



HODKINSON



**Circular Economy
Statement**

Homes for Lambeth

Former Coral Day Nursery, Wootton Street

Draft

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We are able to advise at all stages of projects from planning applications to handover.

Our emphasis is to provide innovative and cost-effective solutions that respond to increasing demands for quality and construction efficiency.

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Executive Summary

The purpose of this Circular Economy Statement is to demonstrate that the proposed development at Former Coral Day Nursery, Wootton Street by Homes for Lambeth in the London Borough of Lambeth has considered the following circular economy principles:

- > Conserve resources and source ethically;
- > Design to eliminate waste (and for ease of maintenance);
- > Manage waste sustainably and at the highest value.

The targets below have been set to ensure that changes are made at a strategic level in order to ensure that the core principles of Circular Economy are adopted:

- > A minimum of 95% of non-hazardous construction waste is to be recycled or reused;
- > Monitor energy, water and waste during construction;
- > Materials with recycled and reused content will be prioritise, where feasible;
- > 100% of timber used on site, including timber used in the construction phase, will be sourced from sustainable forestry sources (e.g. PEFC and FSC);
- > Aim to specify at least 20 products with Environmental Product Declarations;
- > The non-residential unit will be designed with an open plan layout to enable easy future adaptability for different use types and residential units will be designed to meet long-term resident needs, be robust, durable, and resilient to climate change;
- > The site will endeavour to meet the Greater London Authority target of 95% reuse/recycling/recovery during any demolition works;
- > The non-residential and residential units will be provided with access to a refuse store, supporting the separate collection of dry recyclables (mixed plastics, metals, glass, card and paper);
- > All residential apartments are to be provided with adequate space for both refuse and recycling, including food waste.
- > All residential apartments will be provided with a user guide to promote the principles of circular economy.

Further different strategic approaches that can be adopted and how they could be incorporated have also been outlined in the report and will support a circular economy approach for the development.

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1. INTRODUCTION

- 1.1** This detailed Circular Economy Statement has been prepared by Hodkinson Consultancy, a specialist energy and environmental consultancy for planning and development, appointed by Homes for Lambeth.
- 1.2** The purpose of this statement is to demonstrate that the proposed development at Former Coral Day Nursery, Wootton Street in the London Borough of Lambeth has considered the following circular economy principles to:
- > Conserve resources and source ethically;
 - > Design to eliminate waste (and for ease of maintenance);
 - > Manage waste sustainably and at the highest value.
- 1.3** The above has been undertaken throughout RIBA stages 2/3 and this statement will be included within the full planning application that is being submitted to the London Borough of Lambeth.
- 1.4** The aim of circular economy is to retain the value of materials and resources indefinitely, with no residual waste at all. This is possible but will require a fundamental change in the way that buildings are designed, built, operated, and deconstructed.

2. POLICY AND GUIDANCE

- 2.1** This chapter highlights the policies and regulations which are relevant to the proposed development at Former Coral Day Nursery, Wootton Street.

Adopted New London Plan (2021)

- 2.2** The recently adopted New London Plan sets out an integrated economic, environmental, transport and social framework for the development of London. The following policies are considered relevant to the proposed development and this Statement:

Policy SI7 Reducing Waste and supporting the Circular Economy.

- A. Waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by:

1. Promoting 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. Encouraging waste minimisation and waste avoidance through the reuse of materials and using fewer resources in the production and distribution of products;
 3. Designing developments with adequate and easily accessible storage space that supports the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass, and food).
- B. Referable applications should promote circular economy outcomes and aim to be net zero-waste. 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 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 to support recycling and re-use;
 5. How much waste the proposal is expected to generate, and how and where the waste will be handled;
 6. How performance will be monitored and reported.

Local Policy: London Borough of Lambeth

Local Plan (2015)

- 2.3** The London Borough of Lambeth's Local Plan document was adopted in September 2015. The following policies are considered relevant to this Statement:
- > **Policy EN4: Sustainable design and construction** – Proposals should demonstrate in a supporting statement that sustainable design standards are integral to the design, construction and operation of the development.
 - > **Policy EN7: Sustainable Waste Management** - Major development sites should recycle construction, excavation and demolition (CED) waste on-site wherever practicable. For all development, CED waste should be minimised through reuse and recycling within London as far

as possible. Disposal of CED waste in landfill should only take place in exceptional circumstances, where it has been demonstrated that alternative, more sustainable fates are not feasible.

- > **Policy Q12: Refuse/recycling storage** - Adequate refuse and recycling storage should be provided for all development.

Draft Revised Local Plan (2020)

2.4 Consultation on the Draft Revised Lambeth Local Plan and Proposed Changes to the Policies Map took place between October and December 2018. The revised local plan has been the subject of an ongoing sustainability appraisal during its preparation, which includes assessment of equalities and health and wellbeing impacts and was published for consultation at each stage of the plan preparation process. The proposed submission version was published in January 2020 and the local plan is now at examination. The following policy is considered relevant to this Statement:

- > **Policy EN7: Sustainable waste management** – All developments will be expected to recycle construction, demolition and excavation waste on-site wherever practicable. For all development, 95% of construction and demolition waste should be reused, recycled or recovered and 95% of excavation waste should be put to beneficial use. Disposal of waste in landfill should only take place where it has been demonstrated that alternative, more sustainable fates are not feasible. Circular economy principles will be supported.

Guidance Documents

2.5 Preliminary guidance has been released by the Greater London Authority (GLA) “*Circular Economy Statement Guidance Pre-Consultation Draft*”, issued in April 2020. It outlines guidance on Circular Economy statements that should accompany all referable planning applications in line with the recently published new London Plan Policy SI 7.

2.6 The guidance notes that Circular Economy Statements should be submitted at three stages:

- > **Outline/pre-application (RIBA Stage 1/2)** - Draft Circular Economy Statement with a focus on the strategic approach;
- > **Full application (RIBA Stage 2/3)** - Detailed Circular Economy Statement outlining how the principles will be addressed through detailed design.
- > **Post-completion stages (RIBA Stage 5/6)** - Post-Planning Updates should outline the progress in meeting the targets and commitment can be provided during the construction process.

2.7 As the proposed Former Coral Day Nursery, Wootton Street is already at RIBA Stage 2/3 with a full application being submitted, a detailed Circular Economy Statement is required.

2.8 In addition to the above, the following guidance is available in order to apply Circular Economy principles to projects:

- > 'BS 8001:2017 – Framework for Implementing the Principles of the Circular Economy' by British Standards Institution, May 2017.
- > 'Designing for a Circularity - Primer' by GLA, October 2019.
- > 'Circular Economy Guidance for Construction Clients' by UK Green Building Council (UKGBC), April 2019.

3. DEVELOPMENT OVERVIEW

Site Location

- 3.1 The proposed development site at the site currently occupied by the former Coral Day Nursery, Wootton Street in the London Borough of Lambeth is bound by Wootton Street to the north, Great Street to the east, Ethelm Street to the south and Windmill Walk House to the west. The site location is shown in Figure 1 below.

