DECEMBER 2023

Circular Economy Statement

Ariel Hotel, Hayes, UB3 5AH

Iceni Projects Limited on behalf of
R Ariel Hotel Opco Limited

December 2023

ICENI PROJECTS LIMITED ON BEHALF OF R ARIEL HOTEL OPCO LIMITED

Circular Economy Statement
ARIEL HOTEL, HAYES, UB3 5AH

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1. EXECUTIVE SUMMARY

1.1 Iceni Projects Ltd was commissioned by R Ariel Hotel Opco Limited to produce a Circular Economy Statement for the proposed redevelopment of the Ariel Hotel, Hayes, UB3 5AH.

1.2 This document outlines the circular economy strategic approach to be adopted by the proposed development and gives an overview of the interventions that will be applied to ensure circular economy principles are embedded within the design of the scheme over its lifetime.

1.3 This application proposes the redevelopment of the site to provide a two-storey upward extension to the existing hotel to deliver 113 new hotel rooms, in addition to the provision of a new 98-unit apart-hotel to the rear of the site, that would be operated in conjunction with the existing hotel.

1.4 The Circular Economy Statement for the proposed development has been prepared using the Greater London Authority's (GLA) London Plan Guidance Circular Economy Statements, published in March 2022. This approach is consistent with that required by the London Plan Policy SI7, and therefore represents best practice in meeting the required standards of resource efficiency and implementation of circular economy principles.

1.5 The proposed circular economy strategic approach is based upon the principles of a circular economy as defined within London Plan Policy SI7, on the basis that it is preferable retain materials at their highest value for as long as possible, before they are reused or recycled, and therefore leaving a minimum of residual waste.

1.6 A summary of the proposed circular economy strategic approach is provided below.

Table 1.1 Circular Economy Strategic Approach

Aspect	Phase / Building / Area	Steering approach	Proposed Intervention	Supporting analysis
Circular economy approach for the new development	Sub-structure	Minimise the quantities of materials used	The proposed development will seek to retain the existing hotel building, therefore minimising the need to deliver a substructure to this building. For the proposed aparthotel building, the use of lightweight materials and lean design principles will aid in reducing the quantities of materials required to deliver the substructure	Supported by Design & Access Statement (DAS), submitted plans and elevations, and Whole Life Carbon Assessment.
	Superstructure	Minimise the quantities of materials used	Using lean principles and DfMA approach and lightweight materials	
	Construction waste	Manage construction waste	Investigating available modern construction technologies and offsite pre-manufacture to avoid waste	
	Excavation waste	Manage excavation waste	Where possible, onsite use of non-hazardous excavation material	
Circular economy approach for the existing site	Demolition waste	Manage demolition waste	Where possible, on-site use of non-hazardous demolition material, however it is noted that limited demolition will be required due to the intended retaining of the existing hotel	
Circular economy approach for municipal waste during operation	All areas	Efficient management of operational waste	Appropriate refuse storage to enable recycling and practice waste management	

1.7 The key commitments to be made as part of the proposed development are as follows:

- Minimising the quantities of materials used through the implementation of lean design principles.
- Minimising the quantities of other resources used through the employment of energy efficiency measures and water efficient fittings.
- Specifying and sourcing materials responsibly, for example through the implementation of the principles of the BRE Green Guide to Specification.
- Designing for longevity and recovery through the use of durable materials that may be recovered, reused and recycled at the end of the development's lifetime.
- Minimising the generation of waste where possible, and maximising the recovery, reuse and recycling of waste materials arising

2. INTRODUCTION

2.1 Iceni Projects Ltd was commissioned by R Ariel Hotel Opco Limited to produce a Circular Economy Statement for the proposed redevelopment of the Ariel Hotel, Hayes, UB3 5AH.

Report Objective

2.2 This document details the circular economy strategic approach adopted by the proposed development and gives an overview of the interventions that will be applied to ensure circular economy principles are embedded within the design of the scheme over its lifetime. The Circular Economy Statement report headlines will provide a framework for the project team to operate consistently within circular economy guidelines set out by the Greater London Authority and the London Borough of Hillingdon.

2.3 The report is structured to meet these guidelines as follows:

- Section 3 discusses the planning context and policies which are relevant to circular economy principles;
- Section 4 presents the method statement, outlining the circular economy approach and interventions proposed;
- Section 5 presents the proposed circular economy goals and strategic approach;
- Section 6 presents the proposed circular economy commitments; and
- Section 7 summarises the development's design response.

Site and Surroundings

2.4 The application site (Appendix A1) is located within the London Borough of Hillingdon, to the north of London Heathrow Airport. The site is bounded by Marlborough Crescent to the north, the Courtyard by Marriot hotel to the east, and High Street Harlington (A437) to the west. The southern boundary of the site is formed by Bath Road, with London Heathrow Airport located beyond.

2.5 The application site itself currently comprises the Ariel Hotel, with associated car parking and hard surfaces. The surrounding area is characterised by a mix of uses, with residential dwellings located to the north, additional hotel uses to the east and west, and London Heathrow Airport and associated buildings and car parking to the south.

The Proposed Development

2.6 The description of development is as follows:

> *"Reconfiguration, alteration and extension of existing hotel (providing additional hotel rooms), together with erection of a new apart-hotel building on car park land to the north."*

2.7 The proposed extension to the existing Ariel Hotel comprises of the following number of hotel rooms on each floor.

Table 2.1 Hotel rooms within proposed refurbishment and extension of the Ariel Hotel

Hotel Room Size	Number
Ground Floor	12
Fourth Floor	51
Fifth Floor	50
Total	**113**

2.8 The proposed new-built apart-hotel will deliver the following mix of apart-hotel rooms:

Table 2.2 Apart-hotel mix

Apart-hotel Type	Number
1-bed	81
2-bed	17
Total	**98**

2.9 The images below show selected elevations and plans of the scheme, based on the information provided by Ackroyd Lowrie..

