Temple Group Ltd

One Battersea Bridge
March 2025

CIRCULAR ECONOMY STATEMENT REVISION 2

temple

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1. Executive Summary

One Battersea Bridge ('the Proposed Development') is approximately 21,807 m^2 (GIA) of office, , community, residential and a restaurant space located in the 1 Battersea Bridge Road, London, SW11 3BZ on a site which extends to 0.115 ha and currently comprises a part five storey, part six-storey office buidling with a basement level car park (the 'Site'). The Site is bound to the north by the River Thames, to the east by Thameswalk Apartments and commercial space, to the south by the Royal College of Art, and to the west by Battersea Bridge Road.

The Proposed Development will consist of a comprehensive redevelopment of the site to include demolition of existing building and erection of a part 10 storey, part 28 storey building (plus ground floor and basement levels) comprising residential use (Class C3), office use (Class E), community use (Class F2), and a restaurant (Class E), with associated car parking, cycle parking, public realm, landscaping and other associated workssitting within the boundary of the London Borough of Wandsworth (LBW).

1.1. Summary of the Approach, Key Commitments and Targets

The purpose of this Circular Economy Statement (CES) is to demonstrate that the Proposed Development has applied circular economy principles, in line with London Plan Policy SI 7. Following the nine pillars of the Circular Economy, Promontoria Battersea Limited (the Applicant) will:

Ensure that material and resource use is minimised as far as possible. Focus has been given to minimising the quantities of materials and other resources used, as well as ensuring materials will be sourced responsibly during construction.

Ensure the design is flexible, adaptable, designed for longevity, reuse and recovery and by designing out construction and excavation waste arisings.

Manage excavation, construction and municipal waste to maximise recycling and reuse and minimise waste sent to landfill, in accordance with the waste hierarchy, managing as much waste as possible on site.

It is deemed unfeasible to retain the existing structures on site given their ofpoor quality and underutilised, and due to the desire to change the land use and aspirations for the project.

The proposed mixed-use development, exceeding 20 storeys, imposes vertical and core loads approximately 350% higher than the existing foundations can support, necessitating a deeper foundation system. Existing columns and core walls lack the capacity to accommodate the increased height, with wind load reactions rising by over 1200%. Compliance with the Building Safety Act (BSA) further complicates reuse, as additional staircases are required. The basement structure is also unsuitable, as it cannot withstand the revised loading conditions, and its retention would compromise structural integrity. Strengthening the existing elements would be

prohibitively complex and costly, making demolition and new construction the only viable option. 30 new homes could be achieved by building refurbishment which is substantially less than the scheme proposed. Whilst this may be the case, extensive work would need to be undertaken to the existing building to bring it up to modern standards in terms of energy efficiency and performance which would significantly affect viability and not allow a policy compliant affordable housing offer to be achieved.

By constructing a new development, the operational efficiency of the building can be optimised without the constraints of unsuitable existing structures. As demonstrated in this document, the Proposed Development has been designed for flexibility, adaptability and longevity. The existing office building on site will be demolished and where possible its elements reused and recycled elsewhere.

The Applicant will continue to work with all key stakeholders on an overall sustainability vision for the development. They will minimise the embodied carbon of the project as demonstrated in the Whole Life Carbon Assessment (WLCA), submitted alongside this document in line with London Plan (2021) Policy SI 2. Further workshops may be held to develop and investigate Circular Economy objectives with specific metrics (design team, contractor, suppliers, and facility managers).

At RIBA Stage 6, a Post-completion Report will be produced, setting out the predicted and actual performance against all numerical targets. Updated versions of the Recycling and Waste Reporting Form and Bill of Materials will be provided (alongside supporting evidence) and should any variation have occurred this will be identified and explained.

2. Introduction

2.1. Description of the Development

Temple has undertaken a Circular Economy Statement (CES) for the proposed mixed-use redevelopment of One Battersea Bridge (the Proposed Development), on behalf of Promontoria Battersea Limited (the Applicant). This is in support of the planning application for the Proposed Development.

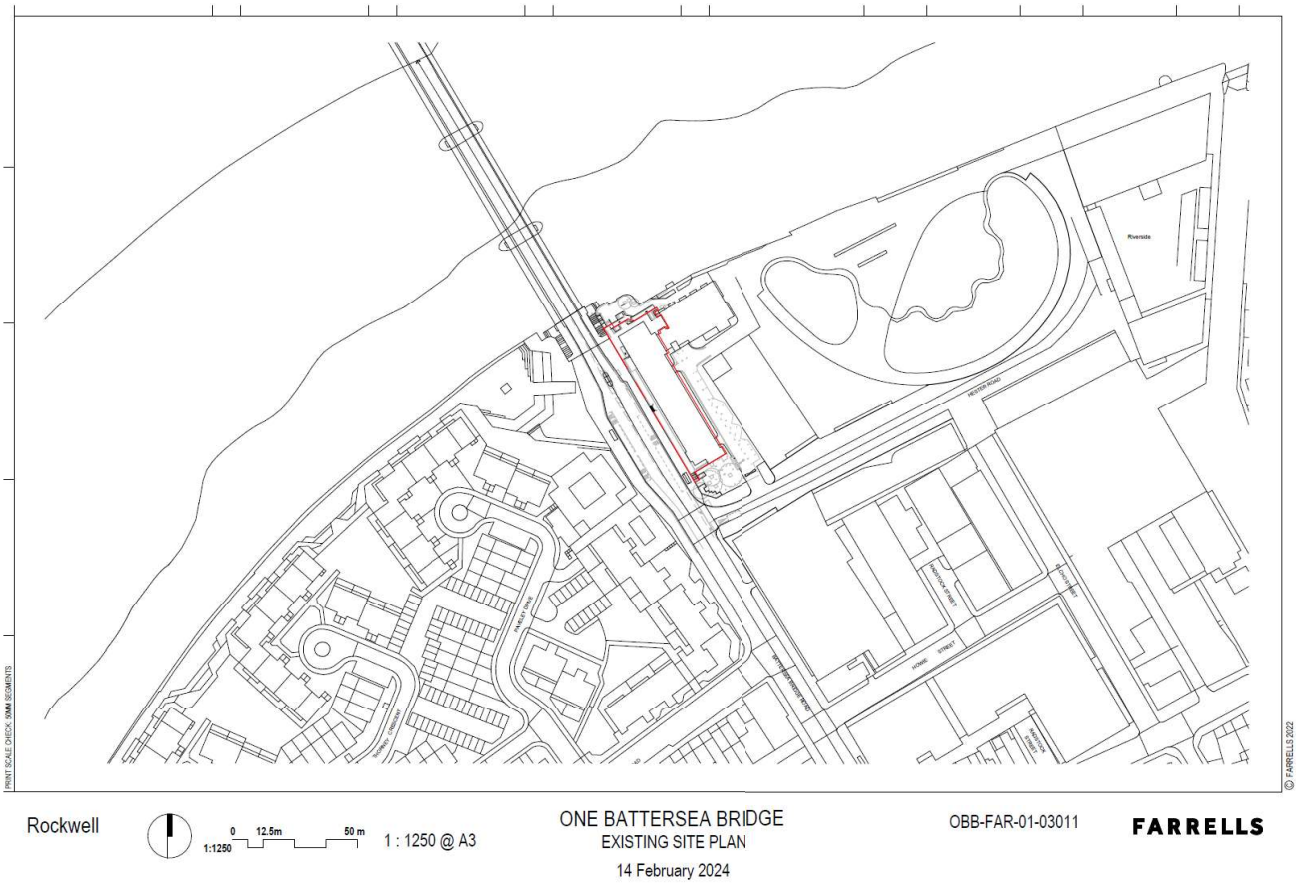
1 Battersea Bridge is approximately 21,807 m^2 of office, restaurant, community and residential space located in 1 Battersea Bridge Road, London, SW11 3BZ, on a site which extends to 0.115 ha and comprises a part five-storey, part six-storey 1980s office building (Class E) with a basement level car park providing 33 car parking spaces (the 'Site'). The Site is bound to the north by the Thames Path and River Thames, and to the south by Hester Road. Battersea Bridge Road bounds the Site to the west, with a six-storey residential building is situated to the immediate east. The nine-storey Albion Riverside development is situated further to the east. Vehicular access to the Site is via Hester Road to the south.