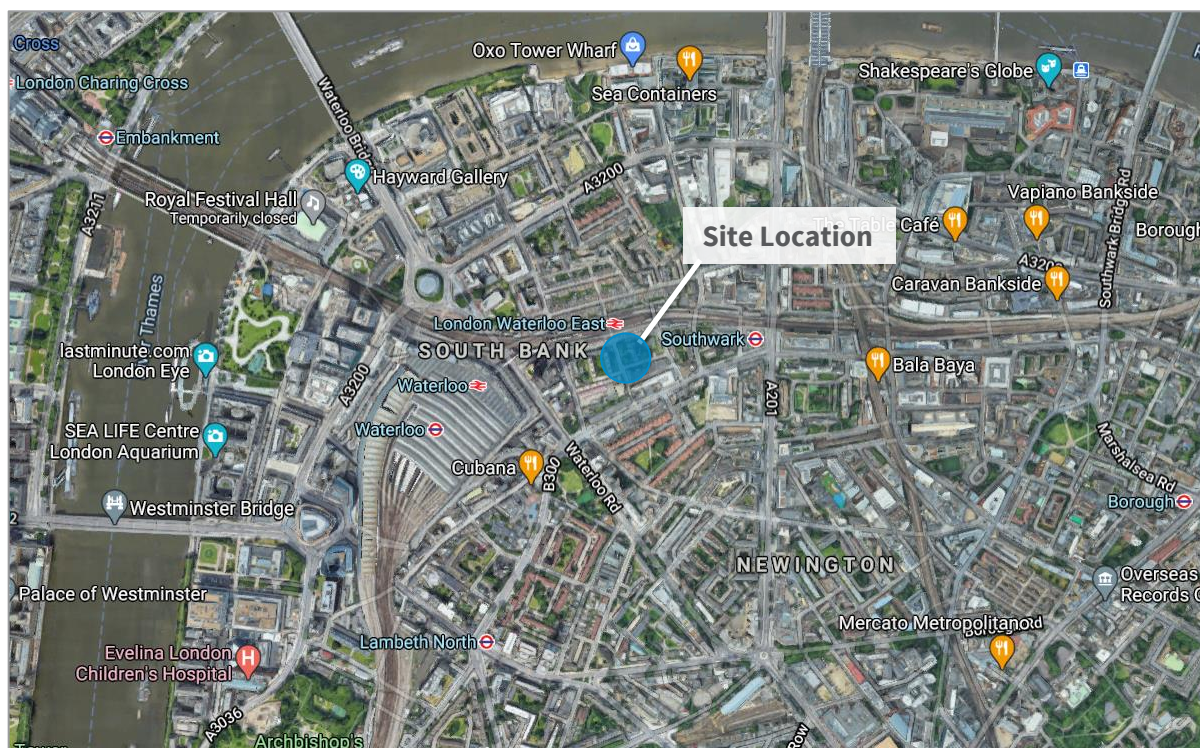


Figure 1: Site Location – Map data © 2020 Google

- 3.2 The site currently comprises of a single storey block which has previously been a special education needs school (Use Class D1), a play area and a car park are also located within the site boundary.

Proposed Development

- 3.3 The proposed development is described as follows:

“Demolition and clearance of existing structures and redevelopment comprising construction of a part 5/8/10 storey mixed use building comprising replacement community floorspace on ground floor, 36 no. residential units (Class C3) above with associated residents’ amenities, cycle parking, car parking and public realm enhancement.”

3.4 Figure 2 below illustrates the proposed site layout.

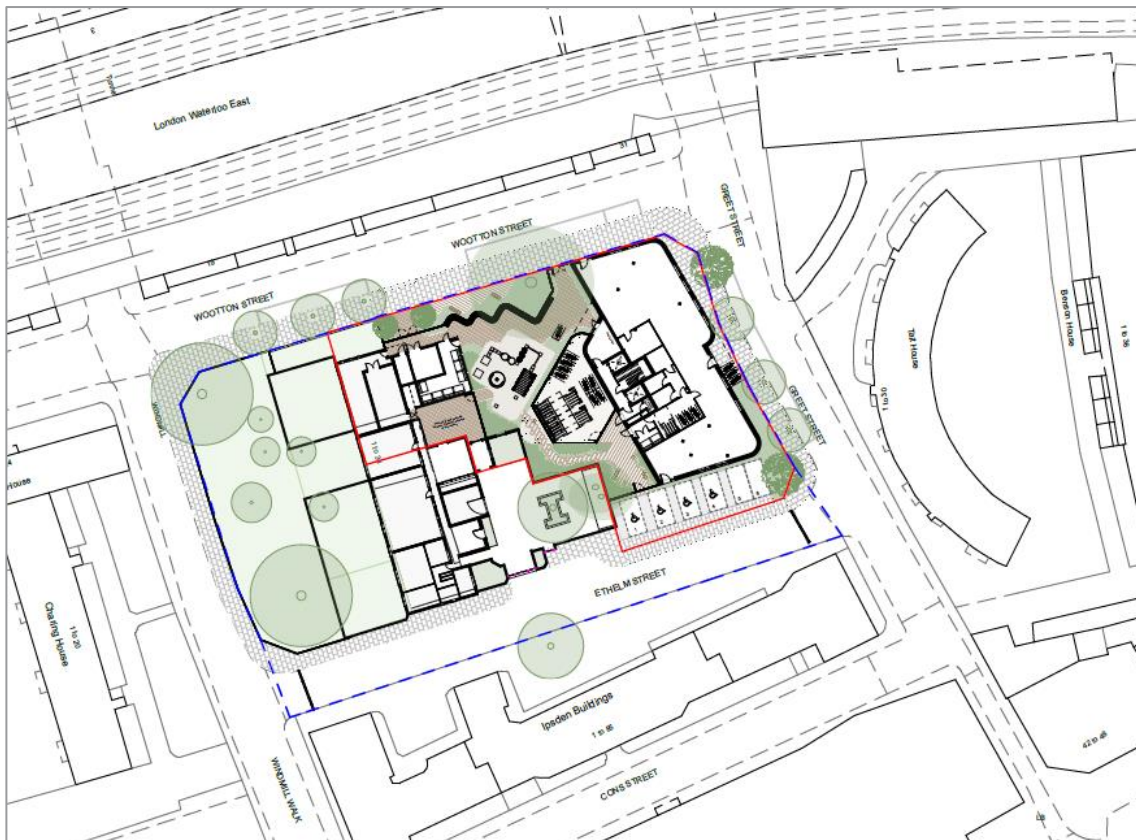


Figure 2: Proposed Site Layout – Stockwool Architects (December 2020)

3.5 The Gross Internal Floor Area (GIA) must be provided, as per the GLA guidance. This is noted in Table 1, below.

Table 1: Proposed Development GIA Values

Use Type	Area (m ²)
Non-Residential	380
Residential	2,416
Total	2,796

BREEAM

- 3.6** In accordance with local planning policy EN5, the proposed community space of the new development is to target BREEAM ‘Excellent’ under the BREEAM New Construction 2018 scheme.
- 3.7** BREEAM is an assessment method to ensure best environmental practice is incorporated in the planning, design, construction and operation of commercial buildings and the wider built environment. A full BREEAM Pre-Assessment has been presented in Appendix A of the stand-alone Sustainability Statement by Hodkinson Consultancy.
- 3.8** Credits that promote the circular economy principles and will therefore be targeted as part of the BREEAM strategy include:
- > **Responsible sourcing** - To encourage the selection of construction products where sustainable development principles have been followed across the supply chain, including when extracting, processing, and manufacturing materials and parts.
 - > **Material efficiency** - To aid the avoidance of unnecessary materials arising from over specification without compromising structural stability, durability, or the service life of the building.
 - > **Functional adaptability** - To avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.
 - > **Durability** - To reduce the need for maintenance, repairs and frequent replacement of materials resulting from damage to exposed elements of the building and landscape.
 - > **Environmental impact of materials** - To reduce the effect construction products have on the environment by recognising and encouraging the selection of products with a low environmental impact, including embodied carbon over the life cycle of the building and those products with Environmental Product Declarations (EPD).
 - > **Recyclable waste** - To provide occupiers with suitable options for storing and disposing of recyclable waste and reducing the amount of waste that goes to landfill by making it more convenient to store or recycling in the home before it is collected.
 - > **Site waste management** - To promote resource efficiency and reduce as far as possible the effect of construction on the environment by managing construction waste effectively to reduce the total amount of waste produced, and by looking at alternatives to landfill for disposing waste.