Figure 2.1 South elevation – Ariel Hotel

Figure 2.2 North elevation – Ariel Hotel

Figure 2.3 West elevation – Ariel Hotel

Figure 2.4 East elevation – Ariel Hotel

Figure 2.5 South elevation – Apart-hotel

Figure 2.6 North elevation – Apart-hotel

Figure 2.7 West (left) and east (right) elevations – Apart-hotel

Figure 2.8 Ground floor – Ariel Hotel

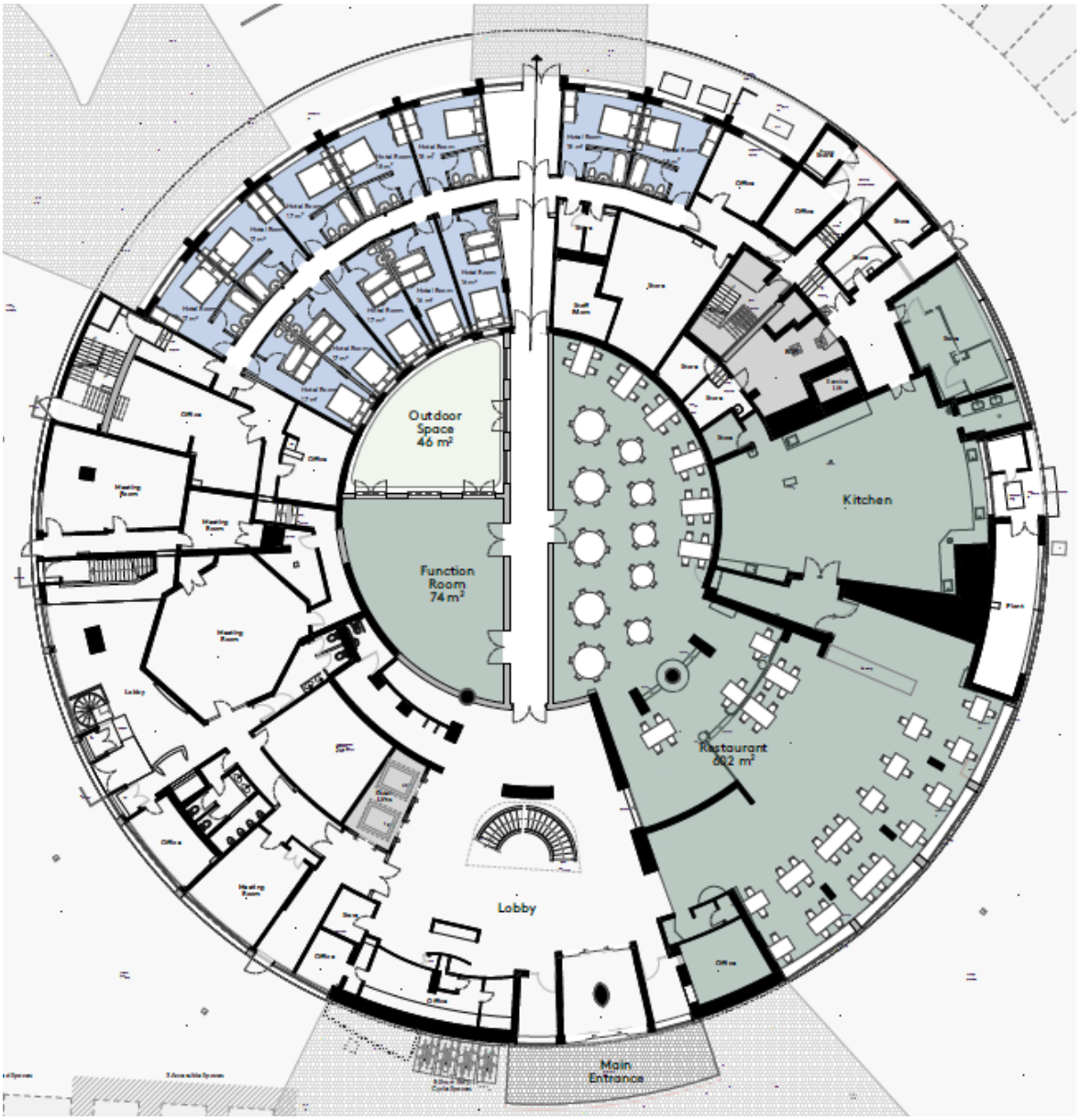


Figure 2.9 Fourth floor – Ariel Hotel

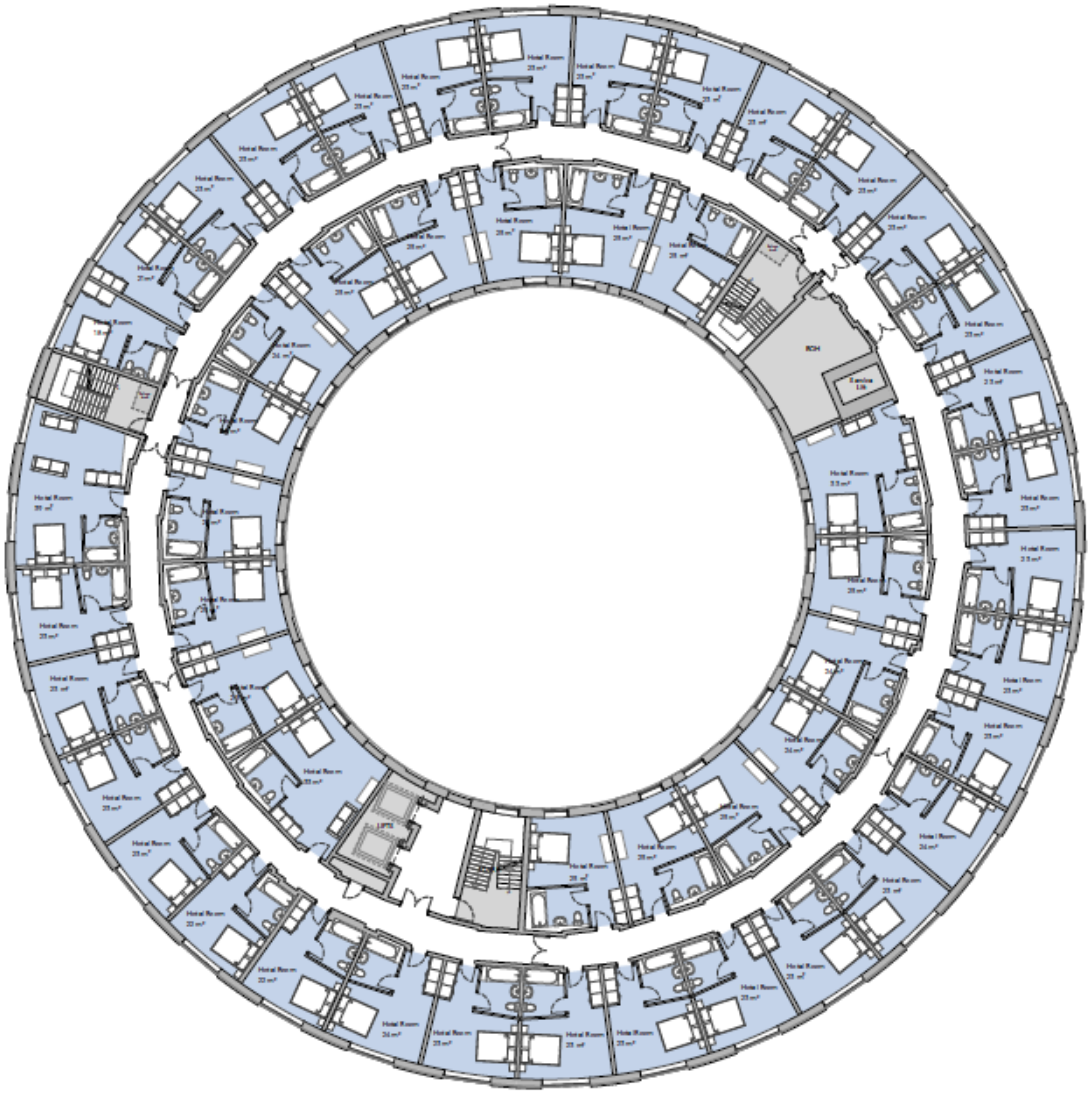


Figure 2.10 Fifth floor – Ariel Hotel

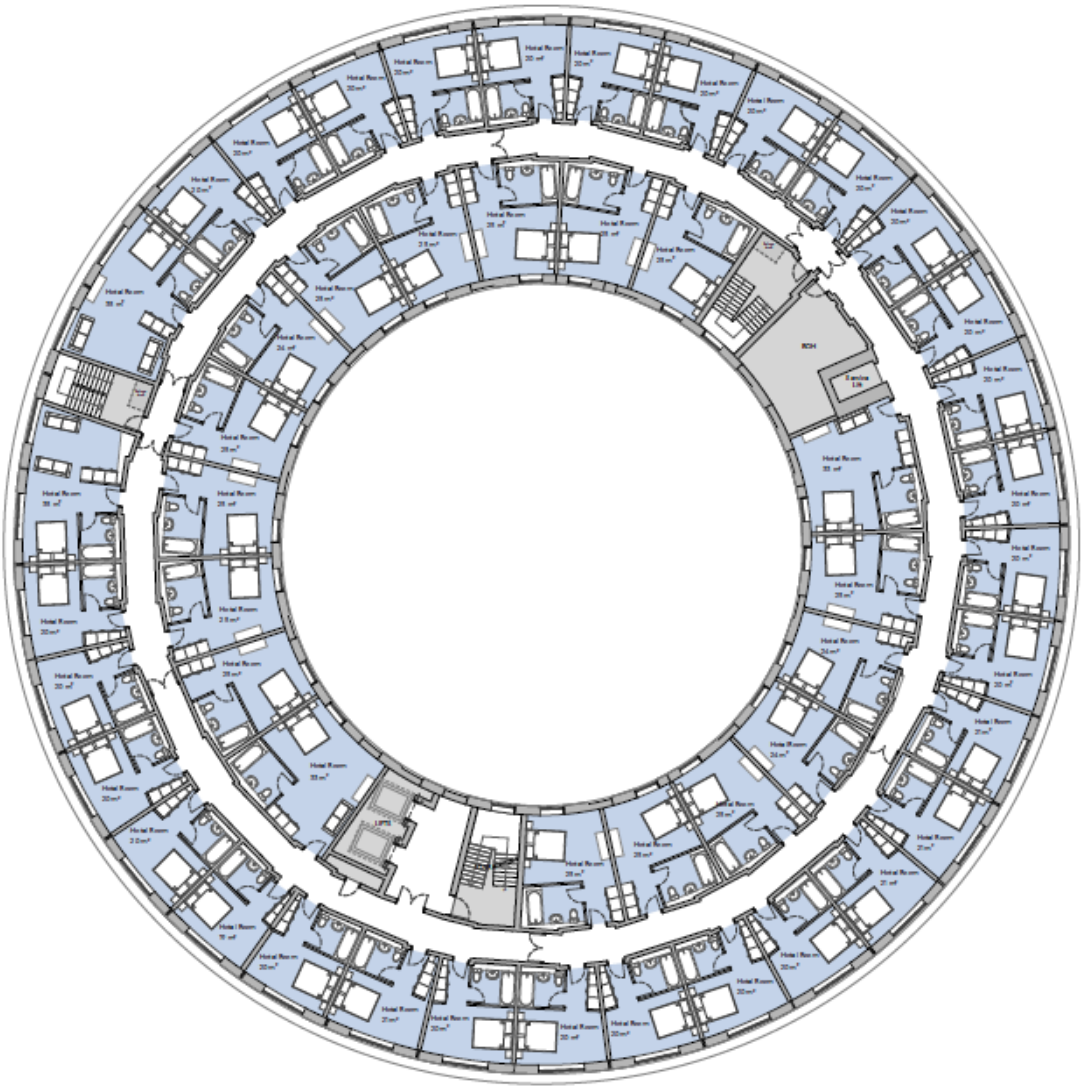


Figure 2.11 Ground floor – Apart-hotel

Figure 2.12 First and second floor – Apart-hotel

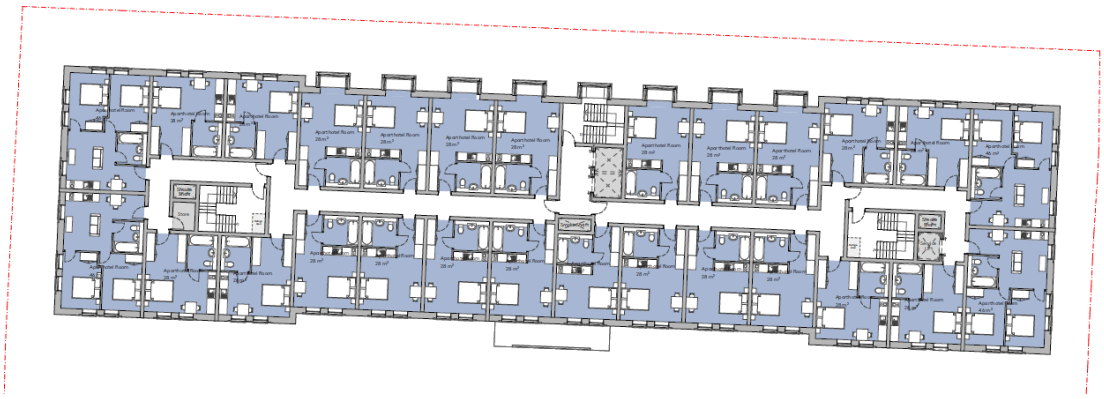
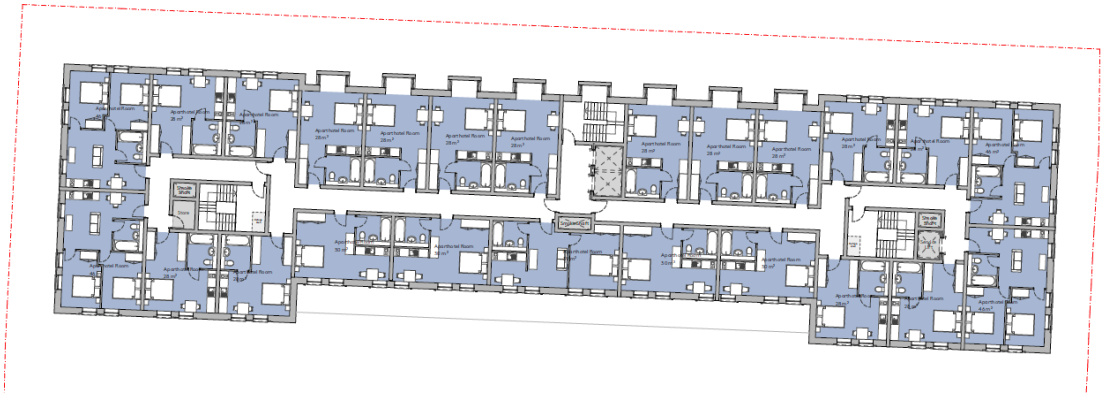


Figure 2.13 Third floor – Apart-hotel

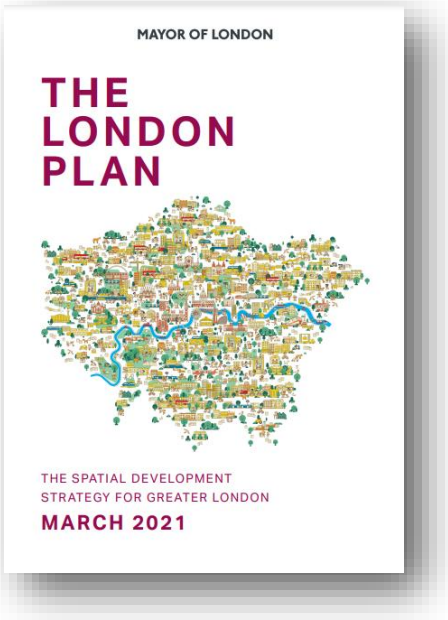


3. PLANNING AND REGULATORY CONTEXT

Regional Policy

3.1 The London Plan provides the following policy and guidance related to the circular economy.

The London Plan (March 2021)



3.2 The London Plan is the overall strategic plan for London and includes policies for sustainable development and circular economy within Chapter 9 (London's response to climate change). Key policies of relevance to this scheme are as follows:

- **Policy SI7 Reducing waste and supporting the circular economy.** This states that resource conservation, waste reduction, increase in material re-use and recycling, and reduction in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:

    1. Promote a more circular economy that improves resource efficiency and innovation to keep produces and materials at their highest use for as long as possible.

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

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

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

    5. Meet or exceed the targets for each of the following waste and material streams:

        a. Construction and demolition – 95 per cent reuse/recycling/recovery

        b. Excavation – 95 per cent beneficial use

    6. Design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

Referable applications should promote circular economy outcomes and aim to be 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 reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life.

