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**Circular Economy
Statement**

Highgate Care Limited

**Mary Feilding
Guild Care Home**

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 Mary Feilding Guild Care home, located at 103-107 North Hill, by Highgate Care Limited in the London Borough of Haringey 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 commitments 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:

- > The Care Home will be designed to meet resident and staff needs, be robust, durable, and resilient to climate change;
- > At least 20% of construction material will include recycled content;
- > Early engagement with the principal contractor and sub-contractors, once appointed, will be utilised to assist in refining circular economy targets such as:
 - > A minimum of 95% of non-hazardous construction waste is to be recycled or reused;
 - > Monitor energy, water, fuel consumptions and waste during construction phase;
 - > Low carbon construction methods (offsite/ modular construction);
 - > Implementation of a site-specific Sustainable Procurement Plan, setting out aims and targets for procuring products sustainably and locally, 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). Materials with Environmental Product Declarations (EPDs) and associated responsible sourcing certificates (BES 6001, ISO 14001, etc.) will be prioritised;
- > The site will endeavour to meet the Greater London Authority (GLA) target of 95% reuse/ recycling/ recovery of any non-hazardous site demolition material. 95% of non-hazardous excavation waste will be put to beneficial use;
- > The Care Home will be provided with access to sufficient refuse storage for the segregation and storage of at least three waste streams (recycling, food and residual waste) in both individual residential rooms and bin stores to enable effective waste segregation by both residents and staff and promote higher recycling and composting rates. A municipal waste recycling target of 65% by 2030 will be set.
- > All staff and building occupants will be provided with a user guide to promote the principles of circular economy.

- > Throughout detailed design stage, additional workshops will be held to explore further opportunities to drive and incorporate key circular economy principles into aspects of the design, procurement and construction process. The following focus areas will continually be reviewed to maximise opportunities to embed circular economy principles:
 - > Material efficiency and lean design principles
 - > Design adaptability and flexibility
 - > Structural and fabric robustness and resilience
 - > Material circularity, material procurement via leasing frameworks and enabling ease for disassembly and maintenance
 - > Whole Life Cycle Carbon Assessments
 - > Tenant and community engagement

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 Highgate Care Limited.
- 1.2** The purpose of this statement is to demonstrate that the proposed re-development at 'Former' Mary Feilding Guild Care Home, 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 Haringey.
- 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 REGULATIONS

- 2.1** This chapter highlights the policies and regulations which are relevant to the proposed development.

London Plan (2021)

- 2.2** The 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.

Guidance Documents

- 2.3** Preliminary guidance has been released by the Greater London Authority (GLA) “*Circular Economy Statement Guidance Draft*”, issued in October 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.
- 2.4** 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.

- 2.5** The proposed re-development at 'Former' Mary Feilding Guild Care Home in Haringey is already at RIBA Stage 2/3 with a full application being submitted, whilst the development is not referable to the Mayor of London, it is considered best practice to produce a Circular Economy Statement at this stage.
- 2.6** 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.

BREEAM

- 2.7** The proposed development will be designed and built to achieve a BREEAM 'Very Good' rating under the New Construction 2018 scheme, thus representing a high level of sustainable design and construction. A BREEAM Strategy has been prepared by Hodkinson Consultancy in support of this application.
- 2.8** Implementing a circular economy approach can assist towards achieving the following credits:
- > **Materials 01 Environmental Impacts from Construction Products** – Building and Life Cycle Assessment (LCA) – This encourages the use of reused / recycled / reclaimed and reusable / recyclable / durable / adaptable materials, products and systems in the building services and superstructure reduces life cycle impacts;
 - > **Materials 05 Designing for Durability and Resilience** – Aims to reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape. It requires protecting vulnerable and exposed parts of the building from damage and material degradation, thus increasing longevity and resilience of building components, resulting in fewer resources required for repairs and refurbishment;
 - > **Materials 06 Material Efficiency** - Aims to avoid unnecessary material use arising from over specification without compromising structural stability, durability, or the service life of the building. Targets and reporting on opportunities and methods to optimise the use of materials, at various stages of design and construction will be required. It will be necessary to develop and record the implementation of material efficiency at various stages of design construction. Targets and actual material efficiencies achieved will need to be reported. Less over-specification means that there is less wastage of materials and reduced overall demand;