Method Statement

- 3.9** This Circular Economy Statement was produced in line with the recently adopted new London plan policy SI 7, following the guidance outlined in “*Circular Economy Statement Guidance Pre-Consultation Draft*” document, published in April 2020.
- 3.10** Due to the timing of the issuing of the guidance and the Intend to Publish London plan, no-preplanning draft Circular Economy Statement (stage 1) was submitted. Instead, a detailed Circular Economy Statement was produced (stage 2/3).
- 3.11** Liaison with key stakeholders were undertaken focusing on material efficiencies and circular economy. Subsequent meetings and workshops will be held as the design progresses to determine how the circular economy aspirations can be further developed. An overview of this has been provided in Appendix A.

Circular Economy Aspirations

- 3.12** Circular economy considerations have formed a key part of the Sustainability Strategy for the proposed development at the former Coral Day Nursery, Wootton Street. It is recognised that in order to implement circular economy principles most effectively, it is helpful to explore strategic opportunities as early in the development process as possible. Considerations around resource efficiency and responsible procurement have been considered within the sustainability strategy from the early stages.
- 3.13** Homes for Lambeth are a housing company, wholly owned by Lambeth Council, strive to building strong and sustainable communities, delivering high-quality homes and providing homes at genuinely affordable rents to tackle the housing crisis. Their aim is to create homes that will stand the test of time and build communities that will thrive in the future and are committed to making significant, long term contributions to the environmental, social, and economic fabric of the communities in which it works.

4. CIRCULAR ECONOMY PRINCIPLES

- 4.1** A circular economy is defined in the recently adopted new London Plan Policy *SI7 ‘Reducing Waste and Supporting the 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.
- 4.2** In contrast to a linear economy (take, make, dispose), a circular economy keeps products and materials circulating through the system at their highest value for as long as possible, through re-use, recycling, refurbishment, and remanufacturing.

4.3 The end goal is to retain the value of materials and resources indefinitely, with no residual waste at all. This is possible but will require a fundamental change in the way that buildings are designed, built, operated, and deconstructed.

4.4 Applying circular economy thinking to the built environment is complex, with many overlapping issues and trade-offs to consider. However, there are some core guiding principles that promote a regenerative and restorative whole systems approach that should be applied on every project. These are as follows:

1. Conserve resources and source ethically;

- > Minimise the quantities of materials used
- > Minimise the quantities of other resources used
- > Specify and source materials and other resources responsibly and sustainably

2. 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

3. Manage waste sustainably and at the highest value;

- > Manage demolition waste
- > Manage excavation waste
- > Manage construction waste
- > Manage municipal waste

4.5 Adoption of these three core principles on developments typically reduce the amount of raw and new materials required. Alongside this, a reduction in vehicle movements, air pollution, noise and greenhouse gas emissions would also be beneficial. There are also benefits from cost savings through the reduction in materials required.

5. APPROACH TO CIRCULAR ECONOMY

Strategic Design Making

- 5.1** Homes for Lambeth will aim to make changes at a strategic level in order to ensure that the core principles of circular economy are adopted where feasible. Identifying and applying these approaches during concept design will enable them to be incorporated as part of the development brief.
- 5.2** Appendix A2 has been provided as both a procedural tool to help guide workshops and discussions and as a practical tool to highlight key Circular Economy commitments. A rationale of the strategic approach is summarised in Table 2 below:

Table 2: Strategic Approach

	Steering Approach	Target	Supporting Analysis / Surveys / Audits
Circular economy approach for the new development	Minimise construction waste	A waste figure lower than 11.1 tonnes of waste per 100m ² GIFA will be targeted for construction waste.	Site Waste Management Plan
		95% of non-hazardous construction and demolition waste is to be reused or recycled.	BREEAM Waste 01 – <i>Construction Waste Management</i>
		Monitor energy, water and waste during construction.	BREEAM Management 03 – <i>construction site impacts</i> Site Waste Management Plan
	Select materials with a high recycled content	Prioritise use of materials with low embodied carbon and materials with recycled content, where feasible. At least 20% of materials should include recycled content.	In line with industry recommendations and GLA guidance.
		Use of recycled and/or secondary aggregates where feasible	-

Steering Approach	Target	Supporting Analysis / Surveys / Audits
	A target of at least 20% of the building is to be designed constructed via off site manufacturer.	-
Design with adaptability and longevity in mind	<p>Non-residential unit will be designed with an open plan layout to enable easy future adaptability for different use types.</p> <p>Residential units will be designed to meet long-term needs, be robust, durable and resilient to climate change.</p> <p>The scheme has been designed to ensure overheating risk is reduced to acceptable levels in accordance with CIBSE TM59:2017 requirements.</p>	<p>Design & Access Statement</p> <p>BREEAM Waste 06 - <i>Disassembly and Adaptability</i></p> <p>BREEAM Waste 05 – <i>Adaptation to Climate Change</i></p>
Source materials sustainably	100% of timber used on site, including timber used in the construction phase will be sourced from sustainable forestry sources (e.g. PEFC and FSC).	Principal contractor's Sustainable Procurement Policy.
	Aim to specify at least 20 products with Environmental Product Declarations.	BREEAM Materials 02 – <i>Specification of products with a recognised environmental product declaration (EPD)</i>
Minimise operational waste	<p>100% of residential and commercial units to be provided with adequate space for both recycling and refuse.</p> <p>100% of residential units to be provided with both internal and external food waste facilities.</p>	<p>Design & Access Statement;</p> <p>Transport Statement;</p> <p>Building/Home user guides;</p> <p>Tenancy and Operator Agreements.</p>
	All residential units and non-residential space to be provided with a user guide that outlines the benefits of a circular economy.	Design & Access Statement

Steering Approach		Target	Supporting Analysis / Surveys / Audits
Circular economy approach for municipal waste during operation	Minimise operational waste	Waste targets as follows: <ul style="list-style-type: none"> - 75% recycling rates for non-residential uses by 2030; - 50% recycling rates for residential apartments will be achieved by 2030; - Municipal waste recycling target of 65% by 2030; Zero biodegradable or recyclable waste to landfill by 2026.	Building / Home user guides; Tenancy and Operator Agreements.
		100% of residential and commercial units to be provided with adequate space for both recycling and refuse. 100% of residential units to be provided with both internal and external food waste facilities.	Design & Access Statement; Transport Statement; Technical & non-technical Building User Guides and Home user guides; Tenancy and Operator Agreements;
		All residential units and non-residential space to be provided with a user guide that outlines the benefits of a circular economy.	BREEAM Management 04 - <i>Commissioning and handover</i> ; BREEAM Management 05 - <i>Aftercare</i> ;
		Installation of pulsed output water and energy meters and submeters to allow for monitoring of operation usage.	BREEAM Water 02 – Water Monitoring BREEAM Energy 02 – Energy Monitoring

- 5.8** The targets above are not exhaustive but provide an overview of circular economy measures that can have targets associated with them. Further different strategic approaches that can be adopted and how they could be incorporated are listed below.