3. Opportunities for managing as mush waste as possible onsite.

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

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

6. How performance will be monitored and reported.

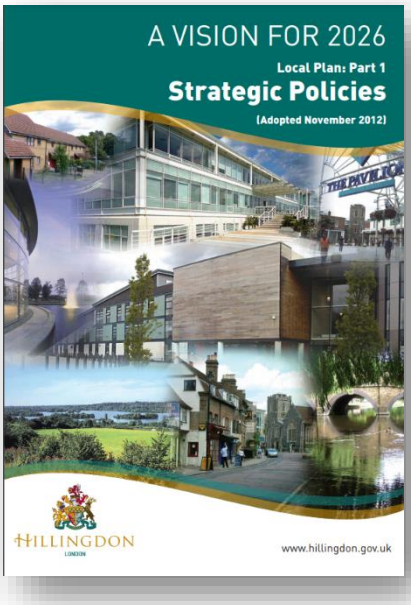
Development Plans that apply circular economy principles and set local lower thresholds for the application of Circular Economy Statements for development proposals are supported.

- **Policy D3 Optimising site capacity through the design-led approach.** This policy requires that, in consideration of their quality and character, development proposals should aim for high sustainability standards, and take into account the principles of the circular economy.

Local Policy

3.3 In determining the local context, the London Borough of Hillingdon policy is set out in the Local Plan Part 1 Strategic Policies (November 2012) and the Local Plan Part 2: Development Management Policies (January 2020).

London Borough of Hillingdon Local Plan Part 1: Strategic Policies (November 2012)



3.4 The Local Plan: Part 1 sets out the planning vision and strategy for London Borough of Hillingdon. It identifies how the borough will guide future development in terms of the effective choice of housing, jobs and supporting infrastructure such as schools, health, leisure and community facilities, as well as ensuring places in the borough become vibrant, safe and welcoming. Policies and objectives of relevance to this project in the context of sustainability and circular economy are as follows:

- **Strategic Objective 13:** Support the objectives of sustainable waste management.

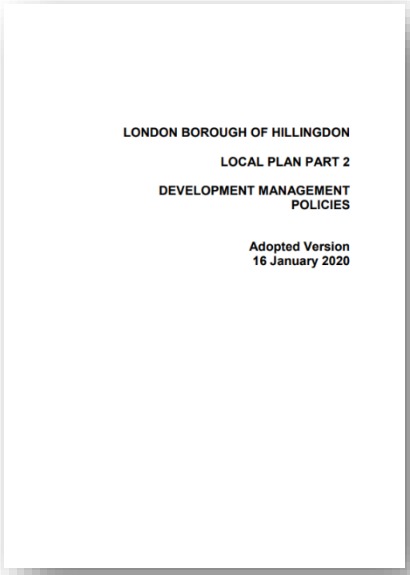
- **Policy EM11: Sustainable Waste Management**.
  The Council will aim to reduce the amount of waste produced in the Borough and work in conjunction with its partners in West London, to identify and allocate suitable new sites for waste management facilities within the West London Waste Plan to provide sufficient capacity to meet the apportionment requirements of the London Plan which is 382 thousand tonnes per annum for Hillingdon by 2026.