- > **Waste 01 Construction Waste Management** – Aims to reduce construction waste by encouraging reuse, recovery, and best practice waste management practices to minimise waste going to landfill. The pre-demolition audit of existing buildings takes place, to identify where existing buildings, structures or hard surfaces may be reused as part of the planned project. It ensures procedures in place for sorting construction waste into waste groups. Encourages circular routes for construction waste;
- > **Waste 03 Operational Waste** – To encourage the recycling of operational waste through the provision of dedicated storage facilities and space. The building users will be provided with space for recyclable and compostable waste storage, where relevant. It is therefore important to provide sufficient storage areas within the building to reflect the recyclable waste streams that are generated and then collected by the local waste authority. This makes it as clear and convenient as possible for the building users to separate waste at source and encourage the reduction of waste to landfill;
- > **Waste 05 Adaptation to Climate Change** – Encourages to take measures to mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building. Requires an assessment of structural and fabric resilience to extreme weather conditions arising from projected climate change, with mitigation where feasible. Reduces likelihood of needing to replace products and materials due to damage or poor functionality resulting from changing climate conditions.; and,
- > **Waste 06 Design for Disassembly and Adaptability** – Aims 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. Credit requires a study into potential designs for disassembly and functional adaptability of building, with recommendations. Recommendations implemented and an adaptability and disassembly guide produced to communicate.

3. DEVELOPMENT OVERVIEW

Site Location

- 3.1 This document has been prepared by Hodkinson Consultancy, a specialist energy and environmental consultancy for planning and development to present the overheating mitigation strategy for the proposed development at Mary Fielding Guild Care Home in the London Borough of Haringey.

Site Location

- 3.2 The proposed development at 'Former' Mary Fielding Guild Care Home in the London Borough of Haringey is located at Highgate, London N6 4DP, as shown in Figure 1 below.



Figure 1: Site Location - Map data © 2021 Google

- 3.3** The site measures 0.374 hectares (0.9 acres) and it is occupied by a series of five interlinked buildings which wrap around the site in an L shape. The current Mary Feilding Guild Care Home is a registered care home for the elderly. The building has the main frontage on to North Hill to the east and a back entrance with parking spaces on to View Road to the south-east.
- 3.4** The existing care home is deemed to be no longer financially viable by the current operator. It fails to meet current space, facility and building regulation standards. The building does not offer Part M accessibility or Part B fire safety compliance in its current state. The existing home does not meet the needs or expectations for care in the Highgate area.

Proposed Development

- 3.5** The proposed development is described as follows:
- 3.6** *"Demolition of existing buildings and redevelopment to provide a new care home (Class C2 - Residential Institution), together with a well-being and physiotherapy centre. The proposed care home includes up to 70 bedrooms, a hydrotherapy pool, steam room, sauna, gym, treatment/medical rooms, hairdressing and beauty salon, restaurant, cafe, lounge, bar, well-being shop, general shop, car and cycle parking, refuse/recycling storage, mechanical and electrical plant, landscaping and associated works."*
- 3.7** Figure 2 below illustrates the ground floor layout.



Figure 2: Proposed Ground Floor Layout (DWA Architects, November 2021)

- 3.8** The total Gross Internal Floor Area (GIA) for the proposed development is 6,411 m². The principles noted within this report apply to the GIA excluding the car park (**5,999.3 m²**).

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** Highgate Care Limited will aim to make further changes at a strategic level in order to ensure that the core principles of circular economy are adopted on all new developments, 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 1 below.

Table 1: Strategic Approach

	Steering Approach	Target	Supporting Analysis / Surveys / Audits
Circular economy approach for the new development	Minimise construction waste	Construction waste targets will be set to promote resource efficiency (e.g., less than 11.1 tonnes per 100m ²).	Site Waste Management Plan
		95% of non-hazardous construction and demolition waste is to be reused or recycled.	BREEAM Waste 01 – Construction Waste Management
		Monitor energy, water, and waste during construction.	

	Steering Approach	Target	Supporting Analysis / Surveys / Audits
	Select materials with a high recycled content	Prioritise use of materials with low embodied carbon and materials with recycled content, where feasible.	In line with industry recommendations and GLA guidance. WLCCE Assessment
		At least 20% of materials should include recycled content.	
		Steel with high recycled content and GGBS as a cement replacement in concrete will be prioritised.	-
		Use of recycled and/or secondary aggregates where feasible	
	Design with adaptability and longevity in mind	The proposed development will be designed to meet long-term needs, be robust, durable, and resilient to climate change.	Design & Access Statement
	Source materials sustainably	Prioritise use of materials with low embodied carbon and materials with recycled content, where feasible.	Principal contractor's Sustainable Procurement Policy.
		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).	BREEAM Materials 03 – <i>Responsible Sourcing of Construction Products</i>
		Endeavour to specify at least 20 products with Environmental Product Declarations	BREEAM Materials 02 – <i>Environmental Product Declarations</i>
	Maximise re-use of existing building components on site.	All existing site/demolition material will be considered for re-use, wherever feasible.	Pre-demolition / Pre-construction audit BREEAM Waste 01 – <i>Construction Waste Management</i>

