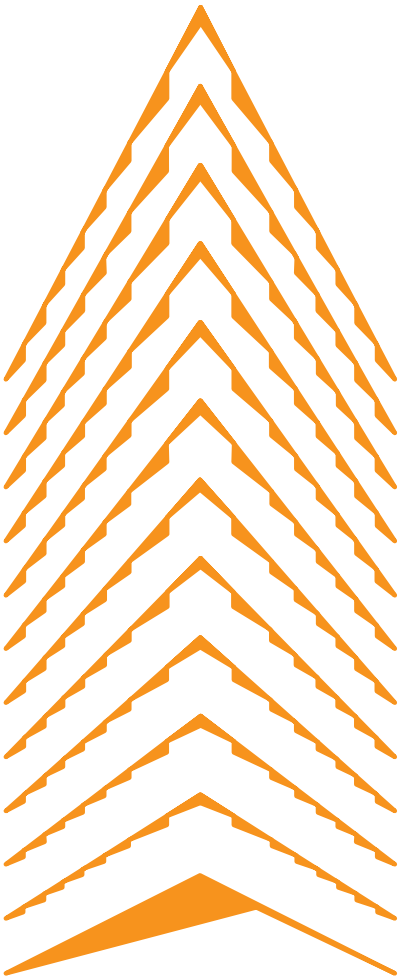

Kensington Forum

QUEENSGATE INVESTMENTS Rockwell

Kensington Forum Hotel – London

CIRCULAR ECONOMY STATEMENT | JULY 2020

CIRCULAR ECONOMY STATEMENT

Kensington Forum Hotel

Produced by XCO2 for Rockwell

July 2020

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Date	17/07/2020	30/07/2020				
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EXECUTIVE SUMMARY

This section provides a non-technical summary of the circular economy approach and commitments for the proposed scheme, Kensington Forum Hotel.

DESCRIPTION OF THE DEVELOPMENT

The proposed development is a mixed-use building, located in the South Kensington area of the Royal Borough of Kensington and Chelsea (RBKC).

The site currently comprises an existing hotel structure (Holiday Inn Hotel) that will be demolished prior to construction of a new 749 bed hotel, 350 serviced apartments and 62 residential units.

The new development will comprise a double depth basement, ground and first floors dedicated to leisure activities, restauration, equipment and parking, and has a total GIA of 78,810 m^2.

SUMMARY OF CIRCULAR ECONOMY COMMITMENTS

CONSERVE RESOURCES

The proposed scheme seeks to ensure that material and resource use is minimised as far as possible, in line with the first principle of circular economy: conserve resources and source ethically. Focus has been given to minimising the quantities of materials and other resources used, as well as ensuring materials will be sourced responsibly during construction.

ELIMINATE WASTE

The proposed scheme seeks to address this second core circular economy principle by ensuring the design is flexible and adaptable, thereby increasing the building's lifespan and minimising maintenance, and by aiming to reduce construction, demolition and excavation waste arisings.

MANAGE WASTE SUSTAINABLY

The proposed development will seek to implement the third core principle of circular economy by carefully managing demolition, construction and municipal waste to maximise recycling and reuse and minimise waste sent to landfill.

IMPLEMENTATION APPROACH

This report will be reviewed throughout all project stages, alongside the following corresponding reports:

- Material Efficiency Report
- Functional Adaptability Study
- Climate Change Adaptation Strategy
- Material Durability Report
- Material Efficiency Report
- Sustainable Procurement Plan
- Site Waste Management Plan

Progress will be reported against each of the key circular economy commitments.

INTRODUCTION

This section introduces the key principles that a circular built environment should adopt; provides a brief description of the development; summarises the process followed to produce this document; and outlines the project's circular economy aspirations.

This report has been produced to address Policy D3 'Optimising site capacity through the design led approach' and Policy SI7 'Reducing waste and supporting the Circular Economy', within the emerging Intend to Publish London Plan. In doing so it also address the local planning policies relating to circular economy. A full review of the relevant planning policy framework can be found within Appendix A.

Circular Economy Statements are required to inform early decisions and must be submitted at the following stages:

1. Draft Circular Economy Statement: submitted at outline/pre-application stage;
2. Detailed Circular Economy Statement: submitted at full planning application stage; and
3. Circular Economy Statement: submitted at post-completion stage.

CIRCULAR ECONOMY PRINCIPLES

Transitioning to a circular economy offers significant opportunities for meeting the needs of a growing population and reducing the adverse impacts on the environment, by re-thinking the way that we design our homes and buildings and consume resources.[1]

A circular economy is a new economic model that stands in opposition to the current linear economy. Within a linear economy materials are mined, manufactured used and thrown away. A circular economy seeks to keep resources in use and retain their value (Figure 1).

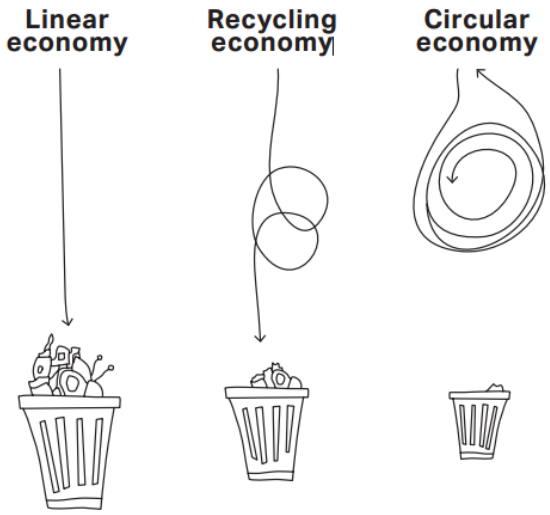

Figure 1: Linear, recycling and circular economic models (Circular Flanders)

The built environment sector is the largest user of materials and generator of waste in the economy. In London alone the sector accounts for 54% of waste and consumes 400 million tonnes of material each year. There are clear environmental benefits to adopting a circular economy approach in the building environment, including sending less waste to landfill and reducing the use of virgin materials. However, there are also social and economic benefits.