Conserve Resources

Sustainable Procurement

- 5.9** A Sustainable Procurement Plan will be produced for the proposed development, in accordance with BREEAM Materials 03 requirements. The responsible sourcing of materials will be a key consideration in the selection of suppliers and a sustainable procurement plan will be produced for the development prior to construction. The sustainable procurement plan will ensure that new building materials are selected to minimise environmental impact and have low embodied energy – from manufacture, transportation, and operational stages, through to eventual demolition and disposal.
- 5.10** Materials from suppliers who participate in responsible sourcing schemes such as the BRE BES 6001:2008 Responsible Sourcing Standard will be prioritised. In addition, products with a recognised environmental product declaration (EPD) will be specified where possible.
- 5.11** All timber specified will be legally harvested and traded timber and should be sourced from schemes supported by the Central Point of Expertise for Timber Procurement such as Forest Stewardship Council (FSC) accreditation – which ensures that the harvest of timber and non-timber products maintains the forest’s ecology and its long-term viability.

Minimised Material Use

- 5.12** Adopting a design approach that focuses on material resource efficiency so that less material is used in the design (i.e. lean design), and / or less waste is produced in the construction process, without compromising the design concept.
- 5.13** For waste reduction, minimisation of excavation, simplification and standardisation of materials and components of choice, and dimensional coordination have been considered.
- 5.14** The design evolution of the scheme has changed from a rectangular footprint to a triangular floor plate to retain existing trees and the massing of the proposed building was reduced from 5, 9 and 13 storeys to a part 5, 8 and 10 storey, thus conserving resources. This has been illustrated in Figure 3 overleaf.

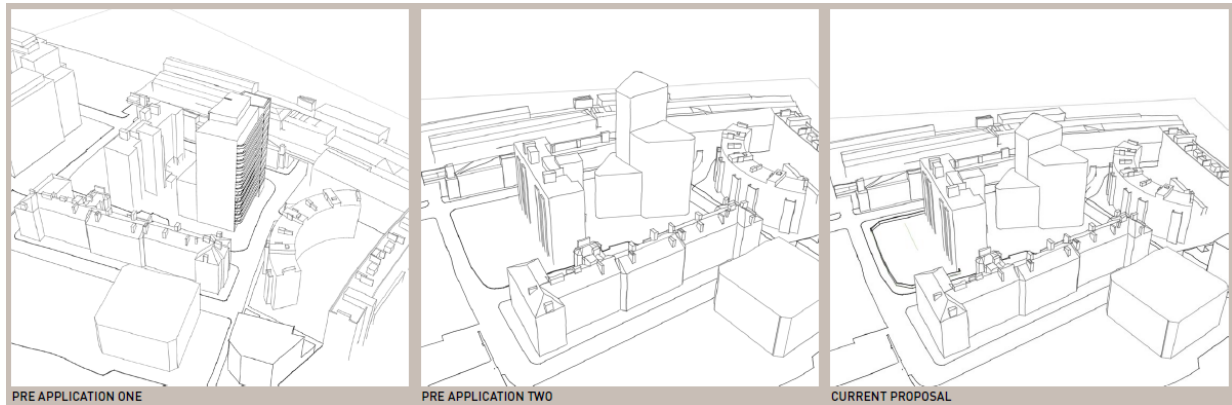


Figure 3: Scheme evolution since initial pre-app consultation – Stockwool (Dec 2020)

5.15 The ground floor provides a flexible, open plan community use. Units on floors 1 to 4; 5 to 7; and 8 to 9, will be stacked with kitchens/bathrooms coordinated to minimise the amount of mechanical and electrical pipework required and ease maintenance and replacement of elements. This is illustrated in Figure 4 below.

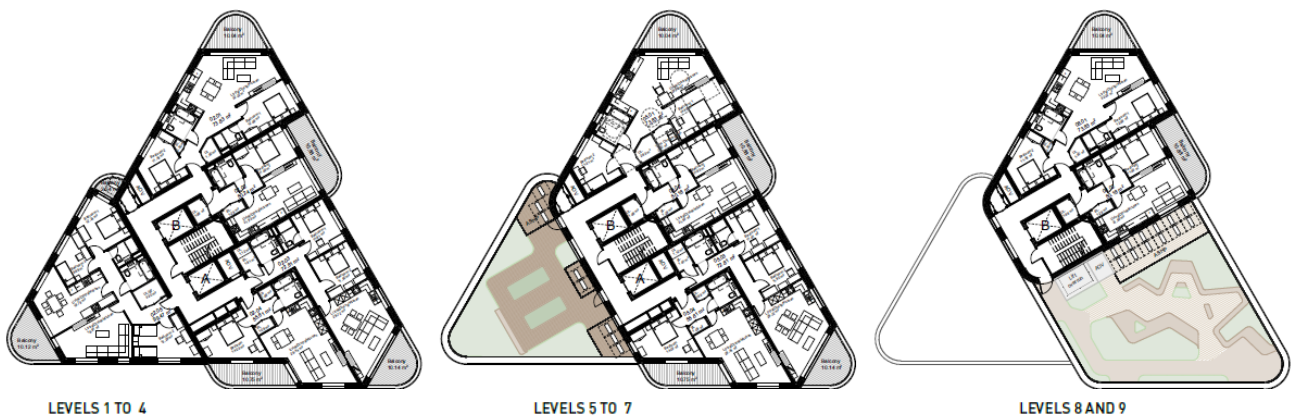


Figure 4: Proposed floor layouts – Stockwool (Dec 2020)

5.16 Floors 1 to 4 of the triangle footprint will be wrapped around a central core to maximise design efficiency with regards to access, circulation, apartment/unit sizes, ensuring flexible floorplates.

5.17 The development has taken steps to ensure other resource use will be kept to a minimum, such as:

- > The proposed development will be located on a site that has previously been developed which minimises the use of any virgin land;
- > All new dwellings will target a minimum internal water efficiency standard of 105 litres/person/day in accordance with the recently adopted New London Plan Policy SI5 and the optional tighter Building Regulations Approved Document G requirement (110 litres/person/day).

5.18 The design team will regularly review material efficiency strategies to ensure a lean design that reduces material quantities without inhibiting future flexibility.

Whole Life Carbon

- 5.19** Engagement with the design team has been undertaken to address the end-of-life strategy for the material. Initial building material formation has been made available to understand future life. This information has been used to initiate a Whole Life Cycle Carbon Emissions (WLCCE) Assessment.
- 5.20** Initial results are positive and early recommendations have been included in a standalone report.