	Steering Approach	Target	Supporting Analysis / Surveys / Audits
Circular economy approach for the existing site	Demolish and maximise re-use/recycling of existing building components on site.	Demolition of the existing buildings on the site will occur as they have been deemed not suitable for refurbishment or repurposing. 95% of non-hazardous demolition waste to be diverted from landfill through reuse, recycling, and recovery will be targeted.	Pre-demolition Audits Site Waste Management Plan BREEAM Waste 01 – <i>Construction Waste Management</i>
Circular economy approach for municipal waste during operation	Occupant municipal waste	100% of residential care rooms and communal spaces are to be provided with adequate space for both recycling and refuse.	Design & Access Statement BREEAM Waste 03 – <i>Operational Waste</i>
		100% of residential care rooms are to be provided with provision for both internal and external food waste facilities, where appropriate.	Building / Home user guide Operational / Facilities Management
		All building occupants will be provided with a user guide that outlines the benefits of a circular economy.	Building / Home user guide Operational / Facilities Management
		Waste targets as follows: - 75% recycling rates for any non-residential uses by 2030; - 50% recycling rates for residential care home will be achieved by 2030; - Municipal waste recycling target of 65% by 2030; - Zero biodegradable or recyclable waste to landfill by 2026.	

5.9 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

- 5.10** The appointed principal contractor will seek to implement a sustainable procurement plan for the proposed development. The responsible sourcing of materials will be a key consideration in the selection of suppliers and the sustainable procurement plan will support new building materials being selected to minimise environmental impact and have low embodied energy – from manufacture, transportation, and operational stages, through to eventual demolition and disposal.
- 5.11** Materials from suppliers who participate in responsible sourcing schemes such as the BRE BES 6001:2008 Responsible Sourcing Standard will be targeted, where feasible. In addition, products with a recognised environmental product declaration (EPD) will be targeted where possible.
- 5.12** 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

- 5.13** Adopting a design approach that focuses on material resource efficiency so that less material is used in the design (e.g., lean design), and / or less waste is produced in the construction process, without compromising the design concept.
- 5.14** Throughout design development, various considerations were given to the number of single aspect units and the orientation of the form, keeping in mind the material conservation, site constraints and geometry. The material complexity has been kept minimal in the form of a simple brick façade and balconies (bolt on) stacked to maximise material efficiency.
- 5.15** Where appropriate, floor layouts will be stacked with kitchens/bathrooms coordinated to minimise the amount of mechanical and electrical pipework required and ease maintenance and replacement of elements. Daylighting has been maximised, where possible, to reduce the demand/requirements on artificial lighting.
- 5.16** The development has taken steps to ensure other resource use will be kept to a minimum. Examples include:
 - > The development will achieve a total reduction in regulated CO₂ emissions of 62.2% over the Building Regulations baseline through be lean, be clean and be green on-site measures and will provide homes that are energy efficient and incorporate Low and Zero Carbon technologies.

- > All new residential care units will target a minimum internal water efficiency standard of 105 litres/person/day in accordance with the recently adopted London Plan Policy SI5 and the optional tighter Building Regulations Approved Document G requirement (110 litres/person/day).
 - > Built on land that is already developed which prevents the development of virgin land.
- 5.17** For waste reduction, minimisation of excavation, simplification and standardisation of materials and components of choice, and dimensional coordination have been considered.
- 5.18** The design team will regularly review material efficiency strategies to ensure a lean design that reduces material quantities without inhibiting future flexibility. Engagement with the design team has been undertaken to address the end-of-life strategy for the material. Initial building material information has been made available has been used to undertake a Whole Life Cycle Carbon Emissions (WLCCE) Assessment. Initial results are positive and early recommendations have been included in a standalone report (Energy Statement by Hodkinson Consultancy, November 2021).
- 5.19** The materials for the proposed development will target a benchmark of 20% reused or recycled content.

Eliminating Waste

Designing for Longevity

- 5.20** 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.
- 5.21** 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.
- 5.22** Durable, hard-wearing and low-maintenance façade and roof materials are also proposed. The material palette is predominantly brick, taking inspiration from a local context. All windows are side

hung and inward opening, enabling eased maintenance and cleaning from the inside of the buildings.