The Proposed Development will consist of comprehensive redevelopment of the site to include demolition of existing building and erection of a part 10 storey, part 28 storey building (plus ground floor and basement levels) comprising residential use (Class C3), office use (Class E), community use (Class F2), and a restaurant (Class E), with associated car parking, cycle parking, public realm, landscaping and other associated works sitting within the boundary of the LBW.

It provides a mix of uses, including retail / restaurant uses and community on the ground floor, commercial space across the first floor and residential uses above.

The Site (**Figure 1**) is bound to the north by the Thames Path and River Thames, and to the south by Hester Road. Battersea Bridge Road bounds the Site to the west, with a six-storey residential building situated to the immediate east. The nine-storey Albion Riverside development is situated further to the east. Vehicular access to the Site is via Hester Road to the south.

Figure 1 – Site location



This report is structured in accordance with the core guiding principles and commitments, as identified in the GLA's 'Circular Economy Statement: Guidance (pre-consultation draft)[1] and takes into consideration the London Plan 2021 Policy SI 7[2] to identify high level strategic opportunities early in the development process.

2.2. Method Statement

Table 1 Circular Economy Guiding Principles

Guiding Principle	Individual Circularity Principles/Commitments
To conserve resources, increase efficiency and source sustainably.	Minimise the quantities of materials used. Minimise the quantities of resources used. Specify and source materials and other resources responsibly and sustainably.

[1] Mayor of London Circular Economy Statement Guidance Pre-Construction Draft

[2] Mayor of London, The London Plan March 2021. The Spatial Development Strategy for Greater London

To design to eliminate waste (and for ease of maintenance).	Design for longevity, adaptability or flexibility and reusability or recoverability. Design out construction, demolition, excavation, and municipal waste arising.
To manage waste sustainably and at the highest value.	Manage demolition waste. Manage excavation waste. Manage construction waste. Manage municipal waste (and industrial waste, if applicable).

Through the process undertaken so far various options available for implementing Circular Economy principles have been identified within the Proposed Development.

Table 2 Circular Economy Options at One Battersea Bridge

Option	Description	Feasibility One Battersea Bridge
Retain/Refurbishment	Redeveloped for similar needs and uses but meeting or exceeding current regulations 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.	It is not technically feasible to retain the building currently in situ. Given the age of the office buidling currently sitting on the site, the existing fabric/ building systems do not meet modern standards in terms of energy efficiency or performance and will therefore be removed from site prior to possession of the site for this development. Refurbishment/retention of the building has been screened out of this report, due to the poor quality of the building.
Refit/Repurpose	Redeveloped to accommodate different needs and/or uses (e.g., from industrial use to mixed use) but exceeding current regulations and standards through with significant	It is not technically feasible to retain the building on site due to it's poor quality. Therefore, repurposing/refitting the building on

Option	Description	Feasibility One Battersea Bridge
	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.	site has been screened out of this report.
Deconstruct and Reuse (remanufacture)	Building/infrastructure disassembled, with the entire asset being reconstructed elsewhere, or individual components directly reused elsewhere.	It is not technically feasible to retain the building on site. However,part of the existing building's elements will be reused on other sites (e.g. reclaimed bricks, glass panels, lighting).
Demolish, recycle and compost	Traditional demolition, with elements and materials converted into new elements and materials and objects for use on the site or on another site nearby.	Where materials cannot be deconstructed and reused, they will be demolished, recycled, and reused to minimise the amount of waste produced.

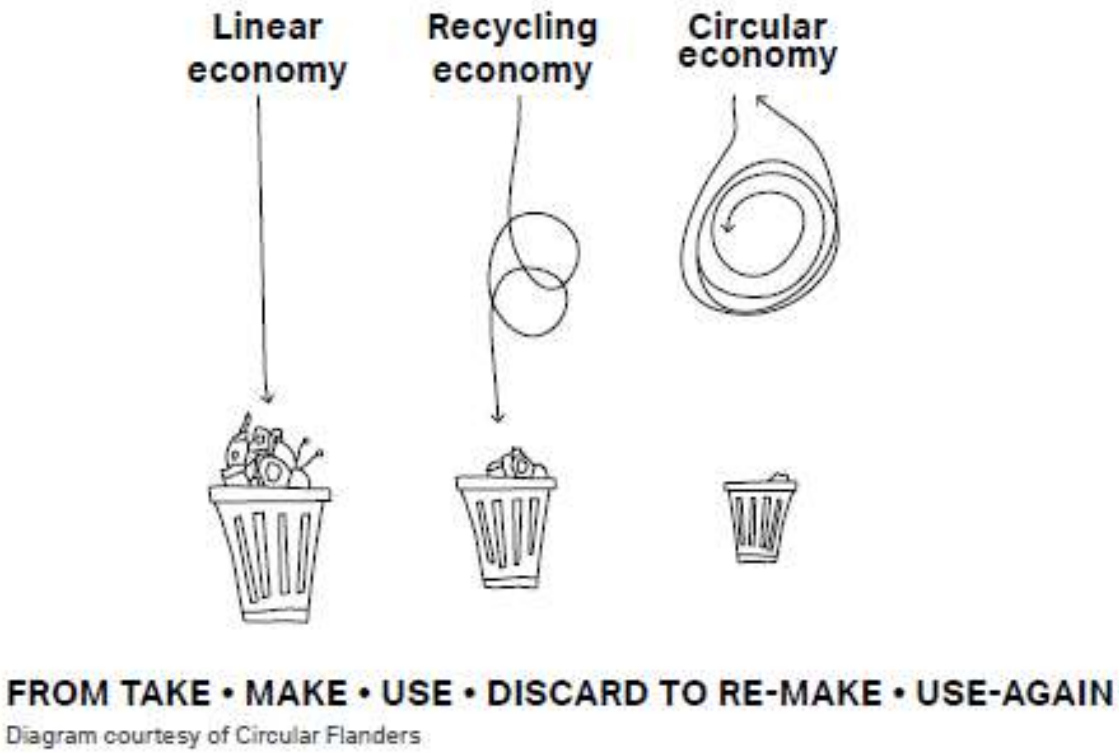
A detailed description of how the targets will be achieved are presented in the Strategic Approach Table (**Appendix B**), The Key Commitments Table (**Appendix C**), the Bill of Materials (**Appendix D**), and the Waste Metrics reporting form (**Appendix E**).