[1] 'Design for a Circular Economy: Primer' (Greater London Authority)

By implementing circular economy principles developers can protect their business from against the rising costs of materials and waste disposal.

LWARB estimates that if circular economy principles are successfully adopted it could contribute between £3 billion and 3% billion in growth for London by 2036 and create as many as 12,000 new jobs.[1]

This report is structured in accordance with the following core guiding principles and commitments, as identified in the GLA's 'Circular Economy Statement: Guidance (pre-consultation draft)':

1. Conserve resources, increase efficiency and source sustainably
    - Minimise the quantities of materials used
    - Minimise the quantities of other resource's use
    - Specify and source materials and other resource's 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
3. Manage waste sustainably and at the highest value
    - Manage demolition waste
    - Mange excavation waste
    - Manage construction waste
    - Manage municipal waste

These core principles circular economy are compared against current practice in Figure 2.

DESCRIPTION OF THE DEVELOPMENT

The proposed development is a mixed-use building, located in the South Kensington area of the Royal Borough of Kensington and Chelsea, bounded by Cromwell Road to the north, Ashburn Place to the east, Courtfield Road to the south and Ashburn Gardens to the west.

The site currently comprises an existing hotel structure (Holiday Inn Hotel) that will be demolished prior to construction of a new 749 bed hotel, 350 serviced apartments and 62 residential units.

The new development will comprise a double depth basement, ground and first floors dedicated to leisure activities, restauration, equipment and parking, and has a total GIA of 78,810 m^2.

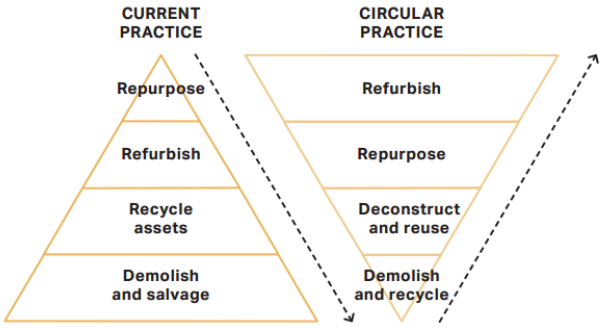

Figure 2: Current practice compared to circular practice (GLA)

METHOD STATEMENT

This project has a lengthy planning history, stretching back to 2017/2018. It is acknowledged that when the supporting planning documents were initially prepared there was no requirement to produce and submit a Circular Economy Statement. This document has, therefore, been prepared subsequently to summarise and highlight the development's aims, ambitions and objectives with regards to circular economy.

As outlined in the accompanying Sustainability Statement the development is targeting a BREEAM 'Excellent' rating. This includes an emphasis on targeting credits within the Materials and Waste sections. Workshops were carried out with the project team in the first half of 2018, prior to completion of the BREEAM preliminary assessment. At this stage the GLA had not published their guidance on carrying out Circular Economy Statements, so these discussions were instead guided by the circular economy principles within BREEAM. This approach is summarised in the following section 'Circular Economy Aspirations'.

CIRCULAR ECONOMY ASPIRATIONS

The project team interpret circular economy in the following way:

- Source materials responsibly
- Design for durability and resilience
- Implement measures to optimise material use
- Carry out a pre-demolition waste audit
- Implement waste minimisation targets during demolition and construction
- Ensure there is sufficient space for storage and segregation of operational waste
- Design a flexible and adaptable building

STRATEGIC APPROACH

The project team met early in the design process to discuss the sustainability goals and aspirations for the project; the outcomes from these discussions can be found in the accompanying Sustainability Statement.

This process included a consideration of the overrating circular economy strategy for the project, as guided by the relevant section of BREEAM[2].

The Strategic Approach Table can be found in Appendix B.

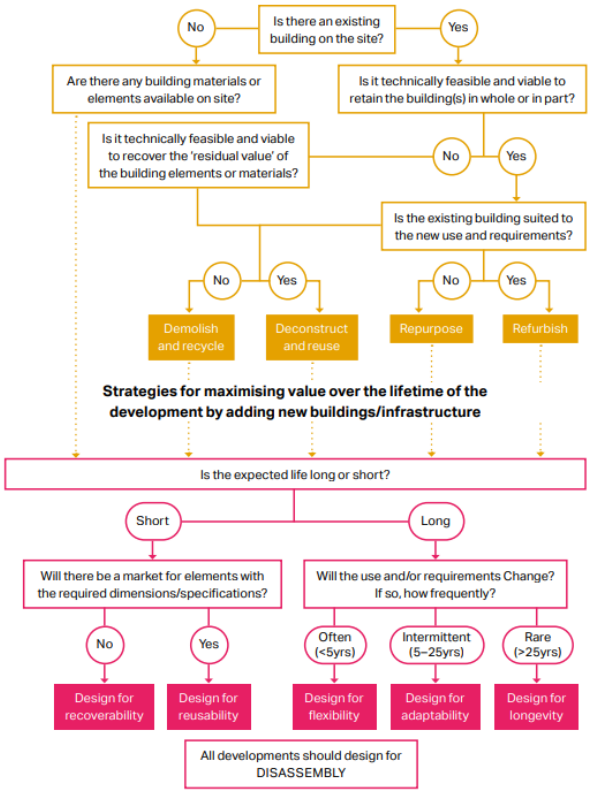

Figure 3: Circular Economy Decision Tree (GLA Circular Economy Primer)

[2] As noted in the 'Method Statement' section of this report at the time of the initial project planning and

CIRCULAR ECONOMY STRATEGY

This section provides a detailed description of how circular economy principles will be implemented; this includes specific measures to conserve resources, eliminate waste and manage waste sustainably.