- 5.23** Various energy saving sustainable initiatives will be included in the design, such as highly insulated external fabric and walls, and low-energy lighting throughout.

Design for offsite construction

- 5.24** 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.
- 5.25** Although there are limited opportunities for off-site construction and/or modular elements, where practicable and feasible, offsite construction and manufacturing will be considered for the proposed development at 'Former' Mary Feilding Guild Care Home.
- 5.26** Off-site constructed and pre-fabricated elements that may be considered, where relevant, include bolt on balconies, bathroom pods, mechanical and electrical risers and packaged plant rooms.

Designing for Assembly, Disassembly and Recoverability

- 5.27** The proposed development at 'Former' Mary Feilding Guild Care Home will be designed 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.
- 5.28** 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 minimised where feasible, to enable end of life deconstruction and salvage of building elements.
- 5.29** 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.
- 5.30** At this RIBA stage, a detailed Bill of Materials is not yet available and will instead be provided in time for the Post Construction Circular Economy Statement. In accordance with GLA guidance, the Bill of Materials will include kg/m² for the proposed new development and will commit to target a benchmark of 20% reused or recycled content. A brief bill of materials summary table has been provided in **Appendix A3**.

Designing for Adaptability or Flexibility

- 5.31** 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 and generous floor to ceiling heights where appropriate.
- 5.32** The residential care home designs proposed, aim to maximise efficiency with regards to access, circulation, unit sizes, ensuring flexible floorplates. The development will seek to ensuring that the mechanical and electrical design is zoned to allow for future changes in layout.
- 5.33** The development and residential care units proposed on site are flexible for residents and will provide opportunities for improved accessibility, daylighting, and amenity value of communal garden space. The existing provision does not provide suitable access for wheelchair users or those who need support walking. The landscape design seeks to:
- > Create a healing/wellbeing garden space;
 - > Provide a pleasant and less polluted pedestrian route away from traffic;
 - > Increase biodiversity and be low maintenance.
- 5.34** Adaptability and flexibility are key elements so that the environment and buildings, including homes can be responsive to the varying and evolving needs and desires of the people working and living within the community. The design has been developed to integrate principles of inclusive design and enable the new home to be used safely, easily and with dignity by everyone, regardless of age, gender, ethnicity or economic circumstances.
- 5.35** Wheelchair adaptable residential care units are being provided throughout the scheme, with a variety of views and outlooks. The design considerations have allowed for residents to stay in their homes longer and as their needs change.

Standardisation

- 5.36** 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.
- 5.37** As noted in paragraph 5.16, where appropriate, units will be stacked, and bathrooms coordinated to minimise the amount of mechanical and electrical pipework required and ease maintenance and replacement of elements. Figure 3, 4 and 5 illustrates layouts for Ground, First and Second floors.



Figure 3: Ground Floor General Arrangements (DWA Architects, 2021)



Figure 4: First Floor General Arrangements (DWA Architects, 2021)



Figure 5: Second Floor General Arrangements (DWA Architects, 2021)

Material Conservation

- 5.38** A detailed pre-demolition audit will be carried out post planning/ RIBA Stage 4, once a principal contractor has been formally appointed, to confirm and 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.
- 5.39** This pre-demolition audit is not yet available, it will be provided within the next stage of the submission, in line with BREEAM and GLA guidance.
- 5.40** 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.
- 5.41** 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

- 5.42** 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 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.
- 5.43** 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.
- 5.44** All relevant contractors will be required to investigate opportunities to minimise and reduce waste generation, such as:
- > Attention to material quantity requirements to avoid over-ordering and generation of waste materials;
 - > Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;
 - > 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;
 - > 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); 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.
- 5.45** The location of the waste handling site that materials will be taken to, will vary dependent upon their specific make up, of which is yet to be confirmed (on appointment of Principal Contractor). Notification of the likely destination of all waste streams (incl. beyond the Materials Recycling Facility) will be provided, including confirmation that the destination landfill(s) has/have the capacity to receive waste.