2.3. Circular Economy Aspirations

The Ellen MacArthur Foundation defines the circular economy as one that is "restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles"[3].

[3] Ellen MacArthur Foundation

Figure 3 Linear, Recycling and Circular Economies (GLA, 2019)



Current and future trends point toward the need for a fundamental shift in the way resources are consumed. A shift to a circular economy will provide considerable economic opportunities as the Circular Economy stands in contrast to the current linear system, where materials are mined, manufactured, used, and thrown away (**Figure 3**). The 'Take, Make, Dispose' model, or 'linear' economy, has fuelled rapid growth but is inherently unsustainable in the long term where resources are finite. Widespread adoption of Circular Economy principles would dramatically reduce the quantity of new material imported into the city, and the amount of waste needing to be managed including that exported.

The aim of this CES is to support the creation of a building that is high quality, flexible and pays attention to its lifespan, through appropriate construction methods and the procurement of robust materials. This is achieved by improving resource efficiency and keeping products and materials at their highest value for as long as possible and promoting waste avoidance and minimisation, in line with the waste hierarchy.

3. Circular Economy Commitments

This section provides a summary of the specific commitments by the Applicant which are either embodied within the design already or will be investigated during the remaining design stages.

Appendix C provides a description of how each of the nine principles of circularity (**Table 1**) has been or will be applicable to each of the building 'layers' as described in the GLA guidance and RICS New Rules of Measurement (2012):

- Site; Substructure; Superstructure; Shell/skin; Services; Space; Stuff; Construction stuff.

3.1. Commitment 1.1 – Minimise the Quantities of Materials Used

The Proposed Development will ensure that material and resource use is minimised as far as possible.

The Proposed Development will minimise the quantities of concrete by adopting lean design principles and maximise the use of demolished material from the present buidling on site. Speculative finishing of spaces will be avoided if there isn't a known tenant, avoiding the risk of unnecessary waste materials. Known tenants will be involved in finishing decisions.

For the Proposed Development Whole Life-Cycle Carbon Assessment (WLCA) was undertaken in line with London Plan Policy SI 2. Whole Life-Cycle Carbon (WLC) emissions are the sum total of all asset related GHG emissions and removals, both operational and embodied over the life cycle of an asset including its disposal. With operational efficiencies improving, the significance of embodied carbon emissions increases, in turn increasing the potential for reduction in overall carbon emissions through structural design choices including material selection. The WLCA uses LCA software (OneClickLCA) to establish performance indicators and help inform material and design choices.

3.2. Commitment 1.2 – Minimise the Quantities of Resources Used

The Site is previously developed land which is currently occupied by a underutilised office buidling of poor quality, thereby its redevelopment makes the best use of the land resource.

With regards to building operation, services and appliances offer the greatest opportunity to reduce resource use. The proposed Energy Strategy[4] has been developed in line with the GLA energy hierarchy, as outlined below:

Be Lean: Use Less Energy – Passive design measures will reduce the demand for energy within buildings, without consuming energy in the process. The Proposed Development will include

[4] One Battersea Bridge, Energy Strategy 2024.

passive solar heating to limit the need for space heating in winter and limiting summertime solar gains; mechanical ventilation and heat recovery units to reduce uncontrolled ventilation in winter periods; commercial spaces will use active cooling provided via a VRF systems connected to an air source heat pump to reduce energy demands.

Be Clean: Supply Energy Efficiently – Whilst there are currently no District Heat Network proposals in the vicinity of the Site, the Proposed Development looks to be served by a single Energy Centre with a communal low temperature heating system, which will be designed in accordance with the CIBSE Heat Networks: Code of Practice. In order to reduce distribution losses, variable flow control systems will be integrated to lower flow rates.

Be Green: Use Renewable Energy – High efficiency air source heat pumps are proposed to meet the thermal loads of the Proposed Development. It is proposed that the commercial spaces will be serviced by a VRF system which will provide space heating, cooling and ventilation and be connected to ASHP's. Photovoltaics are proposed to be incorporated on the roof top to provide onsite electricity generation.

Be Seen: Monitor, verify, and report on energy performance – Effective metering will be enabled by the provision of suitable infrastructure within the building services systems. Furthermore, the Applicant is committed to monitoring and reporting sustainability performance and data every year. The Proposed Development will fall under the Applicant's energy and carbon monitoring and reporting regime, which includes both landlord and tenant usage and encourages engagement with tenants to optimise operational performance.

In terms of carbon emissions, engagement with the design team has been undertaken to address the end-of-life strategy for the material. Building material data including quantities, types and formation has been made available and Whole Life Carbon Assessment (WLCA)[5] using the One Click LCA tool has been produced in conjunction with this CES. The aim of this is to identify and minimise the carbon emissions across the overall project life cycle, in accordance with new London Plan Policy SI 2. The initial findings and early recommendations have been included in an accompanying report in support of the planning application.

Fossil fuel consumption will be reduced (in the 'construction stuff' layer) by a number of aspects which will be set out in the supporting Construction Environmental Management Plan (CEMP) but could include using alternatives to diesel / petrol powered equipment where possible. Photovoltaics will be used where possible to reduce grid electricity consumption.

Consideration will be given to offsite modular construction where possible to reduce construction programme and therefore associated resources.

[5] One Battersea Bridge Whole Life Cycle Analysis. March 2024

Consideration will be given to conserve water during all project phases and will include measures such as[6]:

- Installing smart water meters and using water efficient goods.
- Prioritising design and construction materials with a lower water footprint (e.g., altering a manufacturing process to use less water or coatings that prevent water leakage).
- Ensuring pipes and services are maintained regularly to prevent leaks.

3.3. Commitment 1.3 - Specify and Source Materials and Other Resources Responsibly and Sustainably

Any new material specified in the Proposed Development will aim to be low impact materials with little or no adverse effect on either the environment or on human health throughout its lifecycle. Anticipated construction material quantities are shown in **Appendix D**. The Contractor will be required to source materials sustainably and procurement will be guided throughout the project and include the following:

- Preference will be given to the use of local sources and suppliers whenever possible and commercially viable to reduce 'transport miles'.
- 100 % of timber will be Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC) or Forest Law Enforcement, Governance and Trade (FLEGT). Certified.
- 100 % concrete will be BES 6001 certified (Responsible Sourcing of Construction Products) and Ground Granulated Blast-furnace Slag (GGBS) content will be optimised for it's lower embodied carbon content.
- Where possible steel will be sourced from suppliers rated under the CARES Sustainable Constructional Steel Scheme.
- Where feasible other major construction materials will be certified under an Environmental Management System (EMS) such as ISO 14001.
- Chemicals on the Cradle-to-Cradle Red list will be eliminated from the materials inventory.
- Where available the Principal Contractor will obtain an inventory of all ingredients used within each product. Some example labels for material transparency include

[6] Water Efficiency - The Contribution of Construction Products. 2015

Health Product Declaration (HPD), Declare Label and Cradle to Cradle Material Health Certification.