DESIGN TO CONSERVE RESOURCES

The proposed scheme seeks to ensure that material and resource use is minimised as far as possible, in line with the first principle of circular economy: conserve resources and source ethically. As shown below, this focus has been given to minimising the quantities of materials and other resources used, as well as ensuring materials will be sourced responsibly during construction.

MINIMISING QUANTITIES OF MATERIALS

In this instance it is not possible to refurbish the existing building as it is not fit for purpose. However, some of the existing piles will be re-used to support the new raft foundation; the existing basement walls will also be re-used, which will reduce the quantity of new concrete that will ned to be brought to site.

Demolition will take place in two phases: soft strip and structural demolition[3]. Soft strop is the removal of non-structural elements; including the safe removal of asbestos within the existing building by a specialist contractor. Structural demolition includes removal of the concrete frame, and masonry and glass cladding.

Measures to minimise demolition waste are outlined in more detail in the 'Design to Eliminate Waste' section of this report.

It is not anticipated that soft strip demolition works will yield any waste that can be salvaged and reused in the new building. The structural demolition works will, however, create waste streams that can be reused within the proposed scheme; thereby, reducing the quantities of new materials brought to site. For example, concrete from the existing building's frame will be crushed, grated and stockpiled on site prior to being reused in constructing a piling mat and berm. This will reduce the amount of new concrete that needs to be brought to site.

The proposed scheme will be design to utilise materials in an efficient manner; this process will be guided by a Material Efficiency Report, which will be produced following planning submission for the development's BREEAM assessment.

Material efficiency measures seek to optimise the use of materials within building design, procurement, construction, maintenance and end of life; and ultimately reduce the quantities of new materials used. BREEAM requirements state that this report is a live document that is updated at each stage of the project.

The proposed scheme will utilise the following measures to ensure materials are use efficiently and minimise the quantities of new materials brought to site:

- Design to standard materials dimensions
- Utilise materials with a high recycled content
- Participate in take-back schemes
- Rationalise structural design to reduce the volume of structural materials
- Avoid over specification
- Optimise foundation design
- Utilise pre-assembled / pre-fabricated elements and/or off-site manufacture

[3] Please refer to Chapter 5 of the Environmental Statement (Volume 1)

MINIMISING QUANTITIES OF OTHER RESOURCES

The proposed scheme is sited on brownfield land, thereby minimising disruption to the existing landscape.

The contractor will be required to set targets for energy and water used during construction and put in place measures to minimise consumption of these resources; these will include:

- Use of alternatives to diesel / petrol powered equipment where possible;
- The incorporation of sources of renewable energy, to offset the use of main utilities;
- Selection and specification of energy efficient plant and equipment wherever viable; and
- Implementation of staff based initiatives such as turning off plant and equipment when not in use, both onsite and within site offices.

With regards to building operation, the scheme has been design in line with the GLA's energy hierarchy in order to minimise operational energy use and carbon emissions. The scheme has adopted a fabric first approach to minimise energy demand, including a highly efficient thermal envelope. Further details can be found in the accompanying Energy Strategy.

As stated in the Sustainably Statement, the scheme has been designed to reduce water consumption to less than 105 litres per person per day. Further water-saving measure include installation of pulsed water meters and a building-wide water leak detection system.

RESPONSIBLE SOURCING

Anticipated construction material quantities are shown in Table 1. As part of the BREEAM assessment the contractor will be required to source materials in accordance with a Sustainable Procurement Plan. BREEAM requirements state that this must guide procurement throughout the project and include the following:

- Identification of risks and opportunities against a broad range of social, environmental and economic issues.
- Aims, objectives and targets to guide sustainable procurement activities.
- A strategic assessment of sustainably sourced materials available locally and nationally.
- A policy to procure materials locally where possible.
- Procedures to check and verify that the sustainable procurement plan is being implemented and adhered to (for example setting out measurement criteria, methodology and performance indicators to assess progress and demonstrate success).

As such, there will be a preference to source materials locally where feasible. Other materials will be sourced in accordance with the following guidance:

- 100% of timber will be FSC or PEFC certified.
- 100% concrete will be BES 6001 certified (Responsible Sourcing of Construction Products).
- Where possible steel will be sourced from suppliers rated under the CARES Sustainable Constructional Steel Scheme.
- Other major construction materials will be certified under an Environmental Management System (EMS) such as ISO 14001.

Table 1: Estimates of key construction material quantities[4]

Material	Approx. Quantity
Bulk Excavation	41,200 m^3
Concrete (sub-structure)	16,380 m^3
Concrete (super-structure)	24,430 m^3
Steel reinforcement	8,150 T
Cladding	27,680 m^2
Glazing	6,400 m^2
Roof finishes	4,300 m^2
Partitioning (gypsum board)	97,500 boards
Ceilings	21,450 m^2

[4] Source: Chapter 5 of Chapter 5 of the Environmental Statement (Volume 1)

DESIGN TO ELIMINATE WASTE

The proposed scheme seeks to address this second core circular economy principle by ensuring the design is flexible and adaptable, thereby increasing the building's lifespan and minimising maintenance, and by aiming to reduce construction, demolition and excavation waste arisings.