- 5.46** Waste facility sites will be confirmed on appointment of the Principal Contractor. Wherever possible, materials will be recycled and re-used either onsite, or provided for use elsewhere. Waste segregation will take place during construction as far as the site allows logistically to give the highest possible recycling rates.
- 5.47** A strategy will be put in place to minimise the space taken by storage of new materials. Frequently used items will be placed in easy to access areas. This will increase efficiency and minimise wastage due to damage. Prolonged storage of materials on site will be avoided, where possible, and implementation of ‘just in time’ deliveries will be encouraged.
- 5.48** 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 benchmark of 95% for potential excavation waste put to beneficial use will also be set.
- 5.49** Waste segregation will take place during construction as far as the site allows logistically to give the highest possible recycling rates.
- 5.50** All relevant contractors will be required to investigate opportunities to minimise and reduce use of energy and water, such:
- > Selection and specification of energy efficient plant and equipment wherever viable;
 - > Use of alternatives to diesel/petrol powered equipment where possible;
 - > The incorporation of sources of renewable energy to offset the use of main utilities will be considered;
 - > Use of recycling water systems such as wheel washes, and
 - > Use of a rainwater harvesting system for use in equipment and vehicle washing will also be investigated.
- 5.51** 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 to ensure that such measures are consistent with both national and local waste policies and targets.

- 5.53** The Waste Hierarchy strategy in accordance with the London Plan will be used to ensure that waste is reduced or reused prior to being put out for recycling or refuse collection. The waste hierarchy, as shown in Figure 6, overleaf, establishes waste management options according to what is best for the environment. It places great importance on preventing waste in the first place. When waste is created it prioritises preparing if for re-use, then recycling, recovery and lastly disposal (e.g., landfill).



Figure 6: Waste Hierarchy

Waste Arising & Storage

- 5.54** The following provides an overview of the waste strategy for the new home, more detail is provided in the Transport Assessment (October 2021) prepared by Markides Associates and Design and Access Statement (October 2021) by DWA Architects (separate submitted reports).
- 5.55** Adequate, flexible, and easily accessible refuse and recycling (dry mixed recycling and food waste) storage are provided for the Care Home. Internal bin stores have been designed in accordance with BS 8300:2009 and will have lighting and good ventilation.
- 5.56** All bins will be clearly labelled to assist with waste segregation, storage, and collection, fitted with a secure door set to ensure stores are only accessible to residents and staff at 'Former' Mary Feilding Guild Care Home only.
- 5.57** The proposed waste storage areas have been calculated in accordance with Haringey Council's Guidelines, for maximum weekly collection. The calculations have been completed against the proposed schedule of accommodation and have been based on 1100l Euro bins for recycling and general waste and 240l wheelie bins for food waste.

- 5.58** Bins are not left on the public footway. The proposed arrangement ensures that suitable collection distances for operatives are provided. Servicing will be removed from North Hill and consolidated into a single new bin store, provided at ground floor level and accessible from View Road. Waste collection will be undertaken by a private operator, who will be able to serve the site in a small vehicle – it is anticipated this will be a condition on a planning permission.
- 5.59** As shown in Figure 7 (View Road) and 8 (North Hill), dedicated waste storage rooms will be provided on the ground floor across the development for the final storage and removal of waste from site.

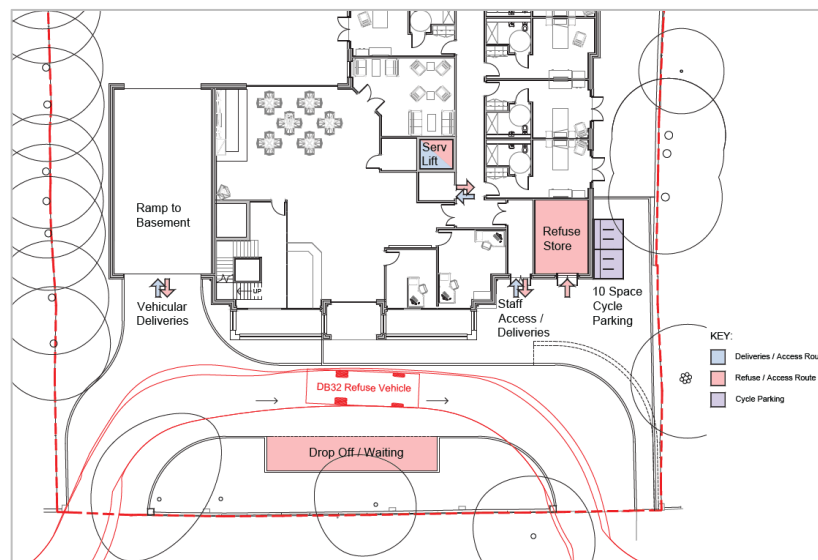


Figure 7: Ground Floor Refuse Store Location – View Road, Refuse Vehicle Route (DWA Architect, 2021)