The use of recycled content and secondary aggregates will be encouraged and given priority, reducing the demand for virgin material and optimising material efficiency in construction. The design has taken in to account the reuse of reprocessed material from the Site, e.g., recycled aggregates, timber, or masonry. As a minimum:

- Engineered fill (up to 100 % recycled content).
- Concrete (10 % recycled aggregate content, and / or 10 % cement replacement with Ground Granulated Blast-furnace Slag (GGBS) or with fly ash. Fly ash cement content can reach 30 %, whilst GGBS can be increased to 50 % for all mixes providing longer curing time can be accommodated in the construction process).
- Reinforced steel (up to 40 % recycled content).
- Blockwork and concrete paving (at least 50 % recycled content).
- Insulation (at least 50 % recycled content).
- Plasterboard (at least 95 % recycled content).

3.4. Commitment 2.1 - Design for Longevity, Adaptability, Flexibility, Reuse and Recoverability

Over the course of the Proposed Development's lifespan, changes could be required because of evolving functional demands. The project will seek to avoid any unnecessary materials use, cost and disruption arising from any future works by designing for adaptability and flexibility.

In terms of longevity, the Proposed Development will be durable, resilient, and able to cope with societal and environmental change. It will require little modification or replacement of parts, due to its 'loose fit', proportions and readiness for alternative technologies. This will result in long-term operational cost and whole life carbon savings, as well as avoidable weathering and changes to climatic conditions over time.

To be adaptable, the Proposed Development will be designed to meet the needs of the present, but with consideration of how those needs might change in the future. Elements which are known to require replacement within the life of the building will be removable without undue waste or damage. Furthermore, MEP plant can be accessed and maintained from basement level to facilitate easy replacement and upgrades as necessary.

Flexibility will be achieved through the design of spaces which will have flexible floorplates where feasible to allow easy reconfiguration. Spaces will be designed without excessive finishes, avoiding excess waste during reconfigurations.

Climate change adaptation will be incorporated within the design, with durability and longevity in mind, to ensure the scheme allows for challenging climatic conditions. Passive design strategies, the reduction in water usage, the fabric first approach to energy efficiency, retention and maintenance of landscaping and trees, and overheating analysis / ventilation strategy will enable the Proposed Development to cope with future climate scenarios, reflecting risks from high temperatures and high rainfall.

Part of the existing structure which is retained to be of good quality will be reused and recovered in construction of the Proposed Development.

However, efforts will be made to reuse demolition and construction waste onsite for the Proposed Development. It is anticipated that 90% of the material from the current building could be recycled, 50% of the total volume of materials of the current building (which consists of the concrete frame) could be recycled onsite with 10% being reused in the piling mats for the Proposed Development, with the other 40% taken offsite to be used in hardcore and piling mats elsewhere. Of the remaining material, 40% could be recycled offsite and 10% would go to landfill. 96% of construction waste is anticipated to be recycled offsite with 4% going to landfill.

Construction materials will be shared between sites, where feasible. The Contractor will sign up to an industry approved measure, such as BRE's Smart Waste[7] to support this.

It should be noted that both full and partial reuse of the existing structure were considered, however neither were deemed viable for the following reasons:

- Foundations - The reuse of the existing foundations is not feasible due to the significantly increased loads from the proposed development. The new mixed-use tower, exceeding 20 storeys, along with the adjoining 11-storey element, imposes vertical column and core loads that are anticipated to exceed those of the existing structure by approximately 350%. The new foundation system must be significantly deeper to accommodate the proposed loads, directly conflicting with the existing foundations, which are neither designed nor positioned to support the proposed development.
- Column and Core Walls - The existing columns and core walls cannot be reused due to their inadequate capacity to support the increased loads from the new structure. Also, due to the height of the building increased by at least 3.5 times, the base overturning reaction at the core due to applied horizontal wind loads will increase by more than 1200%. Furthermore, the introduction of additional staircases, as mandated by the Building Safety Act (BSA) for buildings exceeding 18m in height, further complicates any attempt to integrate the existing cores into the new design.

[7] https://www.bresmartsite.com/products/smartwaste/

The spatial constraints of the site make it unfeasible to adapt the existing vertical structure to comply with these requirements.

- Basement Structure - The existing basement box structure is unsuitable for reuse as the new development requires a deeper basement to accommodate additional functional requirements. The existing basement's structural elements, including retaining walls and slabs, are not designed to withstand the revised loading conditions. Additionally, the positioning of new foundations and core walls would compromise the structural integrity of the existing basement, making its partial or full retention impractical.
- Feasibility of Strengthening Existing Structure - Strengthening the existing structural elements to meet the requirements of the proposed development is not a viable option due to the scale and extent of modifications needed. The cost, complexity, and disruption associated with these modifications would be prohibitive, making demolition and new construction the only feasible approach.

3.5. Commitment 2.2 - Design Out Construction, Demolition, Excavation and Municipal Waste Arisings

Standardisation and modularisation will be considered to enable the Applicant to design out the need for components or materials and to ensure that waste reduction is planned in from project inception to completion. Material dimensions will use standard design shapes and sizes to enable future reuse, e.g., minimal bespoke cutting of materials as this can make replacements difficult to obtain. The Applicant will work towards <5 % 'special' components across standardised and / or modular designs. If feasible, the Proposed Development will use products and services designed to be assembled, deconstructed, and reused or recycled on a part-by-part basis. This will have benefits like enabling easier future recovery, incorporation in new designs, and reuse, and will result in less waste in manufacture and construction.

Offsite fabrication and DfMA (Design for Manufacture and Assembly) approaches will be adopted where practical to improve efficiencies, reducing both carbon emissions and the creation of waste.

Packaging will be minimised through design and contractors will be obliged to make use of supplier take-back schemes.

At the end of life (given to be 60 years), the strategy has been, where practical, designed for repurpose and replacement of individual elements, based on their design life periods. This will be developed in more detail as the design progresses but could be done through planning future of disassembled materials through a contractual agreement, making information available via a material passport and apply Building Information Modelling (BIM) to understand

future life and creating a materials inventory detailing all the building elements and their reuse / recycled potential.

3.6. Commitment 3.1 – Manage Excavation Waste

The Defra Waste Hierarchy has been applied in the Proposed Development, with indicative targets developed for each waste stream, as well as an overall construction waste target and included on the datasheet in **Appendix E**. Standard, Good and Best Practice level targets will be updated at detailed design stage when more information is known.

Excavation waste will be managed by the relevant subcontractor. The Proposed Development will aim for net-zero import / export of soil to avoid excavation waste. In the event that this is unachievable:

- No excavation waste will be sent to landfill, unless hazardous or requires specialist disposal.
- It is not anticipated that topsoil from excavation activities will be generated. However, in the event it is created, topsoil will be given special attention due to its high value. No topsoil will be sent to landfill.

3.7. Commitment 3.2 – Manage Construction Waste

In accordance with government targets, the demolition and construction contractor will be required to maximise the proportion of recyclable materials, including reclaimed aggregates from the demolition works. Onsite reuse will be prioritised before offsite reuse or recycling. As part of this, the Proposed Development will aim to achieve a 95 % diversion from landfill rate for all construction waste.