DESIGN FOR LONGEVITY, ADAPTABILITY/FLEXIBILITY AND REUSABILITY/RECOVERABILITY

As part of the BREEAM assessment two key documents pertaining to flexibility and adaptability will be produced:

1. Functional Adaptability Strategy
2. Climate Change Adaptation Strategy

As a hotel-led development adaptability will be incorporated in a slightly different manner to a more speculative development typology (for example a shell and core office). The proposed scheme has been designed from the outset to serve a single purpose; however, this does not mean that functional adaptability has not been considered.

The building has been designed to facilitate major refurbishment, including façade replacement without compromising the structural design.

It will be possible to remove and replace all major items of plant without needed to demolish sections of wall or floor. Lifting beams and hoists will be incorporated into the design where necessary. Further information can be found within the Plant Replacement Strategy.

The structural design of the hotel will allow for reconfiguration of the internal environment to accommodate changes in working practices and business models; for example, by allowing front of house areas to be reconfirmed, and multiple smaller rooms to be combined into larger rooms.

The design of the services within the proposed scheme considers accessibility to local services, such as local power and data infrastructure. This will allow for ease of maintenance as well as the potential to upgrade these services more easily at a future date if required.

The project architect has completed a Material Durability Report, which outlines measures taken to ensure that vulnerable parts of the building are protected from damage. This includes measures to protect against the effects of high pedestrian traffic; internal vehicular/trolley movement and potential vehicular collision with the external building façade. This report also outlines appropriate design and specification measures to limit material degradation due to environmental factors; thereby improving the longevity of materials used in the building façade and roof, as well as external hard landscaping.

Furthermore, a systematic risk assessment will be carried out to identify and evaluate the impact of climate change on structural and fabric resilience. The aim of this study will be to ensure that building remains functional for as long as possible by mitigating risks posed by extreme weather conditions arising from future climate change.

DESIGN OUT CONSTRUCTION, DEMOLITION, EXCAVATION AND MUNICIPAL WASTE ARISING

Estimated quantities of demolition waste can be found in Table 2. As noted in the previous section ('Conserve Resources') it is anticipated that some of the concrete materials recovered from the demolition process will be crushed, graded and stockpiled on site, prior to reuse in the piling mat and berm. Furthermore, some existing piles will be retained and reused, along with the existing basement perimeter walls; thereby reducing demolition waste.

A Site Waste Management Plan (SWMP) will be prepared for the project, in accordance with SWMP Regulations and BREEAM requirements. Estimated construction waste quantities can be found in Table 3.

Table 2: Estimates of key demolition quantities[5]

Materials	Materials Arising From	Approximate Quantity
Crushed concrete	Foundations, sub-structure and super-structure	41,500 T
Crushed masonry	Internal and external walls	750 T
Reinforcing steel	Concrete frame	1,500 T
Glass	Windows	3,100 m^3
Sundry metalwork	Soft strip services, ceiling supports and studding	6,800 m^3
Plasterboard	Internal walls	4,850 m^3
Insulation and fibrous board	Ceilings and insulation	5,700 m^3
Carpets	Floors	1,450 m^3
Timber	Internal fixtures and studding	4,300 m^3

The principle contractor will follow the UK Government's 'Waste Management Plan for England 2013', the 'Mayor's Municipal Waste Management Strategy - Rethinking Rubbish in London, and the 'Mayor's Business Waste Management Strategy' in order to reduce the amount of waste generated.

The following measures will be investigated to facilitate the minimisation of waste generation:

- Agreements with material suppliers to reduce the amount of packaging, to use reusable 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 would increase 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;
- 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 offsite waste segregation facility and re-sale for direct re-use or re-processing).

Table 3: Predicted construction waste arisings[5]

Use	Floor area (m^2)	EPI (m^3 / 100 m^2)	Waste Arising (m^3)
Residential (C3)	5,089	18.1	921
Hotel (including serviced apartments)	69,593	17.4	12,109
Retail (food/bev)	1,837	20.9	384
Total			**13,414**

[5] Source: Chapter 5 of Chapter 5 of the Environmental Statement (Volume 1)

MANAGE WASTE SUSTAINABLY

The proposed development will seek to implement the third core principle of circular economy by carefully managing demolition, construction and municipal waste to maximise recycling and reuse and minimise waste sent to landfill.

DEMOLITION AND CONSTRUCTION WASTE

In order to reduce potential risks throughout the demolition and construction phases of the proposed development, the following measures will be implemented:

- Skips will be colour coded and signposted to reduce risk of cross contamination;
- Skips will be covered to prevent dust and debris blowing about the site and immediate environment;
- Burning of waste or unwanted materials will not be permitted on-site;
- All potentially hazardous materials will be properly sealed and securely stored when not used;
- Food waste from the welfare facilities on-site will be suitably packaged and stored for collection by the authorities to reduce the risk of infestation by pests or vermin. Where there is a local infestation then the local environmental health officer will be consulted about the action to be taken; and
- All hazardous materials, including chemicals, cleaning agents, solvents and solvent containing products will be properly sealed in sealed containers at the end of each day prior to storage in appropriately protected and bunded storage areas.

It is anticipated that at least 96% of demolition waste arisings will be reused and recycled following the various Demolition Protocols, Waste Resource Action Programme and the waste hierarchy[6].

The demolition will generate steel, aluminium and copper from the building's framing, cladding, window frames and pipework. 100% of this will be recovered for recycling.

In accordance with government targets, the demolition and construction contractor will be required to maximise the proportion of recycled materials, including reclaimed aggregates.