  The Council will require all new development to address waste management at all stages of a development's life from design and construction through to the end use and activity on site, ensuring that all waste is managed towards the upper end of the waste hierarchy.

  The Council will follow the waste hierarchy by promoting the reduction of waste generation through measures such as bioremediation of soils and best practice in building construction. The Council will promote using waste as a resource and encouraging the re-use of materials and recycling. The Council will also support opportunities for energy recovery from waste and composting where appropriate. The Council will safeguard existing waste sites unless compensatory provision can be made.

  The Council will seek to maximise the use of existing waste management sites through intensification or co-location of facilities.

London Borough of Hillingdon Local Plan Part 2: Development Management Policies (January 2020)



3.5 The purpose of the Local Plan Part 2: Development Management Policies is to provide policies that will form the basis of the decision making on individual planning applications. The document contains policies relating to new development and environmental protection and enhancement. Policies of relevance are as follows:

- **Policy DMHB 11: Design of New Development.** Development proposals should make sufficient provision for well designed internal and external storage space for general, recycling and organic waste, with suitable access for collection. External bins should be located and screened to avoid nuisance and adverse visual impacts to occupiers and neighbours.

- **Policy DMIN 4: Re-use and Recycling of Aggregates.** The Council will promote the recycling of construction, demolition and excavation waste.

  All developments will be encouraged to:

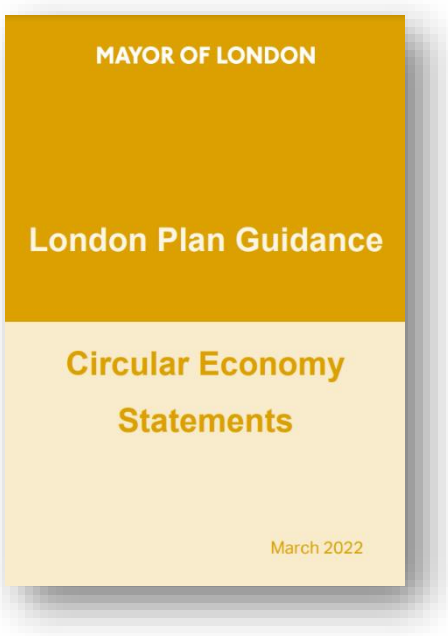
  - recycle and re-use construction, demolition and excavation waste as aggregates;
  - process and re-use the recyclable material on-site, and where this is not possible, the material should be re-used at another site or for land restoration; and
  - use substitute or recycled materials in new development in place of primary minerals.

  Planning permission for aggregates recycling on active minerals extraction and landfill sites will be supported, subject to local amenity and other policies within the Local Plan. Applications for aggregates recycling sites in other areas such as Strategic Industrial Locations will be required to satisfy other relevant policies in the Local Plan including the West London Waste Plan.

Other Considerations

London Plan Guidance Circular Economy Statements (March 2022)

3.6 The guidance note provides further detail on addressing the requirements related to Circular Economy, as per Policy SI7 of the London Plan through the provision of a Circular Economy Statement to accompany planning applications. The document explains how to how to prepare a Circular Economy Statement and the information that needs to be submitted to comply with the policy.



3.7 The guidance of the Circular Economy Statement Guidance states that Policy SI7 applies to planning applications which are referred to the Mayor, or where boroughs have specified a lower threshold. It can also be used to inform non-referable schemes.

4. METHOD STATEMENT

4.1 A holistic, interdisciplinary approach has been adopted to define and communicate the sustainability and circular economy principles effectively. In order to ensure relevant opportunities and integrated within the design, high level strategic opportunities have been investigated during pre-planning design workshops.

4.2 The design of the development is based on sustainable design and construction principles, as informed by planning requirements and industry best practice. The circular economy approach for the proposed development to date has taken a whole building life cycle approach to develop a more circular design, construction and operation for the buildings. Early discussion and adoption of the principles has been a key element of the approach; recognising that this is essential to identify and agree opportunities, outline commitments and targets, and increase project team buy-in. Further workshops will be held at the detailed design stage to ensure circular economy proposals are investigated and implemented, as necessary.

4.3 The overarching circular economy objectives are summarised in Table 4.1, below.

Table 4.1 Circular economy objectives

Principle	Commitments
Conserve resources, increase efficiency and source sustainably	• Minimise the quantities of materials used • Minimise the quantities of other resources used • Specify and source materials and other resources sustainably
Design to eliminate waste	• Design for longevity, adaptability or flexibility and reusability or recoverability • Design out construction, demolition, excavation and municipal waste arising
Manage waste sustainably and at the highest value	• Manage demolition waste • Manage construction waste • Manage excavation waste • Manage municipal waste

5. CIRCULAR ECONOMY GOALS AND STRATEGIC APPROACH

5.1 Circular economy considerations have formed a key part of the project sustainability strategy, and it is recognised that to most effectively implement the principles of a circular economy, high level strategic opportunities should be set out as early in the design process as possible.

5.2 A circular economy approach for the development has been establish. The development of the overarching sustainability strategy for the proposed scheme has included considerations around resource efficiency, material circularity and sustainable sourcing of materials.

5.3 The key strategic implementations for the scheme considered as part of this Circular Economy Statement are set out in Table 5.1, below. This table sets out the approach taken for each building area under a given aspect of the circular economy approach, the related target, and any additional supporting analysis submitted as part of the planning application for the proposed development. Further commentary is provided below.

Table 5.1 Circular Economy Strategic Approach

Aspect	Phase / Building / Area	Steering approach	Proposed Intervention	Supporting analysis
Circular economy approach for the new development	Sub-structure	Minimise the quantities of materials used	The proposed development will seek to retain the existing hotel building, therefore minimising the need to deliver a substructure to this building. For the proposed aparthotel building, the use of lightweight materials and lean design principles will aid in reducing the quantities of materials required to deliver the substructure	Supported by Design & Access Statement (DAS), submitted plans and elevations, and Whole Life Carbon Assessment.
	Superstructure	Minimise the quantities of materials used	Using lean principles and DfMA approach and lightweight materials	
	Construction waste	Manage construction waste	Investigating available modern construction technologies and offsite pre-manufacture to avoid waste	
	Excavation waste	Manage excavation waste	Where possible, onsite use of non-hazardous excavation material	
Circular economy approach for the existing site	Demolition waste	Manage demolition waste	Where possible, on-site use of non-hazardous demolition material, however it is noted that limited demolition will be required due to the intended retaining of the existing hotel	
Circular economy approach for municipal waste during operation	All areas	Efficient management of operational waste	Appropriate refuse storage to enable recycling and practice waste management	

Circular economy approach for the new development

5.4 The buildings developed on the site will follow best practice principles in terms of their design and construction, aiming to minimise material usage and waste, whilst also seeking to maximise longevity and adaptability.

5.5 The following focus areas have been considered in order to maximise opportunities to embed circular economy principles within the design of the proposed development:

- Lean design principles
- Material efficiency
- Adaptability and flexibility
- Low carbon construction
- Offsite and modular construction
- Design for Manufacture and Assembly (DfMA)
- Minimisation of excavation waste
- Material circularity
- Material procurement via leasing frameworks
- Responsible procurement
- Sustainable sourcing
- Local sourcing
- Supply chain engagement
- Life-cycle assessments
- Disassembly and demount-ability

5.6 It is expected that the proposed development will have a long life, and will be retained as a hotel and aparthotel throughout. Furthermore, advances in innovation and best practice over time, combined with effective feedback loop mechanisms, are expected to lead to continuous improvement as the proposed development enters the detailed design stages and beyond.

Circular economy approach for the existing site

5.7 The site is currently occupied by a four-storey plus basement hotel building, known as the Ariel Hotel. It is intended that this building will be retained, extended and reconfigured as part of the proposed development to deliver 102 new hotel rooms at the fourth and fifth floor levels. The proposed development will therefore reuse the existing building, reducing the amount of waste that would arise were the building to be demolished and replaced. Where parts of the existing building are to be replaced, which will enable the proposed upper extension, it is intended that the materials and waste arising from these works will be treated in line with sustainable waste management principles, with further details provided in the next section.

Circular economy approach for waste during operation

5.8 Waste storage design has accounted for the management of operational waste in line with the principles of the circular economy. As part of the design of the proposals, measures to reduce waste, storage and removals have been considered, with further details provided within the Design and Access Statement prepared by Ackroyd Lowrie. The design has been based upon relevant guidance provided as part of the London Plan and the London Borough of Hillingdon Local Plan Parts 1 and 2.