All waste or other materials removed from the site will be in accordance with the requirements of the Environment Agency (EA), Control of Pollution Act 1974 (COPA), Environment Act 1995, Special Waste Regulations 1996 and the Duty of Care Regulations 2003. Where materials cannot be recycled or re-used on site, the Principal Contractor will identify opportunities for potential re-use of materials off-site. To reduce potential risks throughout the demolition and construction phases of the proposed development, the following measures will be implemented:

- All waste shall be stored in appropriate containers or bays prior to consignment. Containers shall be sufficiently allocated to maximise the segregation of material for reuse or recycling on-site. Where this is not practicable, materials will be segregated for off-site recycling.

- All containers and bays will be clearly labelled with the waste contents. Labelling will include any specific handling instructions (e.g., hazardous labelling), and will be sufficiently clear to minimise cross contamination of waste streams.

Specific measures to mitigate emissions associated with demolition work includes reusing and recycling demolition waste. This will reduce vehicle emissions associated with transporting the waste to landfill by first prioritising what can be reused/recycled onsite. Additionally, energy efficient equipment will be sourced where possible and responsible site practice will be followed under the direction of the Site Manager to ensure that no vehicles are idling and that equipment only runs when in use.

3.8. Commitment 3.3 – Manage Municipal Waste

Waste reduction during the operational phase has also been considered. Appropriate levels of waste storage will be provided within the residential homes and with the bin storage areas to promote source separation of recyclable materials. Waste will be stored separately by waste stream (residual waste, DMR, and food waste) in designated containers.

Storage for bulky items can facilitate the collection of white goods and other items, to potentially lead to improved repairs and recycling rates.

Commercial tenants will segregate waste at the source within their areas. A commercial waste contractor will be appointed to service the development and collect waste directly from the commercial waste store.

4. End of Life Strategy

In line with Circular Economy Principles, an end-of-life strategy is important to prevent unintended waste creation upon deconstruction of the building. The below table makes reference to the building in layers principle, outlining the appropriate strategies which vary depending on the built element.

Table 3 Building Layers End of Life Strategy

Element	Building in layers principle	End of Life Strategy / Opportunity
Structure	Design for Deconstruction	Enable major structural components to be deconstructed at end of life without causing undue waste by enacting a design for disassembly plan.
Skin	Design for ease of refurbishment	The building is designed to be robust and expected to last at least 60 years. Notwithstanding, elements such as windows are expected to require replacement during the lifespan of the building. Design will allow for their repair and replacement without creating excessive waste. Windows will be designed to be removeable with minimal impact to surrounding materials and replaceable from the inside to avoid the need for extensive scaffolding.
Services	Design for long life, loose fit	Services will be designed to cater for present and future needs. Service replacements will be designed into the Proposed Development to avoid the creation of unnecessary waste.
Space	Design for flexibility & adaptability	Internal partitions shall be designed to be non-structural to allow internal reconfiguration of spaces.
Stuff	Design for service and sharing	Consideration will be given to partnership contracts with companies, incentivising longer lasting products and those that allow for reuse and refurbishment as occupants requirements change.

Site	Design for remediation, integrated infrastructure and longevity	If the Proposed Development were to be removed in the future, the site would be returned to the same state as found.

Several measures implemented in this project go beyond industry best practices. These initiatives are detailed in Table 4.

Table 4. Beyond standard practice measures adopted for Project

Measure adopted	Minimum requirements	One Battersea Bridge Project (Beyond Standard Practice)	Policy Name
Recycled Content in Materials	10-20% recycled content is the minimum requirement for major construction materials.	The project exceeds 20% recycled content, prioritising the use of sustainable timber, low-carbon alternatives, and incorporating recycled aggregates and steel in its construction.	UK Green Building Council Guidelines
Design for Deconstruction	Not mandatory but encouraged for certain developments.	The project fully integrates modular design and deconstruction-friendly materials, ensuring future adaptability and material reuse at the building's end of life.	GLA London Plan - Policy SI7; UKGBC Guidelines; Wandsworth Borough Council Local Plan
Energy Efficiency	Meets Part L of the Building Regulations, focusing on reducing energy consumption in construction and operation.	The project exceeds Part L requirements by designing a zero-carbon building with renewable energy generation, energy storage, and high-	Building Regulations Part L

		efficiency insulation to optimise energy performance.	
Sustainable Sourcing of Materials	Encourages local sourcing and sustainable timber but does not mandate specific percentages.	The project mandates the use of locally sourced materials and sustainably certified timber, emphasizing low-carbon concrete and steel.	GLA London Plan Policy SI7; UK Green Building Council Guidelines
Material reuse	Encourages material reuse and resource efficiency.	The project fully embraces a closed-loop system, prioritising material reuse, on-site recycling, and circular business models throughout the construction process.	GLA London Plan - Policy SI7

5. Conclusion

The purpose of this Circular Economy Statement is to demonstrate that the Proposed Development at One Battersea Bridge has considered the circular economy principles to minimise embodied carbon, maximising the value extracted from materials and prioritising the reuse and recycling of materials.

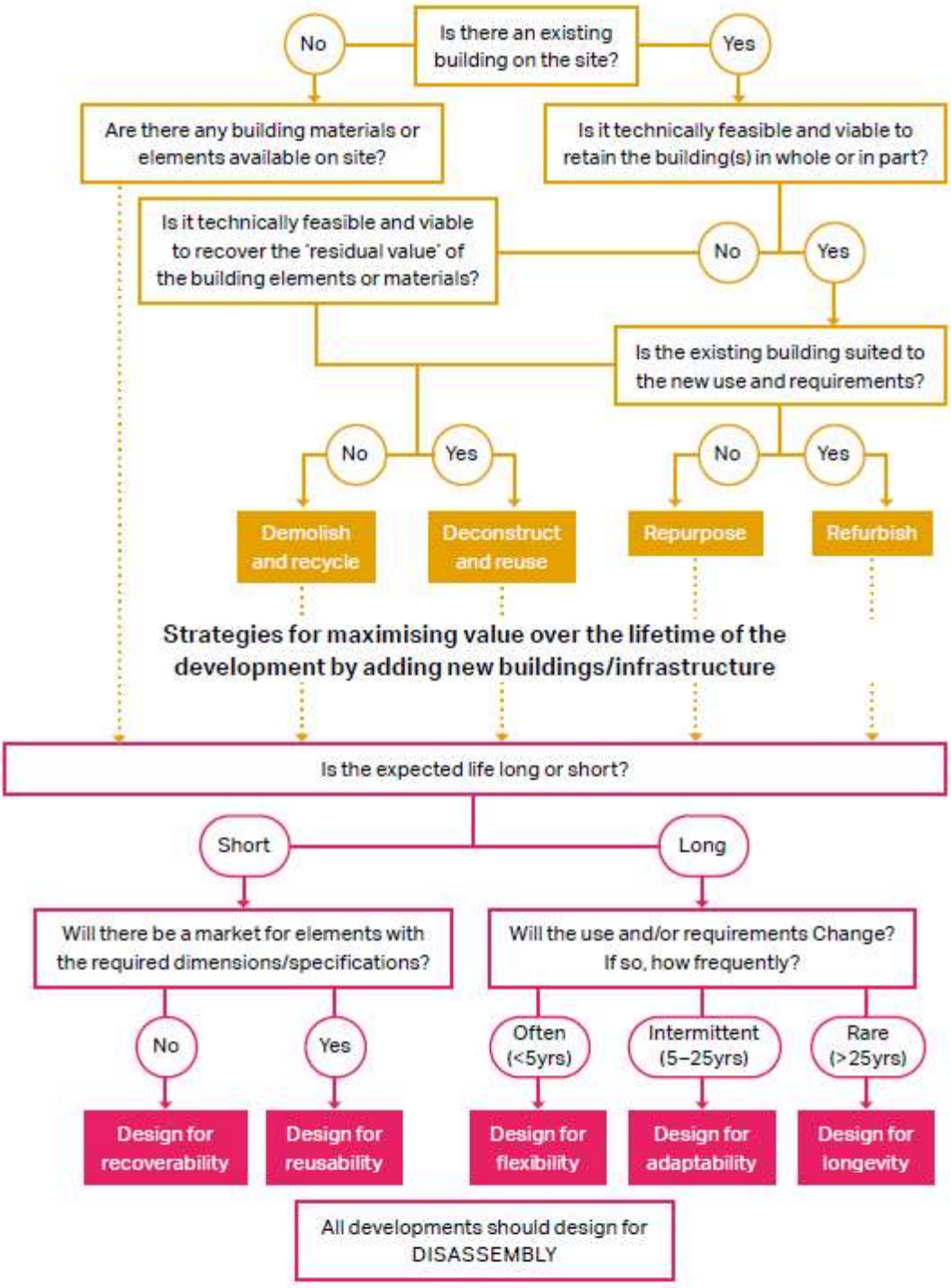
With regard to Circular Economy principals, the Applicant has demonstrated:

- How demand for materials will be minimised.
- How demand for quantities of resources will be reduced. Including, land, carbon dioxide, water, and energy.
- How materials and resources will be sourced sustainably considering low impact materials and recycled content.
- How the Proposed Development is designed for longevity, adaptability, flexibility, reuse and recoverability.
- How the Proposed Development will design out waste through, standardisation of components, modularisation, building in layers, servitisation / leasing of materials and through an end-of-life strategy (including design for disassembly).
- How construction demolition, excavation and municipal waste will be reduced and handled at the Proposed Development in accordance with the waste hierarchy.

In addition:

- The Applicant will continue to work with all key stakeholders on an overall sustainability vision for the Proposed Development.
- The Applicant will minimise the embodied carbon of the project as demonstrated in the Whole Life Carbon Assessment.
- On completion, success against objectives will be reviewed and an analysis will be undertaken on lessons learnt (whole design team, contractor and relevant supply chains).

Appendix A Circular Economy Decision Tree



Mayor of London Circular Economy Statement Guidance

Appendix B Strategic Approach Template

Demonstrates the strategic approach to focus on conserving materials and resources, and to source materials responsibly.

Aspect	Phase / Building / Area	Steering Approach	Explanation	Target	Supporting Analysis / studies/ survey/ audits
Circular Economy Approach for the new development	Whole Development	Sustainable Sourcing	Contractor to operate a Sustainable Procurement Plan. Materials to be sustainable sourced. Local suppliers to be preferred where possible to reduce material transport distances.	100% FSC/PEFC certified timber 100% concrete BES 6001 certified (Responsible Sourcing of Construction Products). Where possible steel to be sourced from suppliers rated under the CARES Sustainable Constructional Steel Scheme. Other materials to be certified under an Environmental Management System (EMS) such as ISO 14001.	Unavailable at time of writing report
		Manage Demolition and Construction Waste	Contractor to record total demolition and construction waste generated and how this waste will be disposed	95% diversion from landfill at end of life.	Unavailable at time of writing report

Aspect	Phase / Building / Area	Steering Approach	Explanation	Target	Supporting Analysis / studies/ survey/ audits
			of. Measures to be implemented to manage and reduce construction waste.		
		Design for Durability	Durable, long-lasting materials will be utilised.	Durable external materials to be used to limit effects of environmental degradation. Measures to be implemented to protect finishes internally and externally.	Unavailable at time of writing report
		Optimise Material Use	Materials to be used efficiently to reduce wastage on site.		Unavailable at time of writing report
		Functional Adaptability	Design for adaptability and flexibility - to increase building lifespan.		Unavailable at time of writing report
		Reuse and recycling at end of life	Design for disassembly and deconstruction – to ensure materials are retained in a high value state.		Unavailable at time of writing report

Aspect	Phase / Building / Area	Steering Approach	Explanation	Target	Supporting Analysis / studies/ survey/ audits
Circular Economy Approach from Municipal waste during operation	Whole Development	Storage and segregation of operational waste	On-site bin store to accommodate sufficient storage for both recyclable and landfill waste.	65% diversion from landfill	Unavailable at time of writing report

Appendix C Key Commitments for the Proposed Development

As required by the GLA Guidance, this section demonstrates how each of the 9 circularity commitments (under the 3 core principles) have been considered in terms of the life cycles for each of the 8 building layers. The contents of this table has been completed as far as practical at this stage, and the key challenges to the assessment are identified. It is expected that this will evolve, be refined, and updated as the designs progress and new members join the project team. This table also highlights details (as far as can be specified now) as to who will be responsible for developing circularity measure and monitor the success to allow the post-construction stage of the CES to be completed.

Principle 1: Conserve resources, increase efficiency and source sustainably	
Minimise the quantities of materials used	
Site	Aim for net-zero import/export of soil. Incorporate material on site where possible; will be informed by pre-redevelopment and pre-demolition audit report.
Sub-structure	Minimise the quantities of concrete.
Superstructure	Minimise the quantities of concrete. Lean design principles adopted. Material efficiency review. Use of nature-based solutions to reduce attenuation requirements.
Shell/Skin	Lean design principles implemented for façade to reduce overall weight. Investigate opportunities for offsite modular construction.
Services	TBC.

Space	No speculative finishing of retails spaces if there isn't a known tenant, avoiding the risk unnecessary waste of materials. Involve known tenants in finishing decisions.
Stuff	No speculative finishing of retails spaces if there isn't a known tenant, avoiding the risk unnecessary waste of materials. Involve known tenants in finishing decisions.
Construction Stuff	Aspects set out in the CEMP and SWMP, to be reviewed with contractor during preconstruction supply chain engagement.
Summary	Lean design principles adopted. Design out material use and ensure adaptability to reduce operational waste.
Challenges	Limited existing site materials available for reuse.
Counter Actions +Who + When	Ensure structural design is optimised. A pre-redevelopment and pre-demolition audit has been completed to fully investigating how reuse of construction, and excavation material can be maximised. Preconstruction contractor engagement required to determine Modular construction opportunities.
Plan to prove and quality	Material efficiency review exercise.
Minimising the quantities of other resources used (energy, water, land)	

Site	Measures will be set out in Sustainability Statement. Exceed the GLA recommended 35% reduction against the notional gas boiler baseline for regulated emissions.
Sub-structure	Consider DfMA and modular design opportunities to reduce construction programme therefore associated resources (energy, water, etc).
Superstructure	Use of material replacements such as GGBS to reduce energy demands.
Shell/Skin	Follow the Energy Hierarchy. Repetition of design may provide the opportunity to consider DfMA and modular design to reduce construction programme therefore associated resources (energy, water, etc).
Services	Use of photovoltaics where possible to reduce grid electricity consumption. Achieve GLA Be Lean targets of 15% (non-domestic) reduction against the notional gas boiler. This will ensure low operational energy demand of spaces. Exceed the GLA recommended 35% reduction against the notional gas boiler baseline for regulated emissions. Centralised Energy Centre with a communal low temperature heating system will ensure low thermal operational energy consumption. Installation of flow restrictors in bathroom appliances and dishwasher/washing machines with low water consumption. Meet 105 l/p/d (litres/person/day) for residential and 10l/p/d for non-residential buildings.
Space	TBC
Stuff	TBC

Construction Stuff	Contractor to implement Construction Environmental Management Plan (CEMP) to reduce use of energy and water during construction phase.
Summary	Consideration of offsite modular construction where possible. Measures to reduce energy and water consumption. Produce energy needs renewably onsite as far as possible.
Challenges	Maturity of the market /design solutions.
Counter Actions +Who + When	Preconstruction contractor engagement required to determine modular construction opportunities.
Plan to prove and quality	Energy and Water monitoring installed and measured.
Specifying and sourcing materials responsibility and sustainability	
Site	Sustainable procurement plan to be implemented across the development. Incorporate material on site where possible; informed by pre-construction audit report.
Sub-structure	Prioritise certified products / materials, i.e.: - EPDs - BES6001 - FSC - PEFC

	- CARES - ISO14001 Concrete GGBS content to be optimised. Prioritise materials that can be reused at end of life. Prioritise locally sourced materials where possible.
Superstructure	Prioritise certified products / materials, i.e.: - EPDs - BES6001 - FSC - PEFC - CARES - ISO14001 Report on percentage materials with EPDs. Prioritise locally sourced materials where possible. Prioritised materials that can be reused at end of life.
Shell/Skin	Report on percentage materials with EPDs. Prioritise certified products / materials i.e.: - EPDs - BES6001 - FSC

	- PEFC - CARES - ISO14001 Recycled content of Concrete and Brickwork to be maximised as part of reducing Whole Life Carbon. Concrete GGBS content to be optimised.
Services	Report on percentage materials with EPDs. Maximise recycling opportunities of services, pipes and cables.
Space	Prioritise certified products /materials, i.e.: - EPDs - BES6001 - FSC - PEFC - CARES - ISO14001
Stuff	TBC
Construction Stuff	Create sustainable procurement plan and review with Contractor prior to commencement. To be reviewed with contractor during preconstruction supply chain engagement.

Summary	Sustainable procurement plan to be established across the development. Materials to be responsibly sourced, and locally sourced where possible. Structural elements to have high recycled content or cement or replacement levels.
Challenges	Potential cost premium. Higher recycled content targets may limit supply chain. Structural constraints for higher GGBS/Fly Ash content.
Counter Actions +Who + When	Ensure structural design is optimised (Structural engineer). Preconstruction supply chain engagement.
Plan to prove and quality	Report on percentage materials with Environmental Product Declarations (EPDs).
Principle 2: Design to eliminate waste (and for ease of maintenance)	
Designing for reusability / recoverability / longevity / adaptability / flexibility	
Site	-
Sub-structure	-
Superstructure	Reducing the impact of concrete through GGBS replacement or substitutes helps in creating a more durable structure.Prioritizing materials that can be reused at the end of their life cycle ensures that the building components can have a second life, thus increasing longevity.

Shell/Skin	The following aspects have been considered: - Modular assembly - Off-site fabrication - Disassembly strategy - Standardised components Elements which are known to require replacement within the life of the building to be removable without undue waste or damage.
Services	MEP plant can be accessed and maintained from basement level. Elements which are known to require replacement within the life of the building to be removable without undue waste or damage.
Space	Design flexible commercial spaces with no excessive finishes. Adequate space for appropriate operational waste storage.
Stuff	Minimise the amount of appliances and furnishings, to enable new occupants the fit out.
Construction Stuff	Sustainable Procurement Plan to be developed and reviewed with contractor.
Summary	Design spaces for flexibility whilst enabling access to all elements that will need to be reused/replaced.
Challenges	Designing for longevity can be a compromise with recoverability.

Counter Actions +Who + When	Structural engineer, architect, contractor inputs during design finalisation and pre-construction contractor onboarding.
Plan to prove and quality	Construction and operational site waste management plan/strategy document.
Designing out construction demolition, excavation, industrial and municipal waste arising	
Site	Aim for net-zero import/export of soil to avoid excavation waste.
Sub-structure	Site generally flat so minimal earth movements required.
Superstructure	The following have been considered as methods of reducing construction waste: - Modular construction - Off-site fabrication - DfMA approaches
Shell/Skin	The following have been considered as methods of reducing construction waste: - Modular construction - DfMA approaches - Off-site fabrication
Services	Consider supplier take back schemes.

Space	The following have been considered: - Minimising Packaging - Supplier take-back schemes - Provision of suitable construction and operational waste storage.
Stuff	Minimise provision of stuff prior to occupation.
Construction Stuff	Accurately forecasting the amount of materials needed, using larger pack sizes to reduce the amount of packaging per unit and by using cardboard packaging instead of plastic where possible.
Summary	Designing out waste through modular design, offsite fabrication and DFMA approaches. Site Waste Management Plan (SWMP) to be developed in order to identify all opportunities for waste reduction.
Challenges	Supplier takeback schemes still an immature market for certain materials in the UK.
Counter Actions +Who + When	Site Waste Management Plan (SWMP) prepared by the contractor, identifying the types and quantities of waste produced during every stage of the project, as well as opportunities to reduce, reuse and recycle construction process waste.
Plan to prove and quality	Review procurement plan with contractor during preconstruction supply chain engagement.
Principle 3: Manage waste sustainably and at the highest value	

Excavation waste (how waste from excavation will be managed)	
Site	Aim for net-zero import/export of soil to avoid excavation waste.
Sub-structure	-
Superstructure	-
Shell/Skin	-
Services	-
Space	-
Stuff	-
Construction Stuff	-
Summary	Excavated waste to be reused on site where possible.
Challenges	New basement level will increase excavation soil quantities and consequently it may be challenging finding applicable uses for excavated waste.

Counter Actions +Who + When	Cut and Fill report to be completed.
Plan to prove and quality	-
Construction waste (how waste arising from construction of the layers will be reused or recycled)	
Site	Aim to achieve 95% diversion from landfill.
Sub-structure	Aim to achieve 95% diversion from landfill.
Superstructure	Aim to achieve 95% diversion from landfill.
Shell/Skin	Aim to achieve 95% diversion from landfill.
Services	Aim to achieve 95% diversion from landfill.
Space	Aim to achieve 95% diversion from landfill.
Stuff	Guidance and targets to be included in fit-out guidance to be drafted.
Construction Stuff	Review with contractor during pre-construction, supply chain engagement.
Summary	Overarching project targets of 95% diversion from landfill of non-hazardous construction waste.