Eliminating Waste

Designing for Longevity

- 5.21** The proposed development will seek to design with longevity in mind. Examples include protecting materials from degradation due to environmental conditions, adopting passive design strategies to provide resilience, and sizing systems to cope with future climate scenarios.
- 5.22** Appropriate durability measures will be incorporated in vulnerable parts of the internal building so as to minimise the frequency of replacing materials and therefore optimising material use. These measures are likely to include:
- > Hard-wearing floor finishes;
 - > Protection rails to corridor walls;
 - > Stair treads;
 - > Kick plates on doors; and,
 - > Bollards and kerbs in servicing/vehicle areas.
- 5.23** The primary material in the proposed block is a textured buff brick to support a durable, hard-wearing and low-maintenance façade.
- 5.24** The proposals for Wootton Street will deliver a sustainable design which reduces energy demand with spatial allowances for required insulation incorporated into the design. Energy will be supplied via individual Air Source Heat Pumps (ASHPs). PV panels will be maximised on the roof and low-energy lighting throughout to all residential units.
- 5.25** Minimising the risk of summer overheating and high uncontrollable temperatures is important so as to ensure that homes are comfortable for their occupants and remain comfortable in the future. The scheme has been designed to ensure overheating risk is reduced to acceptable levels in accordance with CIBSE TM59:2017 requirements.

Design for offsite construction

- 5.26** The benefits of offsite factory production in the construction industry are well documented and include the potential to considerably reduce waste especially when factory manufactured elements and components are used extensively.
- 5.27** Although there are limited opportunities for building of this scale for off-site construction and/or modular elements, where practicable and feasible, offsite construction and manufacturing will be considered for the proposed development at Wootton Street. Examples will include concrete bands and glazing for the building envelope.

Designing for Assembly, Disassembly and Recoverability

- 5.28** The proposed development at Wootton Street will consider designing with disassembly in mind as well as maintenance and replacement of elements. Where feasible, assets will seek to be designed to allow for easy assembly and reconfiguration, for alternative future uses.
- 5.29** Materials, where possible, will have the option to be taken apart through mechanical and reversible fixings to allow for future reuse. Permanent fixing of products, such as by glue and cement mortar, will be avoided where feasible, to enable end of life deconstruction and salvage of building elements.
- 5.30** A materials inventory will be created for the entire building that includes a detailed breakdown of all building elements that sets out the constituents of each product and material, the structural loadings, and the ability for each material to be reused and/or recycled.
- 5.31** A brief end-of-life strategy will be developed at detailed design to demonstrate how the building materials, components and products could be disassembled and reused at the end of their useful life.
- 5.32** At this stage the Bill of Materials is not yet available and will instead be provided during the post construction assessment. In accordance with GLA guidance, the Bill of Materials will include kg/m² for the proposed new development and will target a benchmark of 20% reused or recycled content, where feasible.

Designing for Adaptability or Flexibility

- 5.33** The BREEAM Wst 06 'Functional Adaptability' credit is being targeted to avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works. These changes could be required as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a Circular Economy.

- 5.34** Designing for future adaptability and flexibility has been considered in the design to ensure the built asset can cope with a diversity of scenarios, e.g. flexible planning, location of cores and generous floor to ceiling heights where appropriate.
- 5.35** As noted in paragraph 5.14, a central core design is proposed to maximise design efficiency with regards to access, circulation, apartment/unit sizes, ensuring flexible floorplates. The building could realistically accommodate multiple types of residential (hotel, student accommodation, etc.) uses in the future as an alternative use.
- 5.36** The ground floor provides an open plan, flexible community use. In addition to generous floor to ceiling heights, the unit is glazed on three sides to activate the street frontage and provide natural light and ventilation for the space. The non-residential unit could realistically accommodate multiple types of commercial (office, retail, restaurant, bar, etc.) uses in the future as an alternative use.
- 5.37** The dwellings proposed on site are flexible for residents throughout their lives. In addition to the communal garden, play area and roof terraces, private amenity balconies are provided to each apartment (except for four of the first-floor flats) offering choice and variety for residents.
- 5.38** The proposed development at Wootton Street is designed for accessibility and there is a variety of apartment sizes, catering for individuals and family living with adequate storage for buggies and wheelchairs (Part M). It is proposed that 90% of the new dwellings will be designed to meet Building Regulations Approved Document M4 Category 2 (Accessible and adaptable dwellings) and 10% will meet Part M4 Category 3 (Wheelchair user dwellings).
- 5.39** The scheme will relocate 6 existing car parking spaces and provide all with electric charging points. It is proposed 4 of the 6 spaces will be designated to wheelchair users only. Cycle storage and facilities will also be provided for building occupants.

Standardisation

- 5.40** The proposed development will consider designing and construction methods by applying, where feasible, standardised elements for materials and products that enable a reduction in construction waste and easier reuse in next life.
- 5.41** The development will aim to use standardised design formats to enable future reuse, e.g. no bespoke cutting of materials as this can make replacements difficult to obtain.
- 5.42** As noted in paragraph 5.14, a proportion of units will be stacked, and kitchens/bathrooms coordinated to minimise the amount of mechanical and electrical pipework required and ease maintenance and replacement of elements.

Material Conservation

- 5.43** A detailed pre-demolition audit will be carried out post planning, to ensure re-use of demolition material wherever possible in the construction of the new development. Investigations will be carried out to establish where possible the extent of reuse, including reuse of materials and components from other projects, and its practicality as early as possible. Throughout this process, carbon impacts will also be considered to ensure they are not compromised in material selection.
- 5.44** Options will be explored to crush and use existing material found on site for hardcore and return fill any excavated material, where possible, to limit removal of material off-site and to landfill.
- 5.45** The contractor will be required to review agreements with suppliers for recovery and disposal of their products including plasterboard offcuts, insulation offcuts and timber pallets.

Managing Waste

Site Waste Management

- 5.46** In addition to a pre-demolition audit, as noted in paragraph 5.41, a Waste Management Strategy will also be prepared to confirm the hierarchy of waste management and will be adopted in accordance with national policy requirements. All relevant contractors will be required to investigate opportunities to minimise and reduce waste generation, such as:
- > Implementation of a 'just-in-time' material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste;
 - > Attention to material quantity requirements to avoid over-ordering and generation of waste materials;
 - > Re-use of materials wherever feasible (e.g. re-use of crushed concrete from relevant demolition processes for fill crushed using an on-site concrete crusher; reuse of internal equipment and plant from existing buildings);
 - > Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme; and,
 - > Segregation of waste at source where practical; and re-use and recycling of materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or re-processing.
- 5.47** With a principal aim during demolition and construction to reduce the amount of waste generated and exported from the proposed development site, a formal and detailed Site Waste Management Plan (SWMP) will be obtained from the appointed contractor and will be adopted in accordance with

WRAP, Smart Waste or other suitable 'Waste Data Tool' methodology, in addition to national policy requirements. This will ensure, in addition to BREEAM requirements, a target benchmark is set for resource efficiency and monitor and minimise waste, as well as provide procedures for sorting, reusing and recycling construction waste into defined waste groups.

- 5.48** The 'Waste Data Tool' records the identity of the waste carrier and their registration number, a written description of the waste, the name of the disposal site and a record of the permit/ exemption for then disposal site. Updates to the Waste Data Tool will occur at least monthly to ensure the regular monitoring, measuring and reporting of non-hazardous and hazardous wastes leaving site.
- 5.49** Waste segregation will take place during construction as far as the site allows logistically to give the highest possible recycling rates. In accordance with BREEAM criteria and as part of their commitment to divert construction waste from landfill, the contractor will be required to regularly monitor and record the site's waste reduction performance. This will be compared against a target benchmark where at least 95% (by volume) of non-hazardous construction and demolition waste is to be reused or recycled. A target benchmark of 95% for potential excavation waste put to beneficial use will be also be set.
- 5.50** The location of the waste handling site that the materials will be taken to will vary dependent upon their specific make up. Waste facility sites in Belvedere, Willesden, Brixton, Enfield, Wimbledon, and Heathrow may be used amongst others as appropriate. Wherever possible, materials will be recycled and re-used either onsite, or provided for use elsewhere.
- 5.51** All relevant contractors will be required to investigate opportunities to minimise and reduce use of energy and water. The energy and water consumptions of the project will be monitored, either through sub-metering or reading utility bills, to allow comparison against best practice benchmarks and improvements made.