6. CIRCULAR ECONOMY COMMITMENTS

6.1 This section details the circular economy opportunities identified for the proposed development, in relation to nine circular economy principles:

Minimising the quantities of materials used.

6.2 The existing hotel building at the site is to be retained as part of the proposed development, thereby reducing the need for materials to erect a fully new-build development.

6.3 Repetition has been incorporated within the design of the facades of both the retained and extended hotel building, and the proposed new aparthotel building to the north. The proposed extension to the existing hotel building will seek to mirror the façade of the retained portion of the building, with repetition to be employed with respect to the window types and placements, as well as the façade bays. A similar approach has been applied to the proposed new aparthotel building, which has been designed to be in keeping with the existing hotel building. The use of repetition across the facades of the buildings will reduce the need for bespoke elements. This will encourage material efficiency and a reduction in waste arisings, as elements will be standardised across the development.

6.4 The principles of Design for off-site Manufacturing and Assembly (DfMA) have been incorporated within the scheme through the intended specification of modular bathroom pods within the proposed extension to the existing hotel, and modular bathroom and kitchen pods within the new build aparthotel building. The building elements associated with these pods would be manufactured off-site, and assembled on-site during the construction phase. By manufacturing these elements under factory conditions, the potential for waste to arise as a result of human error may be reduced.

6.5 The proposed development seeks to restore the historic Art Deco façade of the existing hotel. In order to do this, the material palette proposed to be employed for both the external appearance and structure of the scheme has been simplified. Metal panelling of three different colours will be employed within the replacement cladding for the existing building, as well as for the cladding of the proposed aparthotel building to the north. This will both simplify the installation of the buildings' facades, whilst also minimising the materials required to deliver the proposed structures and cladding, in line with the principles of lean design.

6.6 Lean design principles have been further embedded within the design of the proposed scheme, in particular through the intended simple floor plan of the proposed aparthotel building, and the alignment of the floorplans of the proposed extension to the existing hotel building. This, in combination with the circular shape of the existing hotel and associated proposed extension, will help

to ensure the form factor of the proposed scheme has been minimised. This will aid in reducing the quantities of materials required to deliver the proposed development.

Minimising the quantities of other resources used.

6.7 In addition to minimising use of land resources, the scheme will be designed to address efficient use of energy and water. Operational energy will be minimised in line with the London Plan requirements, as will the rate of internal water consumption. As detailed within the Sustainability, Energy & Overheating Statement, prepared by Iceni Projects, the proposed development will seek to reduce operational carbon dioxide emissions as far as possible. Through the implementation of a 'fabric first' approach, the proposals will achieve a 6% improvement over Part L:2021 of the Building Regulations. Through the employment of heat pump technology to serve both the space heating and cooling demand, and water heating demand, of the scheme, an approximate 90% reduction in emissions over the Part L:2021 baseline will be achieved on-site. In order to minimise internal water consumption, it is intended that low-flow devices be installed on taps and showers, where appropriate, and that dual-flush, low volume toilets be incorporated throughout.

Specifying and sourcing materials responsibly and sustainably.

6.8 The scheme will aim to prioritise the sourcing of materials from the UK to minimise travel distances, and will seek to implement the principles of the BRE Green Guide to Specification during further detailed design and the procurement stage. Best practice techniques and methods, particularly with respect to the use of concrete cores and associated materials, will be considered and implemented where appropriate. It is intended that timber to be utilised within the proposed development will be procured in consideration of FSC and PEFC certification, including with respect to timber employed within the formwork, and temporary uses such as scaffolding.

6.9 A Whole Lifecycle Carbon Assessment has been undertaken, and will be used to inform the design and selection of materials in order to minimise the embodied carbon associated with the development as far as possible. In addition to this, it is intended that circular economy and sustainability principles will be carried through the demolition and construction phases of the proposed development. It should be noted that the details of how this will be implemented will be provided following further detailed design in liaison with the principal contractor, and it is possible that this may be achieved through the wording of sub-contracts or requirements to demonstrate such practices during tender processes.

6.10 Subject to confirmation, it is aspired that, as the designs continue to progress and during the procurement of materials, local materials will be utilised where appropriate. The façade design has been inspired by the original, Art Deco cladding of the hotel in the 1960s. The materiality of the cladding is to be upgraded, with contemporary materials, such as metal panelling, to be employed. There is therefore a potential opportunity to source the materials required to construct the proposed

extensions, aparthotel building and associated facades from within the UK, and therefore reduce the distance over which the materials will need to be transported, subject to availability.

6.11 Whilst the potential to source and procure materials through leasing frameworks has been considered, due to the nature of the proposed development, this is unlikely to be applicable.

6.12 It is considered that engagement with the supply chain to maximise the sustainability and circularity of the materials procured for the proposed development will likely be implemented by the principal contractor once works commence onsite. As above, the details of how this engagement may take place will be determined following further detailed design and in liaison with the principal contractor, and it is possible that this may be achieved by writing these practices into sub-contracts, or for commitments to these practices being demonstrated during tender processes.

6.13 It is intended that a Metsec Steel Framing System (SFS) be employed to form the external walls of the proposed extension to the existing hotel, and within the new-build aparthotel to the north. Recycled steel for use in construction projects is readily available, and steel building elements present opportunities for the recycling of materials following the decommissioning of a building. In addition to this, the use of timber materials within the construction and form of the proposed development presents opportunities to reuse and recycle these elements. The nature of wood as a material means it may also be used as a biomass fuel following the end of its use as part of the proposed development, however this would be subject to the treatments used in the preparation of any timber elements present. Further to this, it is intended that the use of additives within the concrete employed as part of the construction of the proposed development be explored. This may include the use of Ground Granulated Blast-furnace Slag (GGBS), which has the potential to greatly reduce the embodied carbon emissions associated with these building elements, as well as creating a more durable concrete structure. The potential to maximise the recycled content and recyclability of the materials used within the proposed development will be explored in more detail as the design of the proposals continues to develop.

Design for longevity, adaptability or flexibility and reusability or recovery.

6.14 As noted above, the scheme will seek to deliver bathroom and kitchen pods through modular techniques, where feasible. There is also potential to incorporate volumetric modular principles in the construction of the facades of the proposed development. As detailed above, the employment of modular construction techniques aids in minimising resource consumption and waste generation as the use of factory conditions to prepare the building elements results in reduced human error, and prevents damage to materials that may otherwise occur on-site. The potential to employ modular techniques beyond the provision of modular bathroom and kitchen pods will be explored further throughout the detailed design stages, and considered during the procurement stage.

6.15 In addition, it is intended that materials will be selected with their durability taken into account. For example, the specification of concrete elements means that, whilst the initial manufacture of proposed concrete elements is fairly carbon intensive, their durability will minimise the need for their replacement over the lifetime of the scheme, therefore reducing the associated waste and embodied carbon emissions. It is expected that brick materials will be employed in the construction of the external walls of the aparthotel building. As for the proposed use of concrete, it is noted that whilst the initial manufacture of these materials is fairly carbon intensive, they are inherently durable and will not require replacement during the lifetime of the proposed development. At this stage, it is intended that a cladding system such as Rockpanel be employed for the proposed aparthotel building. This system employs non-depletable volcanic rock, which is a durable material that is able to withstand a range of weather and climate conditions, whilst also being low maintenance and dirt resistant.

6.16 The ease with which materials may be reused or recycled at the end of the scheme's lifetime will also be taken into account during material specification. For example, it is intended that Metsec SFS will be incorporated within the external walls of the proposed extension and new-build aparthotel, meaning there is potential for the associated steel to be reused or recycled within the local area at the end of the scheme's lifetime. Similarly, the use of bricks presents an opportunity to be reused and recycled within the local area which, in combination with the potential to incorporate recycled and reused brick materials, will aid in minimising the embodied carbon emissions associated with the use of this material. Further to this, and as detailed above, it is currently intended that a Rockpanel, or similar, cladding systems will be employed. This system is made from recycled materials, including stone wool, and is easily demounted and reused or recycled at the end of a development's lifetime. Other materials employed within the proposed development for which opportunities for reuse and recycling at the end of the development's life include glass materials employed within windows and other glazed elements, and the crushing of concrete to produce recycled (concrete) aggregate that may be used within the local area or as part of any new development coming forward on the site.

6.17 The proposals have been designed to include the provision of easily adaptable circulation and have a shallow floorplate. In addition to this, the proposed development has been designed to ensure the spaces located behind the facades are flexible, which will aid in the repurposing of the scheme, should there be a demand for this in the future.