Challenges	Dealing with the most challenging waste streams commonly sent to landfill.
Counter Actions +Who + When	Site Waste Management Plan (SWMP) prepared by the contractor, identifying the types and quantities of waste produced during every stage of the project, as well as opportunities to reduce, reuse and recycle construction process waste.
Plan to prove and quality	Final site waste management plan data.
Municipal and Industrial waste (how the design will support operational waste management)	
Site	Refuse storage planned in conjunction with site waste management strategy.
Sub-structure	Suitable refuse storage provided to enable segregation and storage of waste.
Superstructure	-
Shell/Skin	-
Services	-
Space	-
Stuff	Provide space for segregation of recyclables and bulk items to allow for collection for recycling.
Construction Stuff	-

Summary	Appropriate refuse storage to enable recycling and best practise waste management.
Challenges	Limitations in segregated waste collected by the local authority.
Counter Actions +Who + When	-
Plan to prove and quality	-

Appendix D Bill of Materials Template

The Bill of Materials contains an estimate of the quantity of materials used in each 'layer' of the building (kg), the material intensity (kg/m2 GIA) and set targets for the minimum amount of recycled content to be used (% by value). This includes:

Building weight calculation (load take-down) to be used in calculating material intensity.

Reused or recycled content calculations, including supporting details such as Environmental Product Declarations (EPDs), specification documents, etc.

Appendix E Recycling and Waste Reporting Form

This section reports the estimates of total amount of waste and material generated during excavation, demolition, and management methods construction. Where possible, information has been extracted from the Site Waste Management Plan and Operational Waste Management Plan.

For the post-construction stage CES, the Principal Contractor will update the form with actual monitored figures.

The following evidence is required to complete the Waste Metrics Form:

Cut and fill calculations.

Reused or recycled content calculations, including supporting details such as Environmental Product Declarations, specification documents, etc.

Relevant extracts from the Site Waste / Resource Management Plan.

Relevant extracts from the Municipal / Operational Waste Management Plan.

In addition, when it is intended to send waste to landfill applicants **must** provide written confirmation the receiving landfill has the capacity to deal with waste over the lifetime of the development. Where possible, confirmation should be provided for all waste handling facilities, in or outside London[8]. This should be supported by the calculations / estimates of waste arising. Figures must align with the Waste Metrics form.

[10] The UK Department for Environment, Food & Rural Affairs Waste Duty of Care Code of Practice (2018) states: 'You have a responsibility to take all reasonable steps to ensure that when you transfer waste to another waste holder that the waste is managed correctly throughout its complete journey to disposal or recovery.'

Category	Total Estimate	Of which...				Source of Information
	t/m ^{2} Gross Internal Area (GIA)	% Reused or recycled onsite	% Reused or recycled offsite	% Not reused or recycled 5% max		
				% To landfill	% To other management (e.g. incineration)	
Excavation waste	TBC	100	0	0		Project commitment to Net Zero import/export of soil
Demolition Waste	0.14	Up to 55%	Up to 40%	5%		Site Waste Management Plan
Construction Waste	0.05	0	Up to 96%	4%		Site Waste Management Plan
	t/annum			% Not reused or recycled		

Category	Total Estimate	Of which…				Source of Information
		% Reused on or off site	% Recycled or composted on or off site	% To landfill	% To other management (e.g. incineration)	
Municipal waste	519	TBC	65%	Max. 35% and **no** recyclable or compostable waste		OWMP
Industrial waste (if applicable)	N/A	N/A	N/A	Max. 35% and **no** recyclable or compostable waste		N/A

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 See Table below, which outlines detail of the recycled material to be found within some of the building materials.

Component	Quantity	Material rate (excluding labour)	Material value	Recycled content by mass	Recycled content by value

Concrete	15, 990 m3	£100/m3	£1,599,000	50%	£799,500
Steel	2,302 tonnes	£1000/tonne	£2,302,000	40 %	£920,800
Blockwork	194 m2	£30/m2	£5820	50%	£2910
Concrete Paving	441 m2	£40/m2	£17,640	50%	£8820
Plasterboard	10,023 m2	£5/m2	£50115	95 %	£25057.5
Insulation	32.6 m2	£10/m2	£326	50 %	£163
Engineered fill	2.5 tonnes	£20/tonne	£4500	100%	£4500

Other			£977,035.356		
Total (£)			£4,956,436.356		£1,761,750.5
Total (%)					35%

Appendix F Policy and Regulations

This section highlights the policies and regulations which are relevant to the Proposed Development.

Legislation: Climate Change Act 2008[9]

The UK government amended the **Climate Change Act 2008** in June 2019 to target net zero carbon emissions by 2050. The target requires the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. Additionally, any emissions must be balanced by schemes to offset an equivalent amount of greenhouse gases from the atmosphere.

National Policy: (NPPF)[10]

The revised **NPPF** sets out the Government's planning policies for England and provides a framework for achieving sustainable development. This can be summarised as "*meeting the needs of the present without compromising the ability of future generations to meet their own needs*" and supports sustainable development.

Regional Policy: The London Plan March 2021Error! Bookmark not defined.

The London Plan defines a Circular Economy as "One where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste"[11]**Error! Bookmark not defined.**.

Policy SI 7 Reducing Waste and supporting the circular economy states

"A - 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:

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.

encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products.

ensure that there is zero biodegradable or recyclable waste to landfill by 2026.

meet or exceed the municipal waste recycling target of 65 per cent by 2030.

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[9] Climate Change Act 2008

[10] Ministry of Housing, Communities & Local Government – National Planning Policy Framework February 2019

[11] The London Plan 2021 Policy SI7 'Reducing waste and supporting the Circular Economy'

meet or exceed the targets for each of the following waste and material streams:

a) construction and demolition – 95 per cent reuse/recycling/recovery

b) excavation – 95 per cent beneficial use.

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.

Wandsworth Local Plan 2023-2038 (July 2023)[12]

The Wandsworth local Plan states under LP13 Circular Economy, Recycling and Waste Management:

"A. Developers will be expected to reuse, recycle, or recover 95% of construction and demolition waste and find beneficial uses for 95% of excavation waste."

RICS Whole Life Carbon Assessment for the Built Environment[13]

The RICS professional statement underpins the British Standard EN 15978, "providing a consistent whole life carbon assessment implementation plan and reporting structure for built projects and promoting the reliability of whole life carbon assessments by acting as a solid reference for the industry. This professional statement is intended to standardise whole life carbon assessment and enhance consistency in outputs, by:

Providing specific practical guidance for the interpretation and implementation of the methodology in EN 15978 in carbon calculations. This is to achieve coherent and comparable results that can be used to benchmark the whole life carbon performance of built assets. The specific objectives of this professional statement are to:

- *provide a consistent and transparent whole life carbon assessment implementation plan and reporting structure for built projects in line with EN 15978*
- *enable coherence in the outputs of whole life carbon assessments to improve the comparability and usability of results*
- *make whole life carbon assessments more 'mainstream' by enhancing their accessibility and therefore encourage greater engagement and uptake by the built environment sector*

[12] https://www.wandsworth.gov.uk/media/large/adopted_local_plan.pdf

[13] Royal Institute of Chartered Surveyors (RICS) Whole Life Carbon Assessment for the Built Environment, 1st edition whole-life-carbon-assessment-for-the-built-environment-1st-edition-rics.pdf

- *increase the reliability of whole life carbon assessment by providing a solid source of reference for the industry*
- *promote long-term thinking past project practical completion, concerning the maintenance, durability and adaptability of building components and the project as a whole; and*
- *promote circular economic principles by encouraging future repurposing of building components, as well as of the project as a whole, through quantify."*

As a minimum, RICS requires the WLCA to be carried out before the commencement of the technical design (RIBA Stage 4 or equivalent) of the project".

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