Operational Waste

- 5.52** Waste reduction during the operational phase is also being considered for opportunities in implementing waste mitigation measures for the potential impacts arising during the operation of the development and to ensure that such measures are consistent with both national and local waste policies and targets.

Waste Storage

- 5.53** Refuse stores with adequate space to accommodate the number of bins required, will be located within the building for both residential and non-residential waste purposes.
- 5.54** For residents, the development proposes a communal bin store in the northwest corner of the site, as shown in Figure 5. The refuse vehicles will collect the bins from Wootton Street. Refuse collection

for the community unit will be from Ethelm Street with bins moved out onto the footway on collection day. Figure 6 shows the swept path of a refuse vehicle accessing the site from Wootton Street and Ethelm Street.



Figure 5: Bin Storage Locations (Stockwool, Dec 2020)

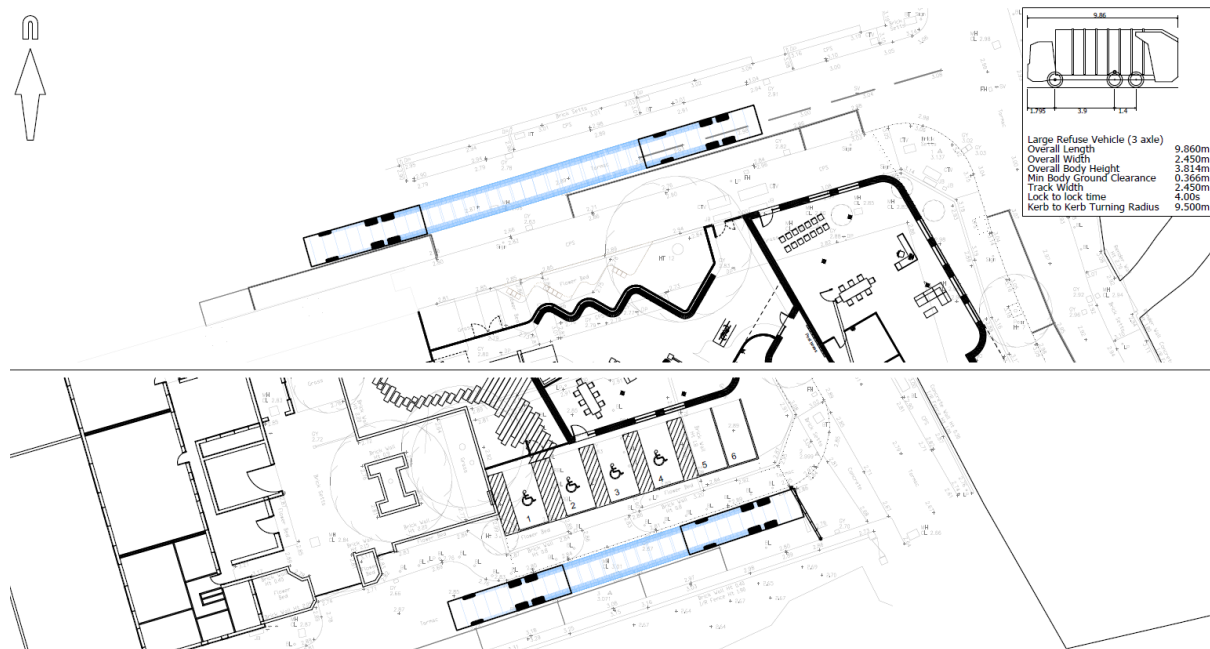


Figure 6: Refuse Vehicle Servicing Swept Path Analysis (Mayer Brown Ltd, Dec 2020)

5.55 Bins for general waste and recycling (dry mixed recycling; paper and card; and food waste) will be provided for both residential and non-residential uses. The capacity of the bin stores for residential use have been calculated based on Part H of the Building Regulations providing 250 litres of combined refuse and recycling per property. A total of 8 eurobins (each 1,100 litres in capacity) will be provided for in the residential communal refuse space.

- 5.56** The allocated refuse storage space for commercial waste will follow BREEAM Wst 03 'Operational Waste' criteria to ensure adequate provision of dedicated storage facilities for the operational-related recyclable waste streams is provided, so that this waste is diverted from landfill or incineration. A provision of 2 eurobins (each 1,100 litres in capacity) will be provided for both general waste and mixed recycling.
- 5.57** All bins and storage areas will be clearly labelled to assist with waste segregation, storage and collection.
- 5.58** The development is committed to meet the Mayor's 65% target for municipal waste recycling by 2030 and will strive to ensure no biodegradable or recyclable waste is sent to landfill by 2026, once the proposed development at Wootton Street is operational.
- 5.59** New residents and property occupants will be encouraged to reduce and prevent waste through good practice measures such as providing information packs to residents about how the waste segregation and recycling scheme operates. The information will also include details on waste prevention schemes and facilities within the London Borough of Lambeth such as:
- > Lambeth Reuse and Recycling Centres - Reuse and recycling centres allow Lambeth residents to dispose of a wide range of reusable and recyclable items for free;
 - > Love Food Hate Waste – aims to raise awareness of the need to reduce food waste and ways to take action;
 - > Community RePaint – UK wide paint reuse network that aims to collect leftover paint and redistribute it to benefit individuals, families, charities and communities in need at an affordable cost.
 - > InUse-ReUse – An upcycling initiative organisation, supported through Veolia Lambeth's Recycling Fund for Communities, that helps companies and domestic clients that want to increase their sustainability efforts, by reuse, recycling and upcycling all types of waste that is destined for landfill.
 - > Freecycle Network; and Freegle – are networks that aims to increase reuse and reduce landfill by offering a free online based service where people can give away and ask for things that would otherwise be thrown away.

6. CONCLUSION

- 6.1** This Circular Economy Statement has been prepared by Hodkinson Consultancy, a specialist energy and environmental consultancy for planning and development, appointed by Homes for Lambeth.
- 6.2** The purpose of this statement is to demonstrate that the proposed development at Former Coral Day Nursery, Wootton Street has considered circular economy principles to:
- > Minimise embodied carbon;
 - > Operate with a circular economy;
 - > Maximising the value extracted from materials; and,
 - > Prioritising the reuse and recycling of materials.
- 6.3** The aim of circular economy is to retain the value of materials and resources indefinitely, with no residual waste at all. This is possible but will require a fundamental change in the way that buildings are designed, built, operated, and deconstructed.
- 6.4** A series of targets have been proposed in this Circular Economy Statement, identifying and applying these approaches during concept design will enable them to be incorporated as part of the development brief and will help facilitate a circular economy approach.
- 6.5** A Post Construction Completion Report is to be provided at project completion. This will seek to set out the predicted and actual performance against all numerical targets, and provide updated versions of the items covered in Table 1 and Table 2 (Appendix A2). The following reports will be provided and included in the Post Construction Completion Report:
- > Detailed pre-demolition audit and Site Waste Management Plan
 - > Cut and Fill Calculations & Material Options Assessment
 - > Reused or Recycled Content Calculations
 - > Scenario Modelling
 - > Lean Design Options Appraisal
 - > Building Weight Calculations (load take-down)
 - > Bill of Materials
 - > Recycling and Waste Reporting table

APPENDICES

Appendix A1 - Meeting Minutes

WOOTTON STREET CIRCULAR ECONOMY AND LIFE CYCLE ASSESSMENT APPROACH

Introduction

As part of the life cycle assessment (LCA), this document sets out the options to be evaluated, following embodied carbon discussions with the design team. This document also describes initial discussions on circular economy principles to be considered for the proposed development at Wootton Street (Former Coral Day Nursery).