6.18 Finally, design for disassembly principles have been considered as part of the proposed development, particularly when considering the intended use of Metsec SFS, bathroom and kitchen pods, and Rockpanel, or similar, cladding systems. With respect to Metsec SFS, the associated metalwork may be easily disassembled at the end of the proposals' lifetime, and either repurposed within another development, or the associated materials recycled. The bathroom and kitchen pods may be removed from the development and repurposed within other local developments. As detailed

above, the proposed use of Rockpanel, or similar, system would facilitate the reuse of the cladding, or the recycling of the associated materials to produce new stone wool products, without a loss of quality. Further to this, it is intended that the implementation of construction techniques that will facilitate the disassembly of the buildings using low-energy techniques that maximise the reuse and recycling potential of the materials will be explored. For example, this may include consideration of cements and mortars that allow for the disassembly of the brick portions of the facades with minimal damage to the individual bricks, which will maximise the potential for the bricks to be reused and recycled at the end of the scheme's life.

Design out construction, demolition, excavation and municipal waste arising.

6.19 As detailed above, there is potential for pre-fabrication methods to be used for some elements of the proposed development, for example the use of modular bathroom and kitchen pods. The potential to employ other modular and off-site construction techniques throughout the development, such as through the incorporation of Metsec SFS and metal and Rockpanel cladding systems, will be explored during further detailed design and at the procurement stage, as detailed above. The off-site manufacturing of elements of the proposed development will facilitate a reduction in construction waste through the employment of 'factory conditions' when manufacturing elements, aiding in reducing waste arising as a result of human error and adverse weather conditions where materials are stored on-site.

6.20 The use of standardisation and repetition across the façade will aid in reducing waste associated with the construction of bespoke and complex elements. Lean design principles have been implemented, minimising the amount of detailing to be incorporated within the facades, which will also aid in reducing the amount and range of materials required, and therefore minimising the potential for waste associated with the construction of the facades to arise.

6.21 Waste arising during the demolition and excavation phases may potentially be reduced through the use of existing materials on-site where possible, with materials likely to arise from the existing building and landscaping. It is noted that, due to the intended retention of the existing building, the amount of demolition to take place as part of the development will be kept to a minimum, however the potential to reuse or recycle any materials that do arise during demolition will be explored once the details of the materials have been confirmed. Further details of the reuse and recycling strategy proposed during the demolition stage of the proposed development may be provided as part of a Site Waste Management Plan (SWMP) that may be implemented during the construction phase of the proposed development.

Manage demolition waste.

6.22 Should any demolition works be required on-site, waste arisings will be managed through the implementation of good site management practices, as will be set out by the principal contractor

during the demolition phase. Demolition waste arising may be reduced through the maximisation of the reuse of materials arising from demolition works, either on the site itself, or in the surrounding area.

6.23 Where materials cannot be reused or repurposed at their current value, it is intended that remaining demolition waste will be recycled where possible, with a view to divert at least 95% of demolition waste arising from landfill. It should be noted that targets relating to the diversion of waste from landfill are subject to confirmation.

Manage excavation waste.

6.24 Where excavation is required for the proposed development, it is intended that any non-hazardous material excavated will be re-used on the site where possible. As detailed above with regard to the management of demolition waste, the implementation of good site management practices, as set out by the principal contractor during any excavation works, will also aid in the appropriate management of waste arising. Furthermore, as above, it is intended that any excavation waste that cannot be reused or recycled on the site will be managed by a recycled where possible, with a view to divert at least 95% of this waste from landfill, subject to confirmation. It should be noted that, as for demolition waste above, targets relating to the diversion of waste from landfill are subject to confirmation.

Manage construction waste.

6.25 As with excavation and demolition waste, construction waste will be managed through the implementation of good site practices, as set out by the principal contractor. This will include the preparation and implementation of a site waste management plan to ensure construction waste is handled in a responsible manner. It is intended that the GLA target of 95% of non-hazardous waste being diverted from landfill will be achieved. It is intended that, prior to commencement on site, a Site Waste Management Plan (SWMP) will be prepared by the designated contractor. This will detail the predicted waste arisings and streams, as well as the intended relevant methods of disposal and targets for the diversion of waste from landfill.

Manage municipal waste.

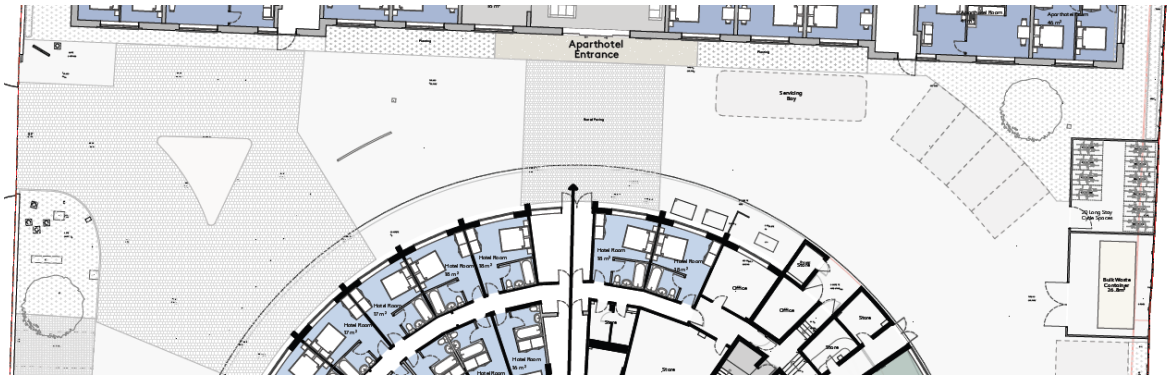
6.26 The operational waste will be reduced in line with London Environment Strategy. It is intended that estimated operational waste generation from the proposed development will be quantified based on waste generation metrics and collection frequencies during the detailed design stage.

6.27 In line with the requirements of the London Borough of Hillingdon, it is intended that operational waste will be managed according to the waste hierarchy, seeking to preferentially prevent the generation of waste, before it is prepared for reuse or recycling, with the disposal of waste considered only where materials cannot be reused, recycled or recovered.

6.28 As detailed within the Design and Access Statement, prepared by Ackroyd Lowrie, refuse servicing will be undertaken via a bulk waste storage container that will be managed privately and serviced within the site. The bulk waste storage container will be located at the ground floor level of the site, at the eastern boundary to the northeast of the existing hotel building and south east of the proposed aparthotel building. Waste operatives will have access to the waste store from the proposed access road from High Street Harlington (A437) at the ground floor level.

6.29 The location of the proposed bulk waste container is displayed on the proposed site layout plan prepared by Ackroyd Lowrie, and highlighted in Figure 6.1 below.

Figure 6.1 Proposed ground floor layout showing location of communal refuse stores



Key Commitments

6.30 The proposed interventions and key commitments detailed above are summarised in Appendix A2.

Plans for Implementation

6.31 The plans to implement the aims and achieve the targets set out within this Circular Economy Statement are set out below:

Table 6.1 Plans for Implementation

	Target / Commitment	Who	What	When	How
Short-term	Minimising the quantities of materials used	Design Team / Structural Engineer / Contractor / Supply Chain	Design optimisation to reduce the buildings' weight	Detailed design stage Procurement stage Pre-construction stage	Material review exercise Comparative studies to assess solutions to minimise building weight Workshop with the wider team to review strategies and opportunities Pre-construction engagement with supply chain
	Minimising the quantities of other resources used (energy, water, land)	Design Team / Contractor / Supply Chain	Employment of DfMA and offsite fabrication where possible	Detailed design stage Procurement stage Pre-construction stage	Comparative studies to assess solutions to build methods Workshop with the wider team to review strategies and opportunities Pre-construction engagement with supply chain
	Specifying and sourcing materials responsibly and sustainably	Design Team / Contractor / Supply Chain	All materials to be responsibly sourced, and locally where possible Investigation of recycled content of materials and use of FSC and PEFC timber	Detailed design stage Procurement stage Pre-construction stage	Comparative studies to assess material options and procurement methods Workshop with the wider team to review strategies and opportunities Pre-construction engagement with supply chain Inclusion of policy to procure responsibly sourced materials only and locally sourced materials where possible
	Designing for reusability / recoverability / longevity / adaptability / flexibility	Design Team	Design spaces for flexibility whilst enabling access to all elements that could be re-used or replaced	Detailed design stage	Comparative studies to assess potential alternative uses for spaces and to ensure access to all reusable and replaceable building elements Workshop to review strategies and opportunities and to develop measures to protect the building against damage Workshop with the wider design team to devise a disassembly strategy
	Designing out construction, demolition, excavation, industrial and	Design Team / Contractor / Supply Chain	Designing out waste through modular and off-	Detailed design stage	Comparative studies to assess solutions to build methods