The disposal of all waste or other materials removed from the site will be in accordance with the requirements of the Environment Agency (EA), Control of Pollution Act 1974 (COPA), Environment Act 1995, Special Waste Regulations 1996 and the Duty of Care Regulations 2003. Where materials cannot be recycled or re-used on site, the Principal Contractor will identify opportunities for potential re-use of materials off-site.

Prior to commencing the soft strip works advanced building surveys will be carried out. These will include a full Refurbishment and Demolition (R&D) survey of materials containing asbestos, in accordance with the Hazardous Waste Regulations and the Control of Asbestos Regulations.

Once the asbestos removal work has been completed the main soft strip of all fixtures and fittings within the existing building will be carried out. Soft strip demolition works will be followed by structural demolition.

Topsoil from excavation activities, will be given special attention due to its high value. No topsoil will be sent to landfill.

Although the vast majority of construction and demolition waste will be recycled, some waste will be sent to landfill, the majority of this will be hazardous waste (asbestos). The applicant has contacted local landfill facilities and can confirm that they have capacity to receive this waste.

[6] Demolition Report (Wayne Bagnall Ltd)

EXCAVATION WASTE

Excavation waste will be managed by the relevant sub-contractor. As the project includes increasing the depth of the basement it is not possible to design out excavation waste. It is estimated that the project will result in 41,200 cubic metres of excavation waste; it is anticipated that at least 95% this will be recycled. No excavation waste will be sent to landfill.

MUNICIPAL WASTE

Full details of proposed management strategy for operational waste can be found in the accompanying Waste Management Strategy. The strategies for the hotel and serviced apartments, and residential units are summarised below.

HOTEL AND SERVICED APARTMENTS

The waste generational model for the hotel has been based on the 4/5 star hotel waste metric within BS 5906:2005. Estimated weekly waste arising is shown in Table 4[7].

Table 4: Estimated weekly waste arising

Use Classification	Quantum	Waste Generation (litres/week)
4/5 Star Hotel	749 keys	262,150
Ballroom	1,500 covers	56,250
Food and beverage	1,783 m^2	11,144
Total		**329,544**

For the serviced apartments one Eurobin will be provided for every 18 residents.

It is assumed that commercial waste will be collected on a weekly basis by a commercial waste collection contractor (as serviced apartments do no pay council tax the waste stream will not be managed by RBKC).

The hotel waste strategy is summarised as follows:

1. Hotel operator to provide interim waste storage areas within their premises. These will be sufficiently size to allow for segregation of refuse and recycling.
2. Hotel operator's FM team to regularly collect waste from interim stores and transfer it to the main commercial waste stores (at basement level 2), where it will be segregated into appropriated labelled bins.
3. The main commercial waste stores will house commercial waste generated by both the hotel and the serviced apartments.

The proposed waste strategy for the serviced apartments is as follows:

1. All serviced apartments include a segregated waste bin, fixed within an appropriate kitchen unit. These bins will accommodate 30 litres of recyclable waste and 19 litres of general refuse.
2. The hotel operator's FM team will collect waste directly form the serviced apartments on a daily basis and transport it to the main commercial waste stores at basement level 2, where it will stored in appropriately labelled bins.

Table 5 summarises the total number of bins to be provided, based on the strategy outlined above.

Table 5: Bin provisions (weekly collection)

Use Classification	Volume (litres)	No. 1,100 litre Eurobins
Hotel	329,544	300
Serviced apartments	n/a	42
Total		**342**

RESIDENTIAL

Based on the proposed occupation schedule it has been estimated that the residential units will require 5 Eurobins for storage of general refuse and an

[7] Source: Waste Management Strategy

additional 8 Eurobins for storage of recyclables (all Eurobins are 1,100 litre capacity).

The proposed waste management strategy for the residential element of the scheme is as follows:

1. Each residential property to be provided with a segregated waste bin, which will be fixed into an appropriate kitchen unit. This will have a capacity of 30 litres for recyclable waste and 198 litres for storage of refuse.
2. The residential bin store will be provided at basement level 1, within 30m horizontal walking distance of each dwelling. Residents will be required to transport their own waste from their apartments directly to the main residential waste store, which will be designed in accordance with BS 5906:2005 standards.
3. The main residential waste store will be managed by the on-sire FM team.
4. On nominated waste collection days, the on-site FM team will relocate bins from the main residential waste store to the presentation area, which is located at the rear of the loading bays within the service yard.
5. RBKC's waste collection contractor will transport bins from the waste presentation ware to the refuse collection vehicle.

END-OF-LIFE STRATEGY

This section describes the strategy for how the proposed scheme's design and construction will reduce material demands and enable building materials, components and products to be disassembled and reused at the end of their useful life.

The proposed development has been designed for repurpose and independent replacement of individual elements, based on their design life periods.

The building's structure has been designed with an indicative design life of 50 years (based on current British Standards).

The building's envelope has been designed for a minimum 60 years for the finished primary cladding system and 30 years for secondary components.

Components and products will be designed and selected to allow for disassembly and reuse at the end of their useful life. Building Information will be stored to facilitate end of life strategy, disassembly, future reuse, waste avoidance, and waste reduction.

The key challenge to implementing design for disassembly and reuse relates to the hotel operator's specific requirements for the fit out. This will be considered and addressed as the project progresses.

APPENDIX A: POLICY FRAMEWORK

REGIONAL PLANNING POLICY (EMERGING INTEND TO PUBLISH LONDON PLAN)

The emerging Intend to Publish London Plan has introduced several new policy requirements that consider circular economy principles.