LCA and circular economy implementation is required at this stage to comply with GLA planning requirement, specifically to adhere to Policies SI 2 & SI 7, of the recently adopted new London Plan.

Key Stakeholders / Design Team Members

- Kevin Butler – Homes for Lambeth (HfL)
- Stefania Gkourami - Homes for Lambeth (HfL)
- Parinaz Mirzaei – Stockwool Architects (SW)
- Maihul Varsani – Hodkinson Consultancy (HC)
- Zoe Lowther – Hodkinson Consultancy (HC)
- Zeta Watkins - Hodkinson Consultancy (HC)

Points of Discussion & Options Summary

Embodied Carbon and LCA

The following table summarise the options to be evaluated following discussions on the importance of embodied carbon and are set by the building element.

Item	Implementation
Embodied Carbon and LCA	
Introduction and Context LCA and Embodied carbon analysis are required to understand the position with regards to sustainability and help identify the carbon that will be released from the proposed development at Wootton Street, both in terms of potential demolition works, construction and over the life-cycle of the building.	HfL
Compliance against GLA policy requirements is required and demonstrated via a Whole Life Cycle Carbon Emissions Statement, to be submitted at planning.	HC
Development Brief The site currently comprises of a single storey block which has previously been a special education needs school (Use Class D1), a play area and a car park are also located within the site boundary.	SW
The proposed development comprises the demolition and clearance of existing structures and redevelopment and the erection of a new part 5/8/10 storey mixed use	

<p>building. The new build is to provide community floorspace on the ground floor and 36no. residential units (Class C3) above with associated residents' amenities, cycle parking, car parking and public realm enhancements.</p>	<p>SW</p>
<p>Considerations on Material Use / Efficiency The commercial floorspace (Use Class D1) will be designed and built to achieve a BREEAM 'Excellent' rating under the New Construction 2018 Shell Only Scheme. Where practical, new building materials should be sourced locally to reduce transportation pollution and support the local economy. New materials should be selected based on their environmental impact and responsible suppliers will be used where possible.</p> <p>Existing site conditions to be assessed. Detailed pre-demolition audit to undertaken post planning. Options are to be explored on extent of material from existing site for use in the new build. Examples include utilising the existing material from the foundations and general structure, once crushed, for back fill, particularly for landscaped areas. Existing trees to the south are to be retained.</p> <p>Considerations for material option with recycled content are to be review. Possible examples include steel, plasterboards and paint. The use of recycled and/or secondary aggregates will be considered for structural elements. Further investigations required.</p> <p>Considerations on off-site manufacture, pre-fabrication and modular design are to be considered. However, given the scale of the project, options may be limited to glazing and façade concrete bands. Packaged plant rooms, pre-fabricated bathroom pods and internal column partitions will also be reviewed.</p> <p>Passive design strategies and principles will be considered in the energy strategy to minimise operational energy demand.</p>	<p>SW</p> <p>SW</p> <p>SW</p> <p>SW</p>
<p>Next Steps</p> <p>Agree timescales for addressing points made above. Continue regular engagement through design phases noting guidance from WRAP, LETI, GLA, etc.</p>	<p>All</p>

Item	Implementation
Circular Economy	
<p>Description of the Development As noted above.</p> <ul style="list-style-type: none"> 'Proposed gross internal floor area to be verified.' <p>HC to check and confirm with SW</p>	<p>HC</p>

<p>Strategic Approach to Circular Economy</p> <ul style="list-style-type: none"> • <i>'A summary of the strategic approach to implementing circular economy principles for the proposed development to be presented as required in Table 1 of GLA's guidance, in addition to a supporting narrative.'</i> <p>HC to produce Table 1 highlighting approach</p>	<p>HC</p>
<p>Bill of Materials</p> <ul style="list-style-type: none"> • <i>'A Bill of Materials is required for the proposed development with confirmation that reused or recycled content will be 20%. The Bill of Materials should detail the estimated 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).'</i> <p>Bill of Materials to be provided for post construction report.</p>	<p>HfL Principal Contractor</p>
<p>Recycling and Waste Reporting</p> <ul style="list-style-type: none"> • <i>'Recycling and waste estimates are required detailing the total amount of waste/material to be generated during excavation, demolition, construction and operation.'</i> • <i>In order to be compliant, this must include clearly defined activities and targets relating to the following London Plan policy targets:</i> <ul style="list-style-type: none"> ○ <i>95% reuse. recycling/recovery of construction and demolition waste</i> ○ <i>95% beneficial use of excavation waste</i> ○ <i>65% recycling of municipal waste by 2030.'</i> <p>Aspects of the above also relate to BREEAM compliance. To be addressed in the Site Waste Management Plan and associated waste & construction management reports, where appropriate.</p>	<p>HfL / Principal Contractor HC</p>
<p>Operational Waste</p> <ul style="list-style-type: none"> • <i>'Estimated expected operational waste arising from the proposed development is to be provided and details of how the waste will be managed in accordance with the waste hierarchy.'</i> <p>Operational waste strategy to be provided. Aspects of the above also relate to BREEAM compliance.</p> <p>HC to review London Borough of Lambeth waste policy and confirm if compliance with the waste hierarchy is achieved.</p> <ul style="list-style-type: none"> • <i>'Demonstrate the proposed development is designed with adequate, flexible, and easily accessible operational waste storage space and supports separate collection of dry recyclables and food waste.'</i> <p>Adequate facilities will be provided for domestic and construction related waste, including segregated bins for refuse and recycling. To be addressed in the Design & Access Statement and for BREEAM compliance where appropriate.</p> <ul style="list-style-type: none"> • <i>'It is required to confirm how the operational waste performance will be monitored and reported once the proposed development is operational. A commitment to ensure that there is zero biodegradable or recyclable waste to</i> 	<p>HfL / SW HC</p>