	Target / Commitment	Who	What	When	How
	municipal waste arising		site construction techniques	Procurement stage Pre-construction stage	Workshop with the wider team to review strategies and opportunities Pre-construction engagement with supply chain
Medium-term	Demolition waste – divert 95% from landfill	Contractor / Supply Chain	Maximisation of the reuse and repurposing of materials arising from the partial demolition of existing structures on-site	Pre-construction stage Demolition stage	Preparation and implementation of Site Waste Management Plan
	Excavation waste – divert 95% from landfill	Contractor / Supply Chain	Maximisation of the reuse and repurposing of materials arising from excavation on-site	Pre-construction stage Excavation stage	Preparation and implementation of Site Waste Management Plan
	Construction waste – divert 95% from landfill	Contractor / Supply Chain	Maximisation of the reuse, repurposing and recycling of waste arising during the construction phase	Pre-construction stage Construction stage	Preparation and implementation of Site Waste Management Plan to ensure waste arising is recorded Implementation of the Waste Hierarchy: Prevention, Reuse, Recycling, Disposal to maximise the reuse and recycling of waste materials on-site where possible
Long-term	Municipal and industrial waste – divert 65% from landfill	Building Management / Royal Borough of Kensington and Chelsea	Appropriate refuse storage to enable recycling and best practice waste management	Detailed design stage Operational stage	Provision of appropriate refuse storage within dwellings and sufficient communal storage Engagement with Royal Borough of Kensington and Chelsea to extend waste stream collections to enable separation of materials – adaptation of the wate storage facilities provided to reflect changes arising through this engagement Provision of Home Use Guides to inform waste separation and correct storage and to provide information on methods of reducing waste
	End-of-life materials – divert 95% from landfill	Contractor / Supply Chain	Maximisation of the reuse, repurposing and recycling of waste arising at the end of the building's life	Detailed design stage End of life	Implementation of Disassembly Strategy Preparation and implementation of Site Waste Management Plan Implementation of the Waste Hierarchy: Prevention, Reuse, Recycling, Disposal

End-of-Life Strategy

6.32 In line with the Circular Economy principles, the main priority of this strategy is to extend the lifetime of the proposed development through careful design and specification, whilst also ensuring that if the buildings are to be disassembled, there is a clear process to follow. As detailed above, the durability of the materials employed within the proposed development will be considered to ensure that the lifetime of the buildings may be maximised. Furthermore, the inclusion of modular elements within the design will aid in reducing the complexity of some portions of the proposed development.

6.33 The proposed development has been designed to enable building materials, components and products to be disassembled and reused at the end of their useful life as follows:

- Disassembly measures implemented within the design, such as the use of Rockpanel, or similar, cladding systems, Metsec SFS within the external walls, and the employment of bathroom and kitchen pods will enable elements of the proposed development to be easily removed and directly re-used off-site or recycled at the end of their useful life.
- The potential use of cements and mortars that allow for the disassembly of the brick portions of the external walls with minimal damage to the individual bricks will be considered and prioritised, which will maximise the potential for the bricks to be reused and recycled at the end of the scheme's life.
- Concrete and bricks which do not have the potential to be reused will be crushed to produce Recycled Aggregate or Recycled Concrete Aggregate that may be used either on-site or within the local area.
- Steel and glass elements will be disassembled and reused, where possible, or recycled.
- Products and services, such as the air source heat pumps and air conditioning systems, will be reclaimed or recycled where possible. As the services have been designed for easy access for maintenance during the proposed development's operation, this will facilitate their easy removal from the building at the end of its life, and will therefore enable the reuse, refurbishment or recycling of these products and services.
- It is intended that arrangements be made to remove fixtures, fittings and furniture from the proposed development for their refurbishment, reuse, recycling, or sale within a local second-hand market.

6.34 The End-of-Life strategy for the proposals will be developed further at a more detailed design stage to further consider:

- The building elements that have been designed for reuse or disassembly;

- How elements of the building that have been designed for repair, reuse of disassembly may be accessed;
- The materiality of the building elements, to inform potential reuse and recycling; and
- Targets for the reuse and recycling of materials, and the targeted diversion from landfill rate (at this stage it is expected that a 95% diversion rate would be targeted, however this is subject to confirmation).

6.35 It is expected that the End-of-Life Strategy will be made accessible to the body operating the proposed development, and the contractors responsible for the disassembly of the building at the end of its life.

7. SUMMARY AND CONCLUSIONS

7.1 This Circular Economy Statement outlines the circular economy strategic approach to be adopted by the proposed redevelopment of the Ariel Hotel, Hayes and gives an overview of the interventions that will be applied to ensure circular economy principles are embedded within the design of the scheme over its lifetime.

7.2 A summary of the proposed circular economy strategic approach is provided below.

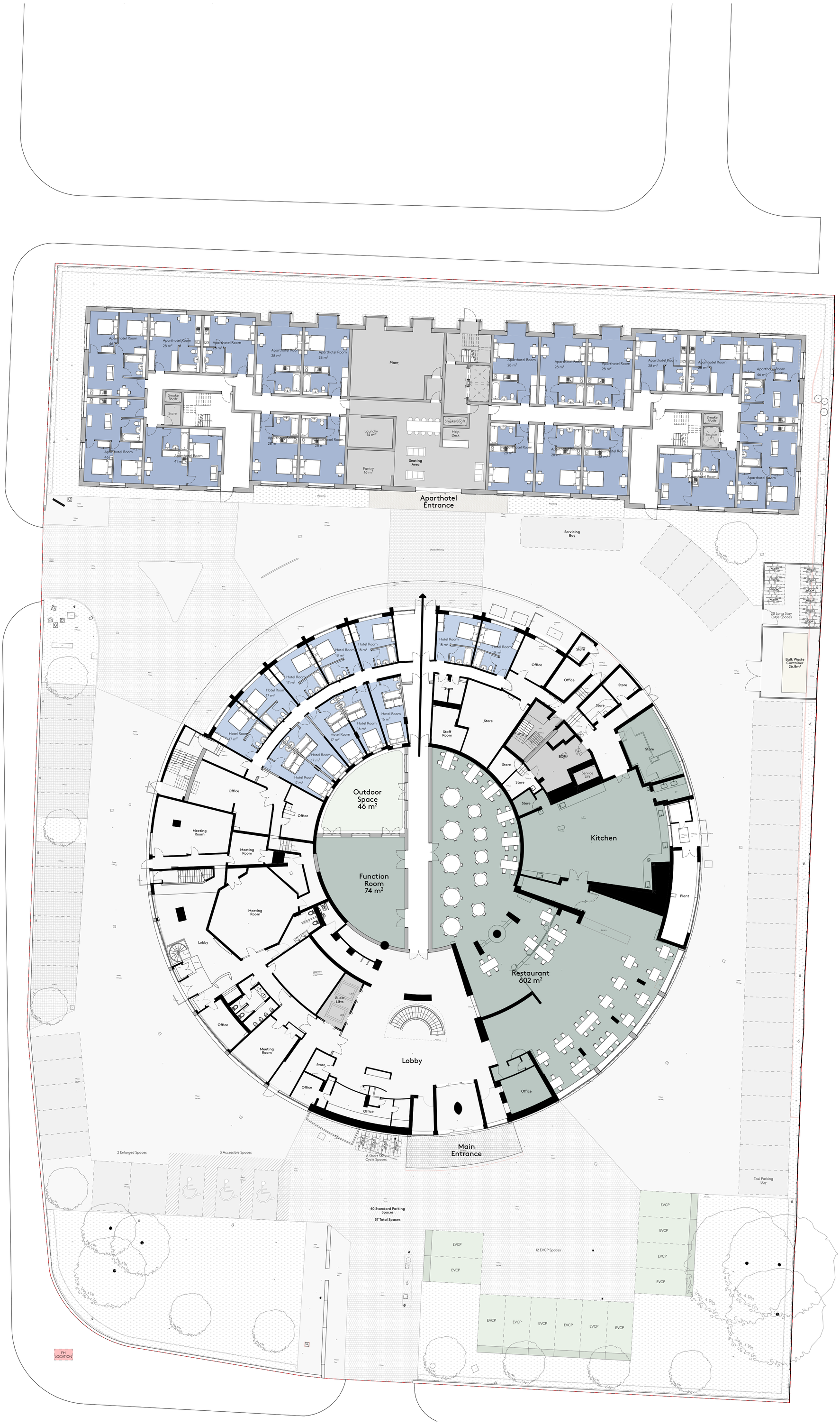
Table 7.1 Circular Economy Strategic Approach