Policy D3 'Optimising site capacity through the design led approach' and Policy SI7 'Reducing waste and supporting the Circular Economy' set clear policy objectives to:

- Create high quality buildings that consider practicality of use, flexibility, safety and building lifespan;
- Encourage the use of appropriate construction methods and robust materials;
- Take into account the principles of the circular economy and aim for high sustainability standards;
- Ensure that products and materials are retained at their highest value for as long as possible;
- Improve resource efficiency;
- Minimise waste (both during construction and building operation); and
- Meet or exceed the following targets:
    - Zero biodegradable/recyclable waste to landfill by 2026;
    - Municipal waste recycling target of 65% by 2030;
    - Reuse/recycling or recovery of 95% of construction and demolition waste;
    - The beneficial use of at least 95 per cent of excavation waste.

Policy SI7 requires developments that are referable to the Mayor of London to submit a Circular Economy Statement as part of a planning application; it states:

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

- *How all materials arising from demolition and remediation works will be re-used and/or recycled;*
- *How the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life;*
- *Opportunities for managing as much waste as possible on site;*
- *Adequate and easily accessible storage space and collection systems to support recycling and re-use;*
- *How much waste the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy;*
- *How performance will be monitored and reported.*

Policy SI7 encourages London boroughs to set their own lower local thresholds for Circular Economy Statements.

Circular Economy Statements must adhere to the minimum content requirements stated in 'Circular Economy Statement: Guidance Pre-Consultation Draft' in order to be considered 'compliant'.

Circular Economy Statements will be checked for:

- Completeness
- Technical validity
- Level of ambition

Furthermore, Policy SI7 states that referable applications must demonstrate how performance of the Circular Economy Statement will be monitored and reported, including confirmation of:

- What actually happened
- How this is different from what was planned
- What it differed and what the key learnings were

LOCAL PLANNING POLICY (ROYAL BOROUGH OF KENSINGTON AND CHELSEA)

The Royal Borough of Kensington and Chelsea (RBKC) Local Plan (September 2019) contains one reference to circular economy; paragraph 24.3.36 states:

> *The Waste Management Plan for England confirms a 'waste hierarchy' setting out how waste should be dealt with (prevention, preparing for re-use, recycling, other recovery and disposal) and confirms the importance of the National Planning Policy for Waste (NPPW). The evidence on waste management shows that we need to examine new ways of dealing with waste in the borough including promoting the principles of a circular economy (i.e reduce, reuse and recycle). Moreover, the Mayor of London requires that the borough meets its waste apportionment figure which is set out in the London Plan.*

The waste hierarchy referenced above, and reproduced in Figure 4, is closely allied to the general principles of circular economy. It is therefore considered to be a local planning policy requirement for development to demonstrate the following:

1. Use less materials in design and manufacture and keep products for longer;
2. Prepare for re-use;
3. Recycle and compost;
4. Implement other strategies for waste recovery (including energy recovery);
5. As a last resort, dispose either in landfill or via incineration without energy recover.

Furthermore RBKC Policy CE3 'Waste' requires developments to implement the following:

- All new development to provide innovative well designed, functional and accessible refuse and recycling storage space which allows for ease of collection in all developments;
- Applicants for major developments to prepare and implement Site Waste Management Plans for demolition, excavation and construction waste.

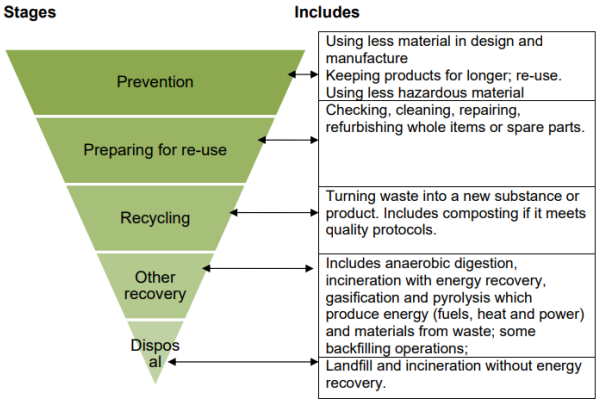

Figure 4: The waste hierarchy

UK GREEN BUILDING COUNCIL GUIDANCE

Although not planning policy, it is useful to consider the UK Green Building Council's (UKGBC) report on circular economy: 'Circular economy guidance for construction clients: how to practically apply circular economy principles at the project fief stage'. This sets out the following principles, which complement the regional and local planning policies:

- Reuse
  - Reuse the existing asset
  - Recover materials and products on site or from another site
  - Share materials or products for onward reuse
- Design buildings for optimisation
  - Design for longevity
  - Design for flexibility
  - Design for adaptability
  - Design for assembly, disassembly and recoverability
- Standardisation or modularisation
- Servitisation and leasing
- Design and construct responsibly
  - Use low impact new materials
  - Use recycled content or secondary material
  - Design out waste
  - Reduce construction impacts

APPENDIX B: STRATEGIC APPROACH TABLE

Aspect	Phase / Building / Area	Steering Approach	Explanation	Targets	Supporting Analysis / Studies / Surveys / Audits
New development	Whole development	Sustainable sourcing	Contractor to operate a Sustainable Procurement Plan. Materials to be sustainable sourced. Local suppliers to be preferred where possible to reduce material transport distances.	100% FSC/PEFC certified timber 100% concrete BES 6001 certified (Responsible Sourcing of Construction Products) Where possible steel to be sourced from suppliers rated under the CARES Sustainable Constructional Steel Scheme Other materials to be certified under an Environmental Management System (EMS) such as ISO 14001	BREEAM Pre-Assessment Sustainable Procurement Policy
		Manage construction waste	Contractor to record total construction waste generated and how this waste will be disposed of. Measures to be implemented to manage and reduce construction waste.	≤7.5m^3 construction waste (excluding excavation waste) / 100m^2 GIA ≥80% construction waste diverted from landfill	Environmental Statement (Chapter 5: Demolition and Construction) BREEAM Pre-Assessment
		Design for durability	Durable, long-lasting materials will be utilised.	Durable external materials to be used to limit effects of environmental degradation. Measures to be implemented to protect finishes internally and externally.	BREEAM Pre-Assessment Material Durability Report
		Optimise material use	Materials to be used efficiently to reduce wastage on site.		BREEAM Pre-Assessment Material Efficiency Report
		Functional adaptability	Design for adaptability and flexibility - to increase building lifespan.		BREEAM Pre-Assessment Functional Adaptability Strategy
		Reuse and recycling at end of life	Design for disassembly and deconstruction – to ensure materials are retained in a high value state.		Environmental Statement (Chapter 5: Demolition and Construction)

Aspect	Phase / Building / Area	Steering Approach	Explanation	Targets	Supporting Analysis / Studies / Surveys / Audits
Existing site	Existing hotel building and landscaping	Maximise recovery, reuse and recycling of demolition waste	Concrete will be crushed, grated and stockpiled on site prior to being reused in constructing a piling mat and berm. Metal will be separated on site prior to removal and recycling.	≥96% of demolition waste to be reused and/or recycled. Reuse some existing piling and basement retaining wall.	Demolition Report (Wayne Bagnall Consulting) Environmental Statement (Chapter 5: Demolition and Construction) Pre-demolition waste audit Site Waste Management Plan
Municipal waste during operation	Whole development	Storage and segregation of operational waste	Waste from hotel and serviced apartments to be managed separately from residential waste streams. On-site bin store to accommodate sufficient storage for both recyclable and landfill waste.		Waste Management Strategy BREEAM Pre-Assessment

APPENDIX C: PRE-DEMOLITION AUDIT

Extract from Chapter 5 of Environment Statement (Volume 1):

Demolition Works: Soft Strip

- Soft strip is the removal of all non-structural elements so far as is reasonably practicable e.g. furniture, floor coverings, fixtures, fittings, non-masonry walls, partitions suspended ceilings, windows etc and will include the safe removal of asbestos within the existing building by a specialist contractor. Advanced building surveys will be carried out as part of the pre-demolition process following closure of the hotel, including a full Refurbishment & Demolition (R&D) survey of materials containing asbestos, in accordance with the Hazardous Waste Regulations 2005 (as amended)[4] and the Control of Asbestos Regulations 2012[5].
- Once an approved asbestos contractor has been appointed and the asbestos report has been issued the method of working shall be submitted to the HSE (ASB5 notification).
- Prior to any asbestos removal works commencing an advanced soft strip operation will proceed to clear the existing building and make it safe and expose, where safe to do so, the existing asbestos containing materials. The first operation will be to isolate any live services to working zones.
- Once an initial soft strip, asbestos removal work, any other hazardous materials have been removed and any live services terminated and confirmed as such, the main soft strip of all fixtures and fittings within the existing structure will be carried out. Vigilance regarding the structural integrity of the building will be maintained at all times by operatives and site staff during the soft stripping works as parts of the building will be exposed for the first time.
- Working from the highest level downwards soft stripping will be carried out by trained operatives using hand-held tools and small machines such as Brokk remote controlled demolition robots fitted with appropriate shear and grapple attachments in a continuous stripping exercise. The works will be accessed from the existing floor levels or from aluminium towers.
- Combustible materials will be removed first, before ceiling hangers, trunking, conduit, pipework and other non-structural metalwork are cut out using oxygen/propane burning equipment, angle grinders or mechanical dismantling. A 'Hot-Works' permit to work system will be enforced when any works of this nature are undertaken, and fire extinguishers will be prominent. Hot works will cease 2 hours before the end of a working shift and the area thoroughly checked prior to breaks or to leaving site. Oxygen and Propane bottles will be stored upright in a lockable cage.
- By regularly removing the accumulated debris, the potential fire risk, that loose combustible material imposes, is minimised / removed. Rubbish arising from the soft strip will be dropped to ground level using the platform hoists, purpose made chutes inside the building or de-planted lift shafts. The material will then be segregated into recyclable streams and deposited into skips / container lorries within the loading areas for removal from site.

Structural Demolition

- The existing building comprises a concrete framed construction with concrete, masonry and glass cladding. Lower floors include a three-storey podium and “nibs”, creating a cruciform shape up to eight floors high. The

frame incorporates post tensioned elements which will be the subject of intrusive survey and detailed planning to ensure safe methods of de-tensioning are employed during demolition.

