

NXQ

Lever Street, Manchester

Circular Economy Statement

Revision 01 _ 29.4.2024



Howells

SOLLER

ENVIRONMENTAL PLANNING

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The NXQ Building, Lever Street
Manchester
Circular Economy Statement

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EXECUTIVE SUMMARY

BWB Consulting (BWB) was instructed by Soller Nine ('the Applicant') to provide a Circular Economy Statement (CES) for a proposed office development ('the Proposed Development') at the NXQ Building, Lever Street, Manchester ('the Site').

The Site is located in Manchester's Northern Quarter, within the administrative boundary of Manchester City Council (MCC). The Site currently comprises commercial and office space in addition to disused buildings.

The aim of this CES is to provide a high-level strategy for the construction, operation and decommissioning of the proposed building with respect to non-renewable material resources and minimising lifecycle impacts.

The objectives of this CES are to:

- Determine whether the Proposed Development adheres to the Waste Hierarchy;
- Determine whether the Proposed Development adheres to the Circular Economy Hierarchy; and
- Determine whether targets and commitments for materials and elements will be realised.

This CES has considered the circular economy hierarchy approach as developed by the Greater London Authority, who have set the requirements for what should be included within a CES. In lieu of an alternative circular economy hierarchy approach developed by MCC, it is considered that this approach will be acceptable to MCC.

Details within energy, flood risk, drainage and BREEAM documents to be submitted to support the application, as well as the most up to date information provided by the architects and engineers for the building, have been reviewed to determine whether the Proposed Development would adhere to waste and circular economy hierarchies and whether key targets and commitments will be met.

Following this review, it is considered that the Proposed Development would broadly adhere to the waste and circular economy hierarchies, and that targets and commitments for materials and elements are in line with circular economy principles.

CONTENTS

EXECUTIVE SUMMARY iii

1. INTRODUCTION..... 1

 Introduction 1

 Principles of a Circular Economy 1

2. THE SITE AND THE PROPOSED DEVELOPEMENT 4

 Site Location and Description 4

 The Proposed Development 5

 Building in Layers..... 5

3. LEGISLATION AND POLICY CONTEXT 12

 National Policy and Guidance 12

 Regional and Local Policy 14

4. IMPLEMENTING A CIRCULAR ECONOMY 17

 Approach and Limitations..... 18

 Targets and Commitments..... 19

 End of Life Phase..... 24

5. CONCLUSIONS 25

FIGURES

- Figure 1: Circular Economies (Waste Strategy for England, 2020)
- Figure 2: Site Location Plan
- Figure 3: Building Layers and their Indicative Lifespans
- Figure 4: CE hierarchy for building approaches (GLA, 2020)

TABLES

- Table 1: Materials which Comprise the Proposed Building Layers
- Table 2: The Waste Hierarchy
- Table 3: Circular Economy Targets and Commitment for the Sci-Tech Building and PBSA

APPENDICES

- APPENDIX 1: Site Masterplan
- APPENDIX 2: Circular Economy Statement Requirements by Application Type

1. INTRODUCTION

Introduction

- 1.1 BWB Consulting (BWB) was instructed by Soller Nine ('the Applicant') to provide a Circular Economy Statement (CES) for a proposed office development ('the Proposed Development ') at the NXQ Building, Lever Street, Manchester ('the Site').

Principles of a Circular Economy

- 1.2 Current and future trends point toward the need for a fundamental shift in the way resources are consumed. A shift to a circular economy will provide considerable economic opportunities as a result.
- 1.3 A circular economy can be defined as '...one where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste.' It is a move away from the current linear economic model, where materials are mined, manufactured, used and thrown away. **Figure 1.1** provides a visual illustration of the circular economy model.

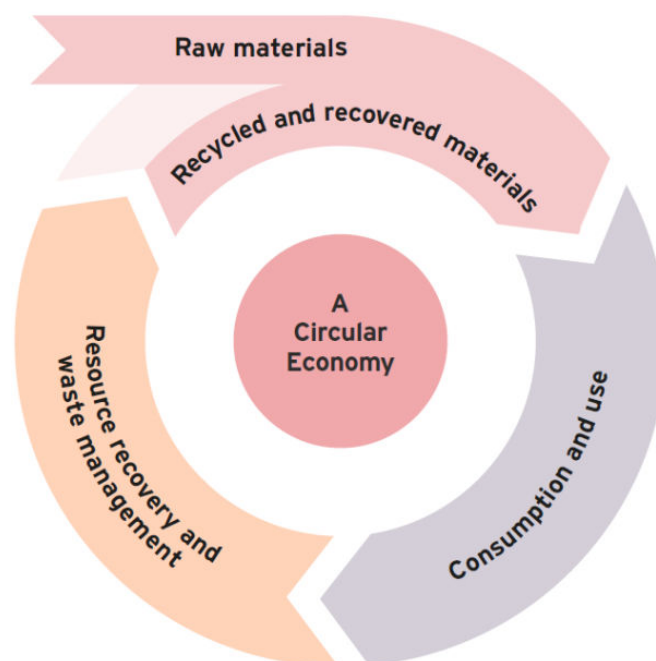


Figure 1.1: Circular Economies (Waste Strategy for England, 2020)

- 1.4 In contrast to a linear economy (take, make, dispose), a circular economy keeps products and materials circulating through the system at their highest value for as long as possible, through reuse, recycling, refurbishment and remanufacturing. As 60% of

total UK waste is generated from construction, demolition and excavation (Defra, 2023¹) this transition from linear to circular is essential.

1.5 A holistic approach to the Proposed Development has been adopted to establish the approach and targets in relation to the circular economy. The focus has been to create an architecture where the circular economy principles could be embedded in the design rather than an afterthought. Having a clear understanding of the objective of the local and national policies, the concepts of whole life carbon and circular economy were considered comprehensively. The design approach respects the following framework:

- **Retain** – Retaining and repurposing existing building on-site;
- **Reuse** – Reusing existing structure as much as practically feasible, reusing existing material, such as sending demolished concrete for crushing to produce aggregate. Thus, reducing embodied carbon; and
- **Recycle** – Use recycled and recyclable material for construction as much as possible.

1.6 The successful implementation of circular economy principles will help to reduce the volume of waste that is produced and managed within MCC. A key way of achieving this will be through incorporating the 'six circular economy principles', which have been developed by the Greater London Authority² (GLA) and followed within best practice guidance throughout England, into the design of developments. These principals are as follows:

- Building in layers** - ensuring that different parts of the building are accessible and can be maintained and replaced where necessary;
- Designing out waste** - ensuring that waste reduction is planned in from project inