also containing high recycled content, will be used to enhance thermal performance sustainably. Prefabricated unitised concrete brick slip panels will be implemented wherever possible to streamline installation and minimise material wastage.

Space: The use of bare finishes and prefabricated elements will be prioritised where possible. Exposed soffits will be considered to enable easier maintenance with minimised damage to fitout. Specifying prefabricated materials will ensure that construction waste will be minimised.

Lightweight partitions with modular metal studs will be used to ensure quick and efficient installation while incorporating high recycled content materials. Bespoke-sized plasterboard will be supplied to reduce offcuts, while modular ceilings with metal hangers and rails will enable efficient construction with minimal waste. Internal doors will arrive pre-made with linings and ironmongery in place, preventing on-site modifications. Surface finishes for floors and walls will be designed to modular sizes to minimise cutting and material wastage. Fixtures and fittings, such as kitchen units, will be prefabricated with high recycled content materials, ensuring efficient use of resources.

Building Services: The design is fully coordinated at the design stage to avoid clashes, ensuring efficient installation and reducing material waste. Service routes will be optimised to be as short as practically reasonable, minimising the amount of piping, ductwork, and cabling required. Prefabricated utility and bathroom pods will be considered to enhance efficiency and reduce on-site construction waste. Major equipment will be sourced from UK manufacturers where possible to minimise transportation emissions and packaging waste.

Many of the building services will be designed to be accessible, and for parts to be replaced when required, to ensure the longevity of the entire system.

High luminous efficacy is also being targeted. For more information on the strategy for Lean Energy please refer to Energy Statement.

Sustainable Sourcing

Under the current BREEAM pre-assessment, the credits for Mat 03 - Responsible sourcing of construction products have been targeted for the responsible sourcing of materials.

There is the intention that a Sustainable Procurement Plan will be produced to provide a framework for the responsible sourcing of the construction products throughout the life of the Proposed Development as well as a tool to be used by the procurement team in line with the Berkeley Group Sustainable Specification and Procurement Policy. Commitment to the aims and targets outlined in the document will be sought during the tendering process for contractor selection. The main targets for the responsible sourcing of materials are as follows. These are based on the GLA Whole Life-Cycle Carbon Assessment (Ref. 3) Guidance, and the RICS Professional Statement (Ref. 4):

General

Favouring suppliers who have implemented best environmental and responsible sourcing practices in their manufacturing process or at least have relevant third-party certifications (e.g. BES6001 certification, Ethical Trade Initiative, ISO 14001) or Environmental Product Declarations (EPDs).;

Source materials from local suppliers (key materials to consider for local sourcing are timber, concrete, fittings, Site services);

Sourcing materials that have reused or recycled content;

The Proposed Development will also aim to use low or no VOC (Volatile Organic Compound) materials, including insulation, paints, sealants, adhesives, carpets and furniture.

Timber

Sourcing all timber and timber-based products from Forest Stewardship Council (FSC) or Programme for the Endorsement of forestry Certification (PEFC) sources with full chain of custody;

Concrete and Steel

Maximising the use of cement replacement materials within the concrete specification and favouring locally sourced options;

Recycled aggregates within the structural frame and ground works will be investigated.

Metals

Recycled metals will be prioritised where possible.

Manage Operational Waste

The Operational Waste generated for the residential units has been estimated by KaNect in Appendix E. Blocks C, D, E1, E2, and F will have its own dedicated waste storage areas, with a consolidated collection points. Waste will be collected bi-weekly, utilising the following bins:

Residential blocks:

- 19 x 1,280L bins for recycling
- 12 x 240L bins for food waste and batteries
- 19 x 1,280L bins for residual waste.

Commercial blocks (retail and office workshops):

- 5 x 1,100L recycling
- 2 x 1,100L residual waste bins
- 4 x 660L food waste bins

Given the relatively low waste generation from commercial spaces, compaction is not recommended. The waste strategy aligns with council guidelines, ensuring accessibility for collection vehicles within 10m of the furthest bin, while minimising obstructions and optimising space allocations. Additionally, the strategy remains flexible for potential adjustments in consultation with the council to optimise bulky waste storage and enhance overall waste management efficiency.

3.3 Designing for Longevity

Considering the nature of retail developments within Blocks C, D, E1,and F, there is a high desirability for longevity and durability suit the more intensive use, designing for longevity will be prioritised therefore wherever possible. The Proposed Development will be designed to have a long life in line with the required industry standards for each of the relevant layers. The specification of reinforced concrete for the main structural frame in particular will provide excellent durability and resilience with little need for remedial maintenance. Outside of the structure, durable materials and systems will be selected with design lives in line with the appropriate industry standards and be maintained regularly to increase longevity.

The Reinforced Concrete Frame (RC) and piled foundations have been designed to provide long-term structural stability, with a minimum 60-year lifespan as per NHBC requirements and an estimated design life exceeding 100 years with proper maintenance. The high-strength materials and durable construction techniques ensure resilience to environmental stresses, ground conditions, and load-bearing demands, supporting long-term sustainability and circular economy principles. With minimal material degradation and ease of maintenance, the structure reduces the need for premature repairs or replacements, minimising waste and embodied carbon over the building's lifecycle.

The building services connects to the district-wide heating system, supporting energy efficiency and reduced reliance on fossil fuels therefore enhances longevity while futureproofing the development against technological advancements and energy regulations.

The space has been designed with longevity in mind by selecting more durable elements wherever possible. Tall ground floor spaces that accommodate multiple configurations and potential future uses are implemented, allowing efficient fit-outs, ensuring that retail areas within Blocks C, D, E1 and F can be converted into residential units should demand shift.

High-quality kitchen components, appliances, and sanitary ware are selected for long life, durability, and ease of maintenance. Installation methods prioritise ease of replacement and refurbishment, enabling component-level upgrades rather than full-scale replacements, reducing waste and supporting circular material flows.

All materials are specified with manufacturer-recommended design lifecycles, ensuring they meet stringent durability and longevity standards. The selection process focuses on low-embodied carbon materials, recyclability, and modular construction techniques, allowing for future disassembly, refurbishment, and resource recovery at the end of life.

Finally, the development BREEAM ‘Excellent’ rating for the office workshops and retail developments within Blocks C, D, E and F of the Proposed Development, ensuring that key sustainability and longevity principles are embedded in the design. The project focuses on securing credits related to adaptability and flexibility, including:

HEA04 – Design for Future Comfort (ensuring long-term occupant well-being)

ENE01 – Energy Performance (enhancing operational efficiency and reducing emissions)

MAT05 – Designing for Durability and Robustness (ensuring material longevity)

WST05 – Resilience of Structure, Fabric, and Building Services (enhancing climate resilience and lifecycle performance)

- WST06 – Design for Disassembly and Functional Adaptability (promoting circular economy strategies through material reuse and disassembly)

3.4 Designing for Adaptability or Flexibility

The Proposed Development has been designed with adaptability and flexibility, ensuring that spaces can evolve over time to meet changing needs and uses. The reinforced concrete (RC) frame and piled foundations are designed for long-term stability, while the minimisation of the apartments’ internal columns enhances layout flexibility. This allows for future reconfigurations of living spaces without requiring major structural interventions, supporting a low-waste, circular approach to building adaptability. A robust maintenance schedule further extends the lifespan of these structural elements, reducing material waste and the need for early replacement.

The façade has been designed to accommodate frequent changes in commercial spaces, where adaptability is essential for tenant turnover, evolving retail trends, and future repurposing. Bolted façade connections allow for easy removal, replacement, or repair, ensuring that the building envelope can be upgraded or modified without significant material waste. This aligns with circular economy principles by promoting component-level adaptability and extending the lifecycle of building materials.

A mechanical ventilation system with heat recovery (MVHR) provide efficient, adaptable ventilation, ensuring optimal air quality and energy efficiency. Additionally, openable windows have been incorporated into the design to enable natural ventilation, offering occupants greater control over their indoor environment. This dual-ventilation strategy ensures adaptability to different climate conditions, future energy efficiency standards, and occupant preferences, reducing the need for extensive retrofits.

The structural grid and plan layout have been designed for maximum flexibility, allowing for internal reconfiguration to accommodate various apartment types, occupancy levels, and access requirements. The ability to adapt layouts over time ensures that the development remains functional and responsive to demographic and societal shifts, reducing the need for extensive alterations and material consumption.

Internal fixtures, fittings, and appliances have been carefully selected for ease of replacement, ensuring that components can be upgraded individually without extensive refurbishment. Kitchens, appliances, and sanitary ware are designed for modular installation, allowing for straightforward replacements and reconfigurations as user needs evolve. Additionally, M4(3) adaptable flats have been incorporated, ensuring that wheelchair-accessible units can be easily modified for future users, promoting long-term inclusivity and accessibility.

The modular nature of construction allows for future adaptability and flexibility, ensuring that spaces can be restructured with minimal waste which supports future changes in building use, spatial needs, and technological advancements.

3.5 Design for Disassembly

The key principles for disassembly to be explored in the next stages of design are as follows:

Use mechanical connections rather than welded or chemical ones. This is being considered particularly for secondary steelwork, and examples of alternatives and their advantages and disadvantages has been provided in Table 7.

The brick façade system has been designed for deconstruction and material recovery, which can be dismantled and crushed into recycled aggregate, supporting closed-loop material use and avoiding unnecessary waste.

Specification of precast elements wherever appropriate, as is being considered for the façade. This offers the potential for adjustments or complete demountability, facilitating future disassembly.

The building services are designed with strategic access points to facilitate future maintenance and replacements, reducing operational waste and extending the lifespan of service systems, allowing for incremental system upgrades.

Internally, partitions have been constructed using modular metal stud partitions that can be easily removed, reconfigured, or replaced without excessive material waste, allowing for future layout modifications in response to changing occupant needs

3.5.1 Elimination of the number of different types of material wherever possible.

Standardisation of layouts and furniture, such as the carpentry which enables for consistent and easier disassembly methods.

Table 7: Assessment of Different Types of Mechanical Connections

Type of Connection	Advantages	Disadvantages
Screw Fixing	Easily removable	Limited reuse of hole and screws, cost
Bolt Fixing	Strong, can be reused a number of times	Can seize up, making removal difficult, cost
Nail Fixing	Speed of construction, cost	Difficult to remove, removal usually destroys an area of the element
Friction	Keeps construction relement whole during removal	Poor choice of fixings, structurally weaker
Riveted Fixing	Speed of construction	Difficult to remove, removal usually destroys an area of the element

A ‘Building Adaptability and Disassembly Guide’ may be explored to illustrate which components might be reused, recycled or composted and how the Proposed Development is envisioned to be disassembled with the goal to minimise wastage and maximise reuse. The Guide would aim to communicate the strategy for the components expected to be replaced during the building’s lifetime, for example glazing units and building services plant and equipment.

3.6 Using Systems, Elements or Materials that can be Reused and Recycled

The selection of materials prioritises high recycled content. Pre-cast and prefabricated structural components are preferred, reducing on-site waste while improving construction efficiency. Bolted balcony and façade connections enable future disassembly and material recovery, allowing these elements to be repurposed or relocated rather than disposed of. The Berkeley Materials Exchange Board will be used throughout construction to reuse materials wherever possible, reinforcing waste minimisation and circular economy principles.

All pipework and ductwork will be manufactured from recyclable materials, ensuring they can be repurposed or reprocessed at the end of their lifecycle. Insulation materials will also be selected based on recyclability criteria, ensuring that future replacements do not contribute to unnecessary waste. The use of modular and adaptable service installations facilitates selective upgrades and reuse, rather than complete system repairs.

A wide range of metals and masonry materials will be reused and recycled, including reinforcement, pipework, sprinkler tanks, M&E equipment, windows, doors, balustrades, curtain walling, metal framing for PV panels, fall restraint systems, copings, aluminium panels, access ladders, and other metalwork components. This ensures that valuable materials remain within the construction ecosystem rather than becoming waste.

Additionally, Q Flow software will be utilised to track material deliveries, creating live data records that contribute to the development of material passports within the industry. This will establish a material bank that can be accessed for future reuse, while also improving the understanding of product lifecycles to facilitate sustainable resource management.

4 BILL OF MATERIALS

The Bill of Materials has been completed for the Proposed Development based on information that has been provided by the design team through requests for information. This information has been used to complete the Whole Life Carbon Assessment of the Proposed Development (refer to 15112-WAT-XX-XX-RP-V-59002 for further details) also accompanying the s73 application.

The Bill of Materials was primarily populated from the detailed RFIs provided by the Design Team. In order to verify in line with the GLA requirement of 95% of each building element category by value, the assessment has been verified against the total mass of the scheme by the respective design disciplines, rather than the cost plan which cannot be shared due commercial confidentiality.

The Proposed Development's overall weight is approximately 74,592 kg which corresponds to 796 kg/m2 GIA.

At the end of each materials' lifespan within the building, the waste generated will be handled according to the Waste Hierarchy, prioritising reusability before recovering the residual value through recycling and energy from waste, using landfill as a last resort. Through this, the estimated mass of reusable materials is 547 tonnes and the estimated mass of recycled materials is approximately 3,767 tonnes.

The detailed bill of materials can be seen in Appendix A.

5 RECYCLING AND WASTE REPORTING

Table 8 shows the Recycling and Waste reporting metrics based on the current stage of the design. For further details please refer to the Site Waste Management Plan and Waste Management Strategy documents also submitted with this application. A copy of the SmartWaste outputs are provided in Appendix D.

Table 8: Recycling and Waste Reporting

Category	Total Estimate	Of which…				Source of information
	t /m² GIA	% reused or recycled on-site	% reused off-site	% recycled off-site	% not reused or recycled max 5% (to landfill or other management)	
Demolition Waste	N/A	N/A	N/A	N/A	N/A	N/A
Excavation Waste	N/A	N/A	N/A	N/A	N/A	N/A
Construction Waste	4,317	0%	12.7%	87.3%	0.1%	WLC Report (OneClick LCA)
	t/annum	%reused on-site	% recycled or composted, on or off-site		% not reused or recycled (to landfill or other management)	
Municipal waste	1,601	N/A	N/A		N/A	OWMP prepared by KaNect

Notes

The total GIA of the Proposed Development is 93,657 m²

More waste diversion opportunities will be identified in the next design stage to meet GLA CE guidance targets for a minimum of 95% of construction waste diverted from landfill.

GLA guidance asks for written evidence that the destination landfill(s) have the capacity to receive waste. The project team will ensure that the demolition contractor and lead contractor provide this information once they are appointed and where waste is identified as being sent to landfill, written confirmation that the receiving landfill has the capacity to deal with the waste over the lifetime of the development will be provided.

6 PLANS FOR IMPLEMENTATION

In the next RIBA Stages, the applicant or their appointed Sustainability Consultant will be responsible for coordinating the different design team disciplines to ensure that the actions and opportunities outlined as part of this document are embedded within the design and specifications ahead of the tendering process. This will include:

RIBA Stage 3-4 Creation of a monitoring tracker to specify key commitments, responsibilities, and evidence requirements

Hold a workshop with the Design Team to inform them of the key outcomes of the monitoring tracker

End of Stage meeting to discuss key design updates with relation to Circular Economy principles

Creation of clauses to be included within the Contractor Requirements.

RIBA Stage 5

Engagement with the Principal Contractor to inform them of key-commitments, required supporting evidence monitoring process, and required actions by them.

Ensure that the Principal Contractor will update the Monitoring Tracker when required, throughout the construction phase

Undertake biannual reviews with the Principal Contractor to monitor progress against the tracker and to ensure that appropriate evidence collation is being undertaken.

Collect and review the evidence from the Principal Contractor.

RIBA Stage 6

Using the information gathered from the Principal Contractor, produce a Post-Completion Circular Economy Statement in line with the GLA Circular Economy Statement Guidance to include the as-built performance of the buildings against all the key commitments and predicted metrics that were included in the Detailed CES, lessons learnt and supporting evidence as appendices. Where significant change is noticed between the as-built performance and the commitments at the Planning Stage, explanations will be provided to describe why these differences have occurred.

Ensure that the post-construction report is made available to the public through the London Datastore.

6.1 End of Life Strategy

Following the end of the lifespan of the Proposed Development, an end-of-life strategy should be implemented to ensure that materials can be disassembled rather than demolished, to maximise the potential reuse within future developments.

To demonstrate compliance with BREEAM Credit Wst06, a ‘Building Adaptability and Disassembly Guide’ will be explored to communicate the features of functional adaptability and disassembly to future tenants. The guide will therefore only include the features relevant to (and have been implemented within) the construction of the Development and aid any future change in use, or the disassembly of the building.

7 CONCLUSION

The aim of this Circular Economy Strategy was to demonstrate that the Proposed Development has been developed to meet the relevant planning policy SI 7 "Reducing waste and supporting the circular economy" of the London Plan (Ref. 1). This CES aimed to detail the Circular Economy Principles that have been adopted within the design and highlight how the Proposed Development intends to meet the targets set by the GLA, and relevant policy requirements.

As a result of detailed planning permission being granted on 15th June 2018 (application reference: 2017/3847/P) (as varied), a Pre-redevelopment Audit and Pre-demolition Audit are not required for this s73 application, as a result of construction having already commenced.

As such, this Circular Economy Statement focuses on the circular economy measures that may be implemented within the Proposed Development. The proposed design incorporates a range of strategies to ensure the core circular economy principles of:

- Building in Layers
- Designing out Waste
- Designing for Longevity
- Designing for Adaptability or flexibility
- Design for Disassembly

Using systems, elements or materials that can be reused and recycled

These strategies include the use of durable materials, adaptable structural layouts, and accessible building services designed for ease of maintenance and future replacement. Moreover, the development will feature construction techniques, such as modular design and prefabrication, to reduce waste and enhance the potential for disassembly and recycling.

By embedding these Circular Economy Principles, the following commitments will be made and met:

- A minimum of 95% of excavation waste will be put to beneficial use.
- A minimum of 95% of construction and demolition waste will be diverted from landfill.
- A minimum of 65% municipal waste will be recycled by 2030.
- A minimum of 20% reused/recycled content by value specified across the Proposed Development.

Moving forward, it is crucial to maintain rigorous documentation and monitoring of all design improvements and track against the circular economy principles. This will ensure that these principles are effectively implemented during construction and evaluated post-completion to provide transparency and accountability.

8 REFERENCES

Ref. 1. **Greater London Authority (2021).** The London Plan, The Spatial Development Strategy for Greater London.

Ref. 2. **Greater London Authority (2022).** Circular Economy Statement Guidance.

Ref. 3. **Greater London Authority (2022).** Whole Life-Cycle Carbon Assessment Guidance.

Ref. 4. **RICS (2017).** Whole Life Carbon Assessment for the Built Environment.

9 ABBREVIATIONS

WBS = Waterman Building Services

CES = Circular Economy Statement

GIA = Gross Internal Area

NIA = Net Internal Area

GEA = Gross External Area

EPC = Energy Performance Certificate

MEES = Minimum Energy Efficiency Standard

GLA = Greater London Authority

MEP = Mechanical, Electrical & Plumbing

RIBA = Royal Institute of British Architects

EPD = Environmental Product Declaration

VOC = Volatile Organic Compound

FSC = Forest Stewardship Council

PEFC = Programme for the Endorsement of Forestry Certification

APPENDICES

A. Bill of Materials

Project Name: Camden Goods Yard

MATERIAL QUANTITY AND END OF LIFE SCENARIOS		Product and Construction Stage (Module A)			Assumptions made with respect to maintenance, repair and replacement cycles (Module B)	Material 'end of life' scenarios (Module C)	Benefits and loads beyond the system boundary (Module D)	
Building element category		Material type	Material quantity (kg)				Estimated reusable materials (kg)	Estimated recyclable materials (kg)
	Note/example	Breakdown of material type in each category [Insert more lines if needed] e.g. Concrete	65000 kg	Waste factor	For all primary building systems (structure, substructure, envelope, MEP services, internal finishes) including assumed material/product lifespans and annual maintenance/repair %	Declare 'end of life' scenario as per project's Circular Economy Statement, and used in the WLC assessment to produce Module C results	0 kg	25 kg
		e.g. Reinforcement	5000 kg				2 kg	8 kg
		e.g. Formwork	250 kg				0 kg	0 kg
0.1	Demolition: Toxic/Hazardous/Contaminated Material Treatment							
0.2	Major Demolition Works							
0.3	Temporary Support to Adjacent Structures							
0.4	Specialist Ground Works							
1	Substructure	In-Situ Concrete	26289177	5%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	26,236,599 kg
		Steel Rebar	1158496	5%	As building	Steel recycling (90%)	0 kg	1,042,646 kg
		Aggregate	326880	10%	As building	Aggregate reused	326,880 kg	0 kg
		Insulation	4086	7%	As building	Plastic-based material incineration	0 kg	0 kg
		Plastic Membrane	6356	7%	As building	Plastic-based material incineration	0 kg	0 kg
		Blinding	16344	5%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	16,311 kg
2.1	Superstructure: Frame	In-Situ Concrete	4327937	5%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	4,319,281 kg
		Steel Rebar	638835	5%	As building	Steel recycling (90%)	0 kg	574,952 kg
2.2	Superstructure: Upper Floors	In-Situ Concrete	19973652	5%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	19,933,705 kg
		Pre-Cast Concrete	306306	1%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	305,693 kg
		Steel Rebar	1878616	5%	As building	Steel recycling (90%)	0 kg	1,690,754 kg
		Aluminium	2999	1%	As building	Aluminium recycling (90%)	0 kg	2,699 kg
		Bitumen Membrane	4118	6%	20	Landfilling (for inert materials)	0 kg	0 kg
		Insulation	87.31	7%	As building	Plastic-based material incineration	0 kg	0 kg
		Steel railing	11276	1%	As building	Steel recycling (90%)	0 kg	10,148 kg
		Composite boards	14138	10%	As building	Wood incineration	0 kg	0 kg
2.3	Superstructure: Roof	Concrete	3964115	5%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	3,956,187 kg
		Steel Rebar	190822	5%	As building	Steel recycling (90%)	0 kg	171,740 kg
		Soil	38361	10%	As building	Soil reused	38,361 kg	0 kg
		Aggregates	105216	10%	As building	Aggregate reused	105,216 kg	0 kg
		Concrete Paving	342240	1%	30	Rebar separated (2 %), concrete to aggregate	0 kg	340,885 kg
		Bitumen Membrane	46202	6%	20	Landfilling (for inert materials)	0 kg	0 kg
		Insulation	92150	7%	As building	Plastic-based material incineration	0 kg	0 kg
		Polyethylene vapour membrane	1156	7%	30	Plastic-based material incineration	0 kg	0 kg
		Galvanised Steel sheet	6908	1%	As building	Landfilling (for inert materials)	0 kg	0 kg
		Steel decking	30.67	1%	As building	Steel recycling (90%)	0 kg	28 kg
		Steel railing	7840	1%	As building	Steel recycling (90%)	0 kg	7,056 kg
		Raised access flooring system	39516	5%	50	Steel recycling (90%)	0 kg	35,564 kg
2.4	Superstructure: Stairs and Ramps	Concrete	725801	4%	As building	Rebar separated (2 %), concrete to aggregate	0 kg	722,927 kg
		Steel Rebar	30242	5%	As building	Steel recycling (90%)	0 kg	27,218 kg
		Steel Handrail	1485	2%	As building	Steel recycling (90%)	0 kg	1,337 kg
2.5	Superstructure: External Walls	Gypsum plaster board	77790	12%	As building	Gypsum recycling	0 kg	51,341 kg
		Cement board	2151066	4%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	2,146,764 kg
		Brickwork	3099376	6%	As building	Brick/stone crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	3,093,177 kg
		Render	4644	4%	30	Cement/mortar use in a backfill	0 kg	4,635 kg
		Insulation	80201	7%	As building	Plastic-based material incineration	0 kg	0 kg
		Steel	19297	1%	As building	Steel recycling (90%)	0 kg	17,367 kg
		Aluminium coping	419	1%	As building	Aluminium recycling (90%)	0 kg	377 kg
2.6	Superstructure: Windows and External Doors	Aluminium framed windows and doors	259886	1%	30	Glass-containing product recycling (80 % glass)	0 kg	207,909 kg
2.7	Superstructure: Internal Walls and Partitions	Glass wool insulation	120061	7%	As building	Landfilling (for inert materials)	0 kg	0 kg
		Steel stud	2558	3%	30	Steel recycling (90%)	0 kg	2,302 kg
		Concrete blocks	275724	5%	As building	Concrete crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	275,173 kg
2.8	Superstructure: Internal Doors	Wood Door	44979	0%	20	Wood-containing product incineration (80% wood)	0 kg	0 kg
3	Finishes	Paint	5308	6%	5	Landfilling (for inert materials)	0 kg	0 kg
		Carpet	16122	10%	15	Plastic-based material incineration	0 kg	0 kg
		Ceramic tile	9340	10%	25	Brick/Stone crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	9,321 kg
		Vinyl	225636	6%	7	Plastic-based material incineration	0 kg	0 kg
		Epoxy	2813	10%	10	Landfilling (for inert materials)	0 kg	0 kg
		Gypsum plasterboard	1330730	4%	30	Gypsum recycling	0 kg	878,282 kg
		MDF	5054	17%	As building	Wood-containing product incineration (80% wood)	0 kg	0 kg
		Screed	1377243	8%	As building	Cement/mortar use in a backfill	0 kg	1,374,489 kg
		Primer	325	10%	10	Cement/mortar use in a backfill	0 kg	324 kg
4	Fittings, furnishings & equipment (FFE)	Letter Box	1662	0%	As building	Metal-containing product recycling (90 % metal)	0 kg	1,496 kg
		Bicycle Rack	710	0%	As building	Steel recycling (90%)	0 kg	639 kg
		Desk and Drawers	661	0%	10	Wood-containing product incineration (80% wood)	0 kg	0 kg
5	Services (MEP)	AHU	12091	0%	20	Metal-containing product recycling (90 % metal)	0 kg	10,882 kg
		Acrylics	13250	0%	As building	Plastic-based material incineration	0 kg	0 kg
		Ceramics	54017	0%	20	Brick/Stone crushed to aggregate (for sub-base layers) - loss factor of 0.2%	0 kg	53,909 kg
		ASHPs	2970	0%	20	Landfilling (for inert materials)	0 kg	0 kg
		Copper	14294	1%	25	Copper recycling (90%)	0 kg	12,865 kg
		Fire sprinkler	1084	0%	25	Steel recycling (90%)	0 kg	976 kg
		Lifts	48912	0%	20	Metal-containing product recycling (90 % metal)	0 kg	44,021 kg
		FCU	68280	0%	20	Metal-containing product recycling (90 % metal)	0 kg	61,452 kg

		Galvanised Steel	100678	1%	As building	Steel recycling (90%)		0 kg	90,610 kg
		HDPE	18180	1%	25	Landfilling (for inert materials)		0 kg	0 kg
		LED	4268	0%	15	Landfilling (for inert materials)		0 kg	0 kg
		MVHR	45655	0%	20	Metal-containing product recycling (90 % metal)		0 kg	41,090 kg
		Drinking pipe	1655	1%	20	Metal-containing product recycling (90 % metal)		0 kg	1,490 kg
		PVC	25697	1%	15	Plastic-based material incineration		0 kg	0 kg
		VRF	10831	0%	20	Metal-containing product recycling (90 % metal)		0 kg	9,748 kg
		Thermoset Insulation	9612	7%	As building	Landfilling (for inert materials)		0 kg	0 kg
		PV	7500	0%	30	Metal-containing product recycling (90 % metal)		0 kg	6,750 kg
		Stone wool insulation	109852	7%	As building	Landfilling (for inert materials)		0 kg	0 kg
		Underfloor heating	434610	1%	20	Metal-containing product recycling (90 % metal)		0 kg	391,149 kg
6	Prefabricated Buildings and Building Units								
7	Work to Existing Building								
8	External works	Concrete pavers	1630746	5%	As building	Rebar separated (2 %), concrete to aggregate		0 kg	1,624,288 kg
		Drainage sublayer	58370.58	7%	30	Plastic-based material incineration		0 kg	0 kg
		Precast pavers	2256637.34	1%	As building	Rebar separated (2 %), concrete to aggregate		0 kg	2,247,701 kg
Refrigerants		**Refrigerant name**	**Initial Charge(kg)**		**Annual leakage rate %**	**Refrigerant GWP ($kgCO_2e/kg$)**	**End of Life recovery rate %**		
a	Refrigerants Type 1 (if applicable) - please see CIBSE TM65 for methodology	R410A	40		4%	2088	98%		
b	Refrigerants Type 2 (if applicable) - please see CIBSE TM65 for methodology	R32	32		4%	675	98%		

B. Circular Economy Workshop Slides

Sustainability Workshop

Camden Goods Yard – St George

28th January 2025

Introduction

Ankit Singh
Director - Sustainability

James Barker
Regional Head of Sustainability

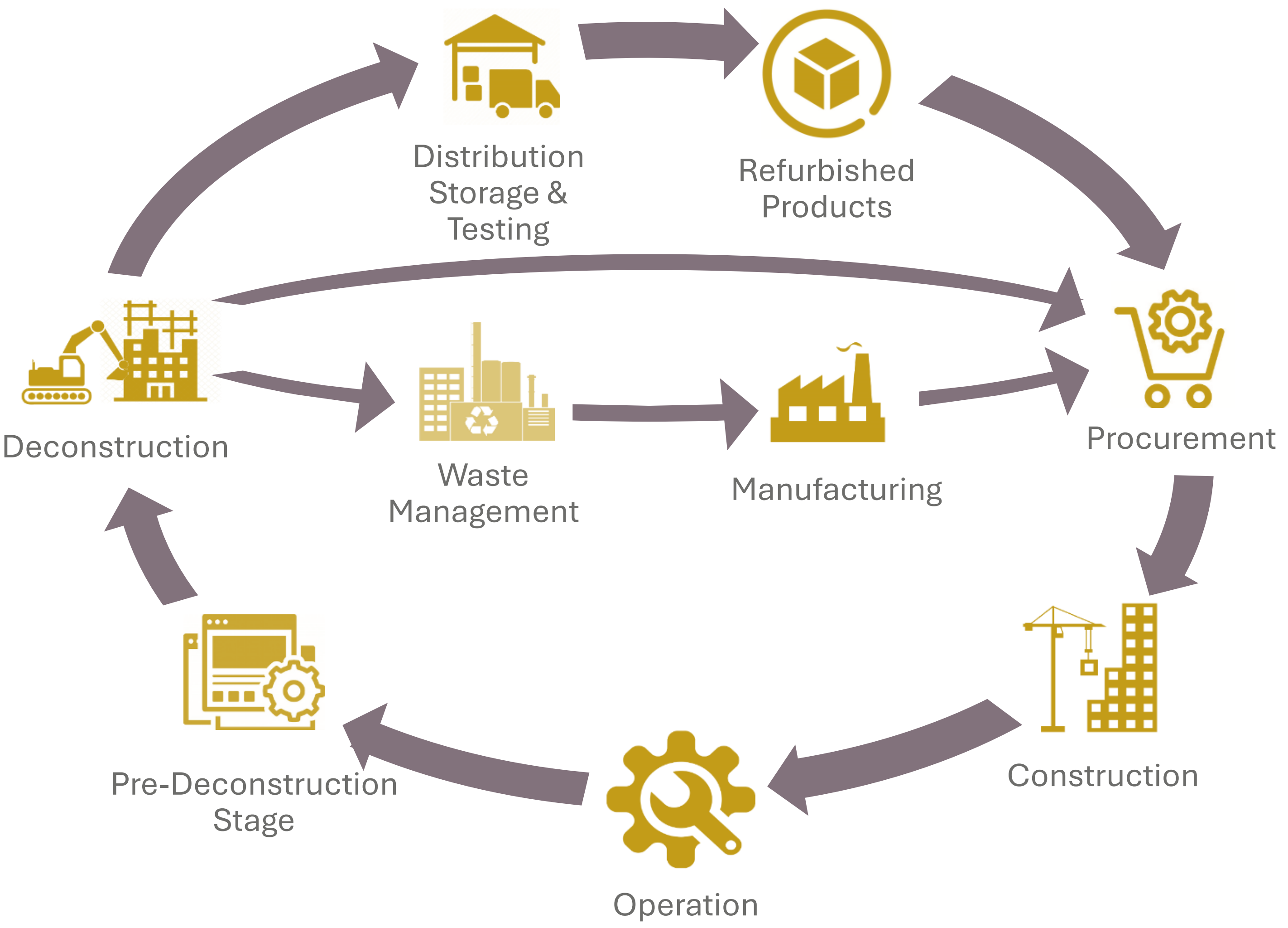
Energy & BREEAM Lead

Emily Wingrove
Regional Head of Sustainability

Whole Life Carbon & Circular Economy Lead

Circular Economy Statement

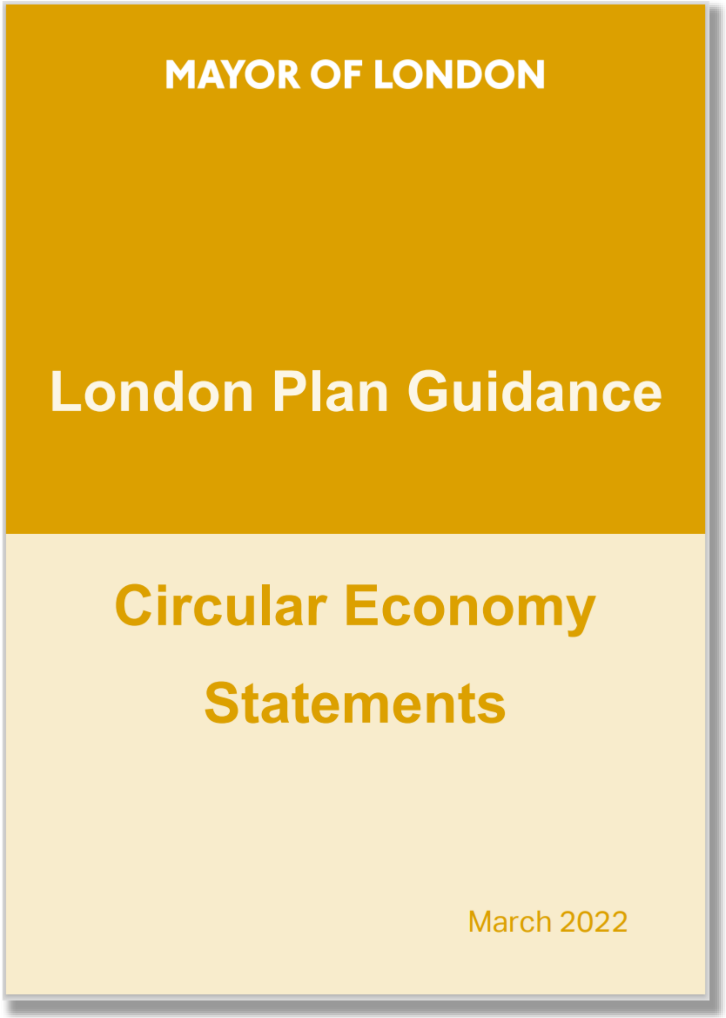
Building Circularity



Building Circularity

Circular Economy Principles

1. Building in layers – Skin, Structure, Services, Space, Stuff
2. Designing for adaptability or flexibility
3. Designing for longevity
4. Designing for disassembly
5. Designing out waste
6. Material reusability or recyclability


MAYOR OF LONDON

London Plan Guidance

Circular Economy Statements

March 2022

Circular Economy Statement Targets

Greater London Authority

Materials Specifications		1. Materials specified to achieve a minimum of **20% of the total value** to be comprised of **recycled or reused content**. 2. Identify **end of life** of the materials and building elements
Waste	**Demolition Waste** **Excavation Waste** **Construction Waste**	1. Production of a **Pre-demolition Audit.** 2. Calculation of **estimates of demolitions, construction, excavation waste arising** in **tonnes/m²**. 3. At least **95%** of demolition, excavation and construction waste should be **reused, recycled or recovered.** 4. Provision of a **notification** of the **likely destination of all waste streams** (beyond the Materials Recycling Facility) and a written confirmation that the destination **landfill**(s) has/have the **capacity to receive waste**.
	Operational Waste	1. Estimate of the **total waste arising** for key streams (t/annum). 2. Commitment to the target for at least **65% municipal waste to be reused, recycled or composted.** 3. Commitment that the waste will be managed in accordance with the **waste hierarchy.** 4. Commitment & evidence that Proposed Development has been designed to include **adequate & easily accessible storage.** 5. Commitment that the Proposed Development supports the **separate collection of dry recyclables** (at least card, paper, mixed plastics, metals, glass) and **food waste.** 6. Information about how the operational performance will be **monitored and reported.** 7. Consideration of measures such as **consolidated, smart logistics and community-led waste minimisation schemes.**

Building Circularity

Implementation of Circular Economy Principles

Layer	CE Strategy	Narrative
Skin / Shell	**Design for Longevity** **Design for Disassembly**	• All building elements to be specified with long design lives in accordance with industry standards • Adequate waterproofing details to mitigate risk of water damage to structural elements and finishes. • Materials selected that require limited maintenance • Modular design where possible to allow for repeatable disassembly strategies. • Non-load bearing façade to allow for easier disassembly.
Structure/ Frame	**Design for Longevity** **Design for Adaptability**	• All building elements to be specified with long design lives in accordance with industry standards • Adequate waterproofing details to mitigate risk of water damage to structural elements and finishes. • Specification of reinforced concrete for the main structural frame in particular will provide excellent durability and resilience with little need for remedial maintenance • Core location and standardised structural grid allows for adaptability • Open floor space for commercial units allow more flexible change in use

Layer	CE Strategy	Narrative
Building Services	**Design for Replaceability** **Design for Adaptability**	• Easily accessible Building Services • Heating and cooling to be provided through a single infrastructure therefore meaning less material in need of maintenance / replacement.
Space plan/ Interior	**Design for Replaceability** **Design for Flexibility** **Design for Disassembly**	• Bare finishes were possible and avoidance of secondary finishes to materials • Mechanical connections were possible • Modular design where possible
Stuff	**Design for Replaceability** **Design for Flexibility** **Design for Disassembly**	• Standardised carpentry • Repeatable layouts

Building Circularity

Implementation of Circular Economy Principles

	Frame	Skin	Space	Services
Designing out waste (Module A, B, C, D)	Lean design – efficient grids Reused materials GGBS	Prefab Standardised	Prefab Standardised	Mechanical Fixings Kit of parts Accessible
Design for Longevity	Concrete = durable	Maintenance strategy	Hard wearing in high trafficked areas	Maintainable
Design for Adaptability and Flexibility	Concrete = strong & adaptable	Non-load bearing Standardised	Adjustable finishes Movable partitions	Kit of parts Accessible
Design for Disassembly	Concrete NA Secondary steelwork bolted	Bolted connections Prefab	No adhesives	Kit of parts Accessible
Using systems, elements or materials that can be reused and recycled.	RCA Reinforcement	Metal Glass RCA Brick	O&M manual up to date Material specification	Kit of parts

C. Residential Bin Requirements

Bin Requirements

Bin requirements for individual stores (1 day storage) / Consolidated bin requirements

Building	Tenure	Number of Units	MDR (L/W)	Food (L/W)	Residual (L/W)	Textiles (L/W)	Batteries (L/W)	Total (L/W)
C	Private	92	2 x 1,280 L	2 x 240 L	2 x 1,280 L	2 x 660 L	2 x Battery Box	Total 4 x 1,280 L 2 x 240 L 2 x Battery Box
D	Private	33	1 x 1,280 L	1 x 240 L	1 x 1,280 L	1 x 660L	1 x Battery Box	2 x 1,281 L 1 x 660L 1 x 240 L 1 Battery Box
	Townhouse / Maisonette	9	1,260 Each house provided with 1 x 140L Bin	207 Each house provided with 1 x 23 L Food caddy	1,080 Each house provided with 1 x 120L Bin	495 Each house provided with 1 x 55 L Box	63 Each house provided with 1 x 7L Bag.	9 x 140 L 9 X 120 L 9 x 23 L Caddy 9 x 55 L Textiles Box 9 x 7L Bag for Batteries
E1	Private	46	1 x 1,280	1 x 240L	1 x 1,280 L	1 x 660 L	1 x Battery Box	2 x 1,281 L 1 x 660L 1 x 240 L 1 Battery Box
E2	LAR Flats	6	768 Each Flat provided with 1 x 140L Bin	144 Each Flat provided with 1 x 23 L Food caddy	768 Each Flat provided with 1 x 120L Bin	330 Each Flat provided with 1 x 55 L Box	42 Each house provided with 1 x 7L Bag.	6 x 140 L 6 X 120 L 6 x 23 L Caddy 6 x 55 L Textiles Box 6 x 7L Bag for Batteries
	Townhouse / Maisonette	17	2,480 Each house provided	391 Each house provided with 1	2,140 Each house provided with 1 x 120L Bin	935 Each house provided with 1 x 55 L Box	119 Each house provided with 1 x 7L Bag.	12 x 140 L 5 x 240 L

			with 1 x 140L Bin *Larger bins needed for the 4 bed units (additional 20L per unit)*	x 23 L Food caddy	*Larger bins needed for the 4 Bed units (Additional 20L per unit)*			17 x 23 L Caddy 12 x 120 L 5 x 140 L 17 x 55 L Textiles Box 17 x 7L Bag for Batteries
F	Private	148						
		Core F1 = 49	1 x 1,280 L	1 x 240L	1 x 1,280 L	1 x 660 L	1 x Battery Box	2 x 1,280 L 1 x 660 L 1 x 240 L 1 x Battery Box
		Core F2 = 67	2 x 1,280 L	1 x 240 L	2 x 1,280 L	1 x 660 L	2 x Battery Box	3 x 1,280 L 1 x 660 L 1 x 240 L 2 x Battery Box
		Core F3 = 32	1 x 1,280 L	1 x 240 L	1 x 1,280 L	1 x 660 L	1 x Battery Box	2 x 1,280 L 1 x 660 L 1 x 240 L 1 x Battery Box
	Townhouse / Maisonette	Core F3 = 8	1,120 Each house provided with 1 x 140L Bin	184 Each house provided with 1 x 23 L Food caddy	960 Each house provided with 1 x 120L Bin	440 Each house provided with 1 x 55 L Box	56 Each house provided with 1 x 7L Bag.	8 x 140 L 8 X 120 L 8 x 23 L Caddy 8 x 55 L Textiles Box 8 x 7L Bag for Batteries
Consolidated Residential (Private Flats) Bin Store Block F (319)			**40,832**	**7,656** **32 x 240 L**	**40,832** **32 x 1,280 L**	**17,545** **27 x 660 L**	**2,233** **10 x 240 L**	64 x 1,280 L 27 x 660 L

Weekly Collection	**32 x 1,280 L**					42 x 240 L
Consolidated Residential (Private Flats) Bin Store Block F (319) **Twice a week Collection**	**23,333** **19x 1,280 L**	**4,375** **19 x 240 L**	**23,333** **19x 1,280 L**	**10,026** **16 x 660 L**	**1,276** **6 x 240 L**	38 x 1,280 L 16 x 660 L 25 x 240 L

D. SmartWaste Outputs

Waste Benchmark Calculator

These figures are calculated based on your floor area of **74.0 m^2** and your project type of **Leisure**

If you have not entered a floor area, this table will not be populated.

Product	Tonnes
Bricks (17 01 02)	0.30
Tiles and Ceramics (17 01 03)	0.02
Concrete (17 01 01)	0.63
Inert (17 01 07)	2.22
Insulation materials (non hazardous) (17 06 04)	0.03
Metals (17 04 07)	0.13
Packaging materials (15 01 06)	0.17
Plasterboard / Gypsum (17 08 02)	0.28
Binders (17 01 01)	0.01
Plastic (excluding packaging waste) (17 02 03)	0.15
Timber (17 02 01)	0.56
Floor coverings (soft) (20 01 11)	0.01
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	0.01
Bulky waste / Furniture (20 03 07)	0.02
Canteen/Office/Adhoc waste (20 03 01)	0.16
Liquids (16 10 02)	0.01
Oils (13 01 13*)	0.00
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	0.19
Hazardous waste*	0.05
Other waste	0.69
Mixed construction and/or demolition waste (17 09 04)	3.91

Waste Benchmark Calculator

These figures are calculated based on your floor area of **717.0 m^2** and your project type of **Industrial Buildings**

If you have not entered a floor area, this table will not be populated.

Product	Tonnes
Bricks (17 01 02)	0.64
Tiles and Ceramics (17 01 03)	0.01
Concrete (17 01 01)	8.04
Inert (17 01 07)	6.40
Insulation materials (non hazardous) (17 06 04)	0.12
Metals (17 04 07)	1.88
Packaging materials (15 01 06)	0.84
Plasterboard / Gypsum (17 08 02)	0.82
Binders (17 01 01)	0.04
Plastic (excluding packaging waste) (17 02 03)	0.46
Timber (17 02 01)	2.89
Floor coverings (soft) (20 01 11)	0.01
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	0.00
Bulky waste / Furniture (20 03 07)	0.09
Canteen/Office/Adhoc waste (20 03 01)	1.00
Liquids (16 10 02)	0.08
Oils (13 01 13*)	0.02
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	2.14
Hazardous waste*	0.53
Other waste	4.03
Mixed construction and/or demolition waste (17 09 04)	16.03

Waste Benchmark Calculator

These figures are calculated based on your floor area of **14075.0 m^2** and your project type of **Commercial Offices**

If you have not entered a floor area, this table will not be populated.

Product	Tonnes
Bricks (17 01 02)	73.21
Tiles and Ceramics (17 01 03)	6.50
Concrete (17 01 01)	280.19
Inert (17 01 07)	156.88
Insulation materials (non hazardous) (17 06 04)	12.37
Metals (17 04 07)	27.93
Packaging materials (15 01 06)	28.21
Plasterboard / Gypsum (17 08 02)	57.26
Binders (17 01 01)	1.40
Plastic (excluding packaging waste) (17 02 03)	14.65
Timber (17 02 01)	102.24
Floor coverings (soft) (20 01 11)	1.76
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	0.20
Bulky waste / Furniture (20 03 07)	18.66
Canteen/Office/Adhoc waste (20 03 01)	12.86
Liquids (16 10 02)	15.12
Oils (13 01 13*)	0.03
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	7.76
Hazardous waste*	1.21
Other waste	33.06
Mixed construction and/or demolition waste (17 09 04)	451.46

Waste Benchmark Calculator

These figures are calculated based on your floor area of **57731.0 m^2** and your project type of **Residential**

If you have not entered a floor area, this table will not be populated.

Product	Tonnes
Bricks (17 01 02)	616.34
Tiles and Ceramics (17 01 03)	43.38
Concrete (17 01 01)	838.43
Inert (17 01 07)	2234.17
Insulation materials (non hazardous) (17 06 04)	45.35
Metals (17 04 07)	149.81
Packaging materials (15 01 06)	276.88
Plasterboard / Gypsum (17 08 02)	367.40
Binders (17 01 01)	8.65
Plastic (excluding packaging waste) (17 02 03)	187.22
Timber (17 02 01)	783.28
Floor coverings (soft) (20 01 11)	6.81
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	3.28
Bulky waste / Furniture (20 03 07)	29.14
Canteen/Office/Adhoc waste (20 03 01)	93.81
Liquids (16 10 02)	3.72
Oils (13 01 13*)	0.82
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	49.22
Hazardous waste*	53.83
Other waste	271.66
Mixed construction and/or demolition waste (17 09 04)	2582.48

Waste Benchmark Calculator

These figures are calculated based on your floor area of **2010.0 m^2** and your project type of **Commercial Retail**

If you have not entered a floor area, this table will not be populated.

Product	Tonnes
Bricks (17 01 02)	6.59
Tiles and Ceramics (17 01 03)	0.93
Concrete (17 01 01)	40.98
Inert (17 01 07)	90.92
Insulation materials (non hazardous) (17 06 04)	0.66
Metals (17 04 07)	8.67
Packaging materials (15 01 06)	3.49
Plasterboard / Gypsum (17 08 02)	3.31
Binders (17 01 01)	0.16
Plastic (excluding packaging waste) (17 02 03)	1.97
Timber (17 02 01)	11.68
Floor coverings (soft) (20 01 11)	0.08
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	0.02
Bulky waste / Furniture (20 03 07)	0.05
Canteen/Office/Adhoc waste (20 03 01)	6.00
Liquids (16 10 02)	0.38
Oils (13 01 13*)	0.01
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	4.00
Hazardous waste*	6.91
Other waste	5.47
Mixed construction and/or demolition waste (17 09 04)	75.03

Waste Benchmark Calculator

These figures are calculated based on your floor area of **35418.0 m^2** and your project type of **Commercial Retail**

If you have not entered a floor area, this table will not be populated.

Product	Tonnes
Bricks (17 01 02)	116.20
Tiles and Ceramics (17 01 03)	16.41
Concrete (17 01 01)	722.18
Inert (17 01 07)	1602.09
Insulation materials (non hazardous) (17 06 04)	11.59
Metals (17 04 07)	152.78
Packaging materials (15 01 06)	61.54
Plasterboard / Gypsum (17 08 02)	58.25
Binders (17 01 01)	2.84
Plastic (excluding packaging waste) (17 02 03)	34.65
Timber (17 02 01)	205.87
Floor coverings (soft) (20 01 11)	1.41
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	0.28
Bulky waste / Furniture (20 03 07)	0.88
Canteen/Office/Adhoc waste (20 03 01)	105.76
Liquids (16 10 02)	6.72
Oils (13 01 13*)	0.21
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	70.53
Hazardous waste*	121.72
Other waste	96.39
Mixed construction and/or demolition waste (17 09 04)	1322.14

Waste Benchmark Calculator

These figures are calculated based on your floor area of **1304.0 m^2** and your project type of **Leisure**

If you have not entered a floor area, this table will not be populated.

Product	Tonnes
Bricks (17 01 02)	5.23
Tiles and Ceramics (17 01 03)	0.27
Concrete (17 01 01)	11.02
Inert (17 01 07)	39.13
Insulation materials (non hazardous) (17 06 04)	0.45
Metals (17 04 07)	2.33
Packaging materials (15 01 06)	2.93
Plasterboard / Gypsum (17 08 02)	4.89
Binders (17 01 01)	0.12
Plastic (excluding packaging waste) (17 02 03)	2.67
Timber (17 02 01)	9.90
Floor coverings (soft) (20 01 11)	0.11
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	0.10
Bulky waste / Furniture (20 03 07)	0.43
Canteen/Office/Adhoc waste (20 03 01)	2.88
Liquids (16 10 02)	0.16
Oils (13 01 13*)	0.00
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	3.41
Hazardous waste*	0.93
Other waste	12.16
Mixed construction and/or demolition waste (17 09 04)	68.93

We are Waterman, where every project matters

We deliver progressive, sustainability-driven environmental and engineering consultancy services across every sector. We think differently, and we're harnessing our collective expertise to deliver greener, healthier and well-connected communities, networks and built environments.

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