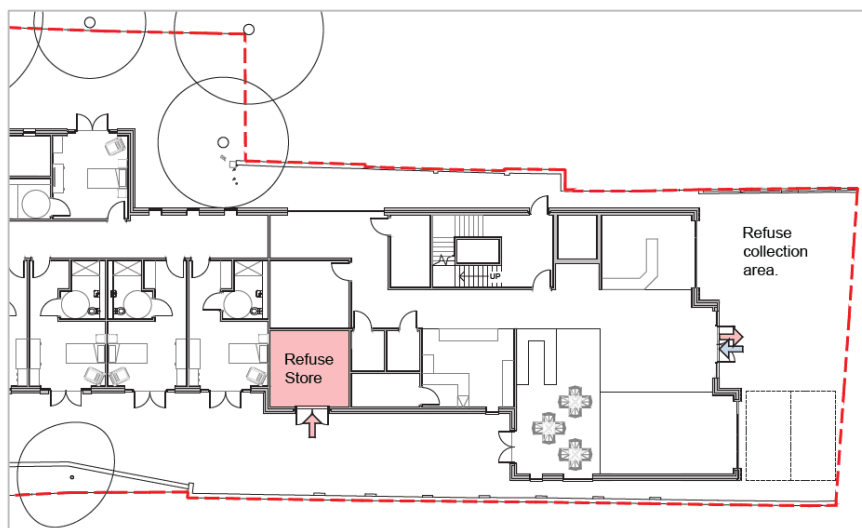


Figure 8: Ground Floor Refuse Store Location – North Hill (DWA Architect, 2021)

- 5.60** It will be the responsibility of the site managers to arrange for bins to be cleaned. Consideration will also be given to the recommendation that space is allocated on-site for the storage of at least one empty container, to allow cleansing of bins to be undertaken on a rotation basis without reducing the availability of refuse and recycling storage capacity.
- 5.61** All residential care units and kitchen areas will be provided with segregated waste bins, with three compartments within the kitchen.
- 5.62** The estimated waste arisings (litres/week) have been calculated in accordance with London Borough of Haringey guidance. The estimated weekly volume (litres) of waste arising from 'Former' Mary Feilding Guild Care Home is summarised in Table 2.
- 5.63** Waste bin provision requirements have been estimated by the architect based on previous experience with care homes of a similar size, shown in Table 2 below.

Table 2: Summary of Require Bin Provision – (DWA Architects, 2021)

General Waste	Medical Waste
Eurobin (1,100l)	Eurobin (1,100l)
5	2

- 5.64** Further waste provision details will be available in a Waste Management Plan to be produced for the proposed development.
- 5.65** 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 'Former' Mary Feilding Guild Care Home, is operational. The development will be managed by Highgate Care Limited.
- 5.66** Residents and property occupants will be encouraged to reduce and prevent waste through good practice measures such as providing information packs to staff and residents about how the waste segregation and recycling scheme operates. The information will also include details on waste prevention schemes within the London Borough of Haringey such as:
- > **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;

- > **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.

Recycling Waste Reporting Form

- 5.67** The recycling and waste metrics reporting will be provided by the main contractor, once appointed. This will be agreed with the project manager and a site waste management plan, which will contain improved estimates for figures shown in Table 3.

Table 3: Recycling and Waste Reporting – Construction and Municipal Waste

		Excavation Waste	Demolition Waste	Construction Waste	Municipal Waste
Total Estimate (t/m ² GIA)		0.85	0.15	0.11	27 t/annum
% reused on or off site		>95%	>95%	>95%	>65%
% recycled or composted, on or off site					
% not reused or recycled	% to landfill	0	Max 5%	Max 5%	Max 35% and no recyclable or compostable waste
	% to other management (e.g. incineration)	0	Max 5%	Max 5%	

Plans for Implementation

- 5.68** Considerations for circular economy implementation will be required through active engagement with key stakeholders at each stage, of which include (but not limited to):
- > Principal Contractor and Sub-contractors (when appointed);
 - > Client (Highgate Care Limited)
 - > Project Architect (DWA Architects);
 - > Energy & Sustainability (Hodkinson Consultancy);
 - > Structural, Flood Risk & Drainage Engineers (Ardent Consulting Engineers); and,

- > Transport Consultants (Markides Associates).

5.69 A brief plan of implementation (short, medium, and long term) and action list was compiled as a result of the initial Circular Economy workshop (Appendix A1). Key actions of which included:

- > Existing site investigation to identify materials feasible for reuse or retention within the proposed development;
- > Identify materials and products with recycled content, including investigating potential recycled aggregate % calculations or use of GGBS as a cement replacement in concrete;
- > Consultant reports to include and keep circular economy principles in mind (e.g., Design and Access Statements, Operational Waste Strategy, etc).