- While the soft strip progresses, the entire building will be encapsulated in traditional scaffolding with Monarflex, or similar, fire rated sheeting to the outside face and multiple levels of protective fan to afford protection to public and operatives below. The scaffold will be phased and designed to allow access for long reach excavators to the lower levels of the building.
- The encapsulation assists in the prevention of dust and noise escape to the surrounding area.
- Long reach machines fitted with hydraulic breakers and appropriate sheer and grapple attachments will be used to demolish the podium and cruciform nibs to clear access to the main tower which will be demolished using progressive floor-by-floor machine demolition.
- During the soft strip phase, trial holes will be broken out in the roof and upper floor slabs of the building, to investigate floor spans and type of construction, including post tensioned beams. The existing drawings and any previous trial hole information will be used in conjunction with these findings.
- Load testing will be carried out and the permissible floor loadings ascertained. Machine sizes and back propping requirements will then be determined. The condition of the structure and construction techniques will be investigated to provide as much information prior to demolition commencing.
- The immediate area around the demolition area will be barriered off and warning signs erected. Drop zone(s) within the demolition area will be established and further demarcation established. The staircases directly below the working level will be closed off and lower levels will be temporarily decked out with timber. Access to the upper levels for operatives and tools etc. will be via the scaffold / hoist.
- Upper floors will be back propped prior to loading with machines. All plant and equipment required for the floor by floor structural demolition will be lifted by tower crane on to the roof. Debris will be broken down onto the floor slab below by two medium sized excavators, processed and separated to increase the efficiency of debris removal.
- Where possible the structure would be broken out, removed piecemeal in large sections and lowered to the ground by the Tower Crane allowing larger excavators to process these at ground level by pulverising these and therefore minimising the amount of percussive breaking at higher levels.
- Smaller debris will be cleared using skid steer Bobcat or similar and deposited loaded to skips for lowering to ground by crane.
- The external concrete / brickwork will be carefully demolished into the site using the 360° excavators. The steelworks will be progressively exposed and severed using oxygen / propane burning equipment. The column will be carefully folded onto the slab.
- The final 360° excavator will demolish the penultimate structural bay prior to lifting down to the slab below. The final bay will be broken out from the floor below.

- The scaffold to the external elevations will be struck as the works proceed with the scaffold always being one lift above demolition level at all times.
- Careful consideration will be given to the stability of the building at all times. Any load bearing walls will be identified prior to demolition commencing to ensure that they are maintained until structurally redundant.
- Dust emissions will be controlled at the working face and loading away area by a fine water spray. The quantity of water emitted by the sprays will be regulated and controlled to prevent any flooding at ground floor level.
- Throughout the demolition process noise levels will be controlled using Best Practicable Means and by employing the quietest available machinery and methods It is anticipated that some of the concrete materials recovered from the demolition process will be crushed, graded and stockpiled on site, and then ultimately reused on site, in constructing a piling mat and berm. An on-site crusher will be used for this purpose.
- Various utilities and services exist on the site, including the UKPN substation. To eliminate the risk associated with the current live services, existing services will be identified and terminated prior to demolition commencing. Temporary services will be installed in advance of these terminations as necessary. All new cables and services will be clearly marked, located and identified.

Demolition Quantities

- Table 5.1 provides an estimate of the quantities of demolition material likely to be generated.

Estimates of Key Demolition Quantities

Materials	Materials Arising From	Approximate Quantity
Crushed Concrete	Foundations, substructure, and superstructure	41,500 Tonnes
Crushed Masonry	Internal and external walls	750 Tonnes
Reinforcing Steel	Concrete Frame	1,500 Tonnes
Glass	Windows	3,100 m^3
Sundry Metalwork	Soft strip services, ceiling supports and studding	6,800 m^3
Plasterboard	Internal walls	4,850 m^3
Insulation and fibrous board	Ceilings and insulation	5,700 m^3
Carpets	Floors	1,450 m^3
Timber	Internal fixtures and studding	4300 m^3

- All metal recovered from the demolition process will be separated and taken away for scrap to be recycled. It is anticipated that the demolition will generate steel, aluminium and copper from the building's framing, cladding, window frames and pipework. 100% of this will be recovered for recycling.
- There is no planned, long term period of demolition waste stockpiling on site. Waste will be stockpiled for as short a period as possible before removal for reuse, recycling or disposal. Material retained for use in the piling mat and temporary works will be covered and dampened to prevent dust escape.
- Further information on the proposed demolition waste management measures and other mitigation measures relating to for example demolition traffic routing, pedestrian routing, noise and dust control can be found in the 'Mitigation Measures and Management Controls' section below.

APPENDIX D: REPORTING FORMS

BILL OF MATERIALS					
Layer	**Element**	**Material quantity**	**Material intensity (kg/m² GIA)**	**Recycled content (%)**	**Source of information**
Structure	Sub-structure (foundations and piling - concrete)	16,380 m^3	TBC	TBC	Chapter 5 Environmental Statement Vol 1
	Super-structure (Superstructure, cores, stairs and shear walls - concrete)	24,430 m^3	TBC	TBC	Chapter 5 Environmental Statement Vol 1
	Steel reinforcement	8,150 tonnes	TBC	TBC	Chapter 5 Environmental Statement Vol 1
Shell/skin	Cladding	27,680 m^2	TBC	TBC	Chapter 5 Environmental Statement Vol 1
	Glazing	6,400 m^2	TBC	TBC	Chapter 5 Environmental Statement Vol 1
	Roof finishes	4,300 m^2	TBC	TBC	Chapter 5 Environmental Statement Vol 1
Space	Partitions	97,500 boards	TBC	TBC	Chapter 5 Environmental Statement Vol 1
	Suspended ceilings	21,450 m^2	TBC	TBC	Chapter 5 Environmental Statement Vol 1

RECYCLING AND WASTE REPORTING						
Category	**Total estimate**	**Of which...**				**Source of information**
	Quantity	**% reused or recycled on-site**	**% reused and recycled off-site**	**% not reused or recycled**		
				% to landfill	**% to other (e.g. incineration)**	
Excavation waste	41,200 m^3	TBC	TBC	TBC	TBC	Chapter 5 Environmental Statement Vol 1
Demolition waste	TBC	TBC	TBC	4%	n/a	Chapter 5 Environmental Statement Vol 1
Construction waste	13,414 m^3	TBC	TBC	TBC	TBC	Chapter 5 Environmental Statement Vol 1
	Tonnes per annum	**% reused on or off site**	**% recycled or composted on or off site**	**% not reused or recycled**		
				% to landfill	**% to other (e.g. incineration)**	
Municipal waste						Waste Management Strategy

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