Aspect	Phase / Building / Area	Steering approach	Proposed Intervention	Supporting analysis
Circular economy approach for the new development	Sub-structure	Minimise the quantities of materials used	The proposed development will seek to retain the existing hotel building, therefore minimising the need to deliver a substructure to this building. For the proposed aparthotel building, the use of lightweight materials and lean design principles will aid in reducing the quantities of materials required to deliver the substructure	Supported by Design & Access Statement (DAS), submitted plans and elevations, and Whole Life Carbon Assessment.
	Superstructure	Minimise the quantities of materials used	Using lean principles and DfMA approach and lightweight materials	
	Construction waste	Manage construction waste	Investigating available modern construction technologies and offsite pre-manufacture to avoid waste	
	Excavation waste	Manage excavation waste	Where possible, onsite use of non-hazardous excavation material	
Circular economy approach for the existing site	Demolition waste	Manage demolition waste	Where possible, on-site use of non-hazardous demolition material, however it is noted that limited demolition will be required due to the intended retaining of the existing hotel	
Circular economy approach for municipal waste during operation	All areas	Efficient management of operational waste	Appropriate refuse storage to enable recycling and practice waste management	

7.3 The key commitments to be made as part of the proposed development are as follows:

- Minimising the quantities of materials used through the implementation of lean design principles.
- Minimising the quantities of other resources used through the employment of energy efficiency measures and water efficient fittings.
- Specifying and sourcing materials responsibly, for example through the implementation of the principles of the BRE Green Guide to Specification.
- Designing for longevity and recovery through the use of durable materials that may be recovered, reused and recycled at the end of the development's lifetime.
- Minimising the generation of waste where possible, and maximising the recovery, reuse and recycling of waste materials arising.

A1. SITE PLAN



Proposed Site Plan 1:200

Ackroyd Lowrie

23 Vyner Street, London E2 9DG
Ph: 0203 770 9780
www.ackroydlowrie.com

KEY

Site boundary

0 5 10m
1:200

N

LOCATION

ISSUE

Rev.	Date	Change No.	Change Name
P1	31/08/2023		

PROJECT

NAME
1041 - Ariel Hotel

CLIENT
R Heathrow Ariel Opco Limited

DRAWING NO.
1041-099

DRAWING
Proposed Site Plan

REVISION
P1

Drawn	Checked	Scale	Current Stage	Date
JM	AB	1:200@A1	Planning	31/08/2023

A2. KEY COMMITMENTS

Table A2.1 Key Commitments

Building 'Layer' (as per GLA Guidance)	Site	Substructure	Superstructure	Shell / Skin	Services	Space	Stuff	Construction stuff	Summary	Challenges	Counter-actions + Who + When	Plan to prove and quality
Section A: Conserve Resources												
Minimising the quantities of materials used	Reuse of materials from existing structures where possible	Reuse of the existing building, and efficient design of the ground floor level and foundations associated with the new build portions of the proposed scheme, to minimise extent of excavation and the quantities of concrete required	Lean design principles adopted Material efficiency review to be undertaken at detailed design	Optimisation of façade to minimise overall weight where possible Consideration of lightweight materials	Consideration of off-site prefabrication of some structural elements, e.g. Metsec SFS and modular bathroom and kitchen pods	Circular shape of existing hotel and associated proposed extension and simple floor layout of the proposed aparthotel building will aid in minimising the form factors of these portions of the development		To be reviewed with contractor during pre-construction supply chain engagement	Design optimisation to reduce the buildings' weight	The proposed design does not necessarily enable the use of modular design for the delivery of the building facades	Ensure structural design is optimised Pre-construction supply chain engagement	Material efficiency review exercise to be undertaken at more detailed design stage
Minimising the quantities of other resources used (energy, water, land)	Use of SuDS to discharge to existing Thames Water infrastructure	Consideration of DfMA and modular design opportunities in order to reduce the construction programme and, therefore, the associated resources, including energy and water			Use of highly efficient air source heat pumps to reduce grid electricity consumption within the aparthotel				Consideration of DfMA and offsite fabrication where possible	Maturity of the market and design solutions Specific site constraints driving bespoke solutions	Ensure structural design is optimised Pre-construction supply chain engagement	Review exercise to be undertaken at a more detailed design stage

Building 'Layer' (as per GLA Guidance)	Site	Substructure	Superstructure	Shell / Skin	Services	Space	Stuff	Construction stuff	Summary	Challenges	Counter-actions + Who + When	Plan to prove and quality
Specifying and sourcing materials responsibly and sustainably	Prioritisation of locally sourced materials where possible	Investigation of recycled aggregates and cement replacements	Investigation of substitute materials for concrete Use of FSC and PEFC timber where possible						All materials to be responsibly sourced, and locally where possible Investigation of recycled content of materials and use of FSC and PEFC timber	Potential cost premium Higher recycled content target may limit supply chain	Ensure structural design is optimised Pre-construction supply chain engagement	Review exercise to be undertaken at a more detailed design stage
Section B: Design to eliminate waste and for ease of maintenance												
Designing for reusability / recoverability / longevity / adaptability / flexibility			Modular construction, off-site fabrication, prefabrication and the use of standardised components have been considered		Flexibility and adaptability, and the use of standardised components have been considered				Design spaces for flexibility whilst enabling access to all elements that could be re-used or replaced	Has been designed for current use and spaces behind the facades have been designed to be flexible	Pre-construction supply chain engagement	Review exercise to be undertaken at a more detailed design stage
Designing out construction, demolition, excavation, industrial and municipal waste arising	The existing building on the site is to be reused as part of the proposed development The reuse of any additional materials associated with the existing structures on-site will be maximised as far as possible,		Modular construction, DfMA approaches and the employment of supplier take-back schemes have been considered	Modular construction, DfMA approaches, the employment of supplier take-back schemes and the implementation of "just-in-time" delivery have been considered		The employment of supplier take-back schemes, the implementation of "just-in-time" delivery and the minimisation of packaging have been considered			Designing out waste through modular and off-site construction techniques	Relative cost, availability and access for installing off-site or modular components to be considered	Pre-construction supply chain engagement	Review exercise to be undertaken at a more detailed design stage

Building 'Layer' (as per GLA Guidance)	Site	Substructure	Superstructure	Shell / Skin	Services	Space	Stuff	Construction stuff	Summary	Challenges	Counter-actions + Who + When	Plan to prove and quality
	with materials that cannot be reused to be recycled											
Section C: Manage waste												
Demolition waste (how waste from demolition of the layers will be managed)	The existing building on the site is to be reused as part of the proposed development The reuse of any additional materials associated with the existing structures on-site will be maximised as far as possible, with materials that cannot be reused to be recycled Good practice site waste management								Maximisation of the reuse and repurposing of materials arising from the partial demolition of existing structures on-site	Possibility of asbestos contamination	Pre-demolition surveys to be undertaken	
Excavation waste (how waste from excavation will be managed)	The reuse of materials associated excavated on-site will be maximised as far as possible, with materials that cannot be reused to be recycled Good practice site waste management								Maximisation of the reuse and repurposing of materials arising from excavation on-site	Possibility of ground contamination	Pre-excavation surveys to be undertaken	
Construction waste (how waste arising from construction of the layers will be reused or recycled)	Off-site construction and the use of DfMA approaches where possible Good practice site waste management							Consider construction incentives to reduce waste	Maximisation of the reuse, repurposing and recycling of waste arising during the construction phase		Supply chain engagement	
Municipal and industrial waste (how the design will support operational waste management)	Refuse storage planned in conjunction with wider waste transport assessment	Suitable refuse storage provided to enable segregation and storage of waste							Appropriate refuse storage to enable recycling and best practice waste management			

A3. GENERAL NOTES

A3.1 The report is based on information available at the time of the writing and discussions with the client during any project meetings. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by Iceni Projects Ltd for inaccuracies in the data supplied by any other party.

A3.2 The review of planning policy and other requirements does not constitute a detailed review. Its purpose is as a guide to provide the context for the development and to determine the likely requirements of the Local Authority.

A3.3 No site visits have been carried out, unless otherwise specified.

A3.4 This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in guidance may necessitate a re-interpretation of the report in whole or in part after its original submission.

A3.5 The copyright in the written materials shall remain the property of Iceni Projects Ltd but with a royalty-free perpetual licence to the client deemed to be granted on payment in full to Iceni Projects Ltd by the client of the outstanding amounts.

A3.6 The report is provided for sole use by the client and is confidential to them and their professional advisors. No responsibility whatsoever for the contents of the report will be accepted to any person other than the client, unless otherwise agreed.

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