<p><i>landfill by 2026. A commitment to ensure the municipal waste recycling target of 65% by 2030 is met or exceeded. It must be also demonstrated that 50% recycling rates for households will be achieved by 2030.'</i></p> <p>Occupant will be provided with information (e.g. home user guide) on waste management to encourage the targets listed above.</p>	<p>HfL</p>
<p>End of Life Strategy</p> <ul style="list-style-type: none"> <i>A brief end of life strategy is required to demonstrate how the building materials, components and products will be disassembled and reused at the end of their useful life. Strategy for how the building materials, components and products will be disassembled and reused at the end of their useful life.'</i> <p>The above documentation will be included in the post construction report.</p>	<p>SW</p>
<p>Additional Reports / Statements required:</p> <ul style="list-style-type: none"> <i>'A detailed pre-demolition is required to identify components of the building that can be retained / reused.*</i> <i>Site Waste Management Plan / Resource Management Plan *</i> <i>Cut and Fill Calculations & Material Options Assessment</i> <i>Reused or Recycled Content Calculations**</i> <i>'Scenario Modelling demonstrating adaptability**</i> <i>'Municipal / Operational Waste Strategy and associated drawings**</i> <p>The above documentation will be included in the post construction report. *Aspects of the above also relate to BREEAM compliance.</p> <ul style="list-style-type: none"> <i>'Lean design options appraisal and Building weight calculation (load take-down)'</i> <p>Lean design options appraisal and building weight calculations will be provided at detailed design stage and included in the post construction report as this will be an ongoing process through value engineering workshops, etc.</p>	<p>All</p>

Appendix A2 – Summary of Key Commitments

	Site / phase / building	Sub-structure	Super-structure	Construction
Section A: Conserve resources - Focus on conserving materials and resources, and to source materials responsibly				
Minimising the quantities of materials used	Post planning, a pre-demolition / pre-construction audit will be produced to maximise material recovery and reuse, where feasible.			The principal contractor on appointment will be required to minimise material usage during construction works where possible. Opportunities will be reviewed during future design stages.
	The use of RAP (recycled asphalt planings) as a significant proportion of the aggregate input in landscaping could be considered. As well as avoiding the use of virgin aggregate this utilises the bitumen on the reused stone.			
Minimising the quantities of other resources used (energy, water, land)	In line with BREEAM Land Use and Ecology 01 – Site Selection, the proposed development will be at least 75% on previously developed land, avoiding land which has not been previously disturbed.	N/A	N/A	In accordance with the BREEAM guidelines set in Management 03, energy and water consumption will be monitored on a weekly basis. Targets to be set and progress reported on a monthly basis.
	An Energy Statement, by Hodkinson Consultancy, has been produced and demonstrates how the building fabric has been optimised to reduce energy demand. Energy and water meters will be provided to facilitate monitoring in use. Opportunities for reducing energy and water consumptions will be promoted to tenants and residents.	N/A	N/A	In accordance with the BREEAM guidelines set in Management 03, the monitoring and recording of data for the transport movements from the delivery of construction materials and construction waste from site will be undertaken. Targets for transportation movements and progress will be reported on a monthly basis.

	Site / phase / building	Sub-structure	Super-structure	Construction
Specifying and sourcing materials responsibly and sustainably	The appointed contractor will produce and follow a site-specific Sustainable Procurement Plan which ensures that new building materials are selected to ensure that they minimise environmental impact and have low embodied energy – from manufacture, transportation and operational stages, through to eventual demolition and disposal.			
	Specification of construction products with an Environmental Product Declaration (EPD) will be prioritised where feasible/relevant			
	Major building elements to be sourced in accordance with BES6001 where possible			
	Products to be specified using performance criteria, rather than by brand or specification. For example, tensile and yield for steel and lux levels for lighting.	Considerations for opportunities to use secondary/recycled aggregates will be assessed at detailed design.		
	Specify materials with increased levels of recycled content where there is no impact on cost or performance			
Section B: Design to eliminate waste – Includes designing to facilitate maintenance (therefore retaining materials and products in service for as long as possible), and through careful selection of construction techniques or procurement strategies				
Designing for reusability / recoverability / longevity / adaptability / flexibility	The proposed development at Wootton Street is situated on land that has been previously occupied, and the current proposals are not prohibitive of future reuse.	Considerations have been given to the typical floor to ceiling heights to allow for future change of use for the commercial unit.	Vulnerable elements will be protected from damage. Protection measures will be incorporated to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring.	
	Circulation capacity, fire strategy and means of escape are appropriate for different uses.		No fixtures or fittings will be glued down wherever feasible to ease future disassembly and recovery.	

	Site / phase / building	Sub-structure	Super-structure	Construction
			Unnecessary toxic treatments and finishes will be avoided. Finishes that can contaminate the substrate in a way that they are no longer reusable will be avoided unless they serve a specific purpose.	
			Adopt passive design strategies to provide resilience, size systems to cope with future climate scenarios.	
			Connections and components to have high durability.	
Designing out construction, demolition, excavation, industrial and municipal waste arising	Both residential and non-residential units are to be provided with adequate space for both recycling and refuse and BREEAM Wst 03 criteria.			Just in time delivery system to be implemented to ensure that a surplus of materials is not kept on site.
	Materials, components, and products to be sourced as part of a leasing / buy back scheme, where feasible			
	Design coordinated to avoid excess cutting and jointing of materials / components that generate waste			
		Where relevant, producing a site deconstruction strategy plan should be considered.		The subcontractor will be responsible for organising the take back of packaging waste, including pallets, where they can be re-used as a material as opposed to disposing as waste.
Section C: Manage waste - Consider measures that can be taken to manage any waste that is generated, by increase reuse and recycling rates				
Demolition waste	An extensive pre-demolition audit will be produced, post planning, to maximise material recovery and reuse, where feasible.			Community Wood Recycling (CWR) is a network of wood recycling social enterprises providing an efficient and

	Site / phase / building	Sub-structure	Super-structure	Construction
	<p>Prior to construction, the appointed contractor will develop a Site Waste Management Plan which will establish ways of minimising waste at source, assess the use, re-use, and recycling of materials on and off-site and prevent illegal waste activities. This will be disseminated to all relevant personnel on and off-site.</p> <p>Predicted and actual calculations of total non-hazardous waste arising will be estimated, monitored and recorded.</p>			cost-effective collection service for all types of waste wood.
Excavation waste	N/A	N/A	N/A	Predicted and actual calculations of total non-hazardous excavation waste arising will be estimated, monitored and recorded and opportunities for use on site should be reviewed.
Construction waste	<p>Contractors should explore reusable packaging solutions with key product manufacturers at the earliest opportunity. Solutions may include:</p> <p>Flat pallets: Wood pallets have the greatest potential for cutting emissions and reusable plastic pallets are better for waste reduction.</p> <p>Box pallets: High quality plastic folding box pallets reduces the need for disposable packaging.</p> <p>Steel stillages: Specialist steel A-frame stillages (carrying plate glass) can replace single trip pallets of non-standard sizes and associated protective disposable packaging. This could be extended to be</p>			<p>As part of their commitment to divert construction waste from landfill, the appointed contractor will be required to regularly monitor and record the site's waste reduction performance. This will be compared against a target benchmark where at least 85% (by volume) of non-hazardous waste is to be diverted from landfill.</p> <p>Waste will be segregated on site and materials only to be delivered to site when needed, to prevent damage</p>

	Site / phase / building	Sub-structure	Super-structure	Construction
	used for other products such as dense cladding, heavy panels and frames.			
Municipal and industrial waste (operational waste management)	Both residential and non-residential units are to be provided with building/home user guides that outlines the benefits of a circular economy. Information will also include details on waste prevention schemes within the London Borough of Lambeth.		N/A	
	Both residential and non-residential units are to be provided with adequate space for both recycling and refuse in line with London Borough of Lambeth guidelines and BREEAM Wst 03 criteria		N/A	
	Installation of pulsed output water and energy meters and submeters to allow for monitoring of operation usage/consumptions.		N/A	

	Implemented in design
	To be considered
	Future considerations