5.70 Such requirements, along with the projects strategic approach to implementing circular economy principles, will be included in tendering specifications to contractors, ensuring responsibilities in line with these aspirations are embedded from the earliest opportunity.

End of Life Strategy

5.71 Although the proposed development is still at an early design phase, engagement with the design team has been undertaken to address the end-of-life strategy for the building materials and components.

5.72 Once the principal contractor is appointed, and the design is progressed and develops to specify exact materials and products, the end-of-life scenarios for the building will become more detailed as a result. The main aim is to extend the lifetime of the building through careful design and specification through the measures listed herein.

5.73 Once appointed, the contractor will also be required to produce a disassembly manual that provides guidance on which materials, elements or components can be reused, recycled, or composted. Where possible, the disassembly manual will include a Building Information Model (BIM) to ensure information can be easily accessible and updated where relevant.

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 Highgate Care Limited.

- 6.2** The purpose of this statement is to demonstrate that the proposed development ‘Former’ Mary Feilding Guild Care Home, has considered circular economy principles to:
- > Minimise embodied carbon;
 - > Operate with a circular economy;
 - > Maximise the value extracted from materials; and,
 - > Prioritise 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 Appendix A2. The following reports will be prepared and included in the Post Construction Completion Report:
- > Detailed pre-demolition audit and Site Waste Management Plan (once Principal Contractor is appointed);
 - > 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;
 - > Updated Recycling and Waste Reporting table.

APPENDICES

Appendix A1 - Meeting Minutes

MARY FEILDING GUILD CARE HOME CIRCULAR ECONOMY APPROACH

Introduction

This document describes initial discussions on circular economy principles to be considered for the proposed development at Mary Feilding Guild Care Home.

Circular economy implementation is required at this stage to comply with GLA planning requirement, specifically to adhere to Policy SI 7, of the London Plan.

Key Stakeholders / Design Team Members

- Client – Highgate Care Limited (HGC)
- Architect – DWA Architects (DWA)
- Transport Consultant – Markides Associates (MA)
- Structural Engineers – Elite Designers – Structural Engineering Consultants (ED)
- Energy & Sustainability – Hodkinson Consultancy (HC)

Points of Discussion & Options Summary

Circular Economy

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

Item	Implementation
Circular Economy	
Development Brief & Strategic Approach to Circular Economy • <i>The proposed development at Mary Feilding Guild Care Home is to be fully redeveloped in order to achieve a 70-bed care home.</i> • <i>The existing care home is deemed to be no longer financially viable by the current operator.</i> • <i>It fails to meet current space, facility and building regulation standards. The building does not offer Part M accessibility or Part B fire safety compliance in its current state.</i> • <i>The existing home does not meet the needs or expectations for care in the Highgate area - for which there is a strong demand.</i> HC to produce Table 1 highlighting approach	HC
Bill of Materials • <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> Bill of Materials to be provided for post construction report.	DWA ED Principal Contractor

Recycling and Waste Reporting • <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> ○ 95% reuse, recycling/recovery of construction and demolition waste ○ 95% beneficial use of excavation waste ○ 65% recycling of municipal waste by 2030.' To be addressed in the Site Waste Management Plan and associated waste & construction management reports, where appropriate.	HGC / Principal Contractor HC
Operational Waste • <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> Operational waste strategy to be provided. • <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> Adequate facilities will be provided for operational and construction related waste, including segregated bins for refuse and recycling. • <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 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> Occupants will be provided with information (e.g. building user guide) and training on waste management to encourage the targets listed above. Site will be managed by Highgate Care Limited	DWA MA HGC
End of Life Strategy • <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> The above documentation will be included in the post construction report.	DWA ED Principal Contractor

Additional Reports / Statements required: • <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> Commitment to provide the above will be included in Circular Economy Planning Statement. Documentation will be included in the post construction report. • <i>'Lean design options appraisal and Building weight calculation (load take-down)'</i> 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.	All
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Appendix A2 – Summary of Key Commitments (GLA Table 2)

	Site / Space / Stuff / building	Sub-structure	Super-structure	Shell/Skin	Services	Construction
Section A: Conserve resources - <i>Focus on conserving materials and resources, and to source materials responsibly</i>						
Minimising the quantities of materials used	Low embodied carbon materials will be prioritised where possible. 50% GGBS/PFA cement substitute will be considered to significantly reduce embodied carbon in concrete.					Exact dimension to be calculated and checked prior placing material orders to prevent over ordering.
	20% of materials will seek to include reused and recycled content.	Minimising the quantities of material used for the floor slab to be considered. Slab types and thicknesses to be reviewed.		Off-site manufacture will be utilised where possible.		
Minimising the quantities of other resources used (energy, water, land)	The proposed development will be on previously developed land, avoiding land which has not been previously disturbed.	Where appropriate and feasible, key materials will be sourced from local suppliers to minimise transportation emissions. 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.	Energy and water consumption will be monitored on a weekly basis.
	Water efficient sanitaryware will be specified to minimise potable water demands.				Where possible, external lighting and any security lighting will be energy efficient and adequately controlled using PIR sensors, daylight cut-off sensors or time switches. This will ensure the conservation of	Where appropriate and feasible, key materials will be sourced from local suppliers to minimise transportation emissions.
	Where provided, white goods will aim to be energy efficient with at least a B rating.					

	Site / Space / Stuff / building	Sub-structure	Super-structure	Shell/Skin	Services	Construction
					energy when the lighting is not in use.	
	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.					
Specifying and sourcing materials responsibly and sustainably	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					
	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	Steel with a high recycled content will be used where possible/relevant				
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	Drainage systems capacity and allowances for climate change have been accounted for in the drainage strategy.	Considerations have been given to the typical floor to ceiling heights to allow for future change of use	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	Hard-wearing and low-maintenance external façade / roofing will be specified to limit replacement during building life.		

	Site / Space / Stuff / building	Sub-structure	Super-structure	Shell/Skin	Services	Construction
			malicious damage occurring.			
	Circulation capacity, fire strategy and means of escape are appropriate for different uses			Consider panelised construction, particularly for roofs and facades to permit final deconstruction on the ground.		
	No fixtures or fittings will be glued down wherever feasible to ease future disassembly and recovery. Absence of fitted furniture so rooms can be adapted for multiple purposes (e.g., bedroom/office). Connections and components to have high durability.					
	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.			
	Using recycled sub-base from site works where possible		Standard sizes to be specified where possible.		Just in time delivery system to be implemented to ensure that a surplus of materials is not kept on site.	
Designing out construction, demolition, excavation, industrial and municipal waste arising	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.					

	Site / Space / Stuff / building	Sub-structure	Super-structure	Shell/Skin	Services	Construction
	Where relevant, producing a site deconstruction strategy plan should be considered. Rooms in residential units are to be designed adaptable for multiple uses (e.g., office/bedroom)					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	Material recovery and reuse will be prioritised, where feasible. 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. Predicted and actual calculations of total non-hazardous waste arising will be estimated, monitored and recorded					Community Wood Recycling (CWR) is a network of wood recycling social enterprises providing an efficient and cost-effective collection service for all types of waste wood.
Excavation waste	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. Standard sizes will be specified where feasible, to enable future reuse, e.g., no bespoke cutting of materials as this can make replacements difficult to obtain.					
Construction waste	As part of their commitment to divert construction waste from landfill, the appointed contractor will 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 waste is to be diverted from landfill. 95% of non-hazardous excavation waste will be put to beneficial use, where feasible.					

		Site / Space / Stuff / building	Sub-structure	Super-structure	Shell/Skin	Services	Construction
	Municipal and industrial waste (operational waste management)	Waste will be segregated on site and materials only to be delivered to site when needed, to prevent damage					
		Contractors should explore reusable packaging solutions with key product manufacturers at the earliest opportunity. Solutions may include:					
		Flat pallets: Wood pallets have the greatest potential for cutting emissions and reusable plastic pallets are better for waste reduction.					
		Box pallets: High quality plastic folding box pallets reduces the need for disposable packaging.					
		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 used for other products such as dense cladding, heavy panels and frames.					
		The London Borough of Haringey Council website advises on recycling and aims to make recycling easier for property occupants and facilities management. Details on accessing this information should be provided in any welcome packs.					
		All residential units and kitchen areas are to be provided with adequate space for both recycling and refuse.					
		Adequate and easily accessible storage is to be provided at ground floor level, where both recyclable and non-recyclable waste can be stored.					
		Implemented in design					
		To be considered					
		Future considerations					

Appendix A3 – Bill of Materials (Draft)

Layer	Element	Material quantity (kg)	Material intensity (kg/m ² Gross Internal Area	Recycled content (% by value)	Source of information
Substructure	TBC	TBC	TBC	Min. 20% ambition	
Structure	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
Shell/Skin/ Space	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
Roof	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
Internals	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	
	TBC	TBC	TBC	Min. 20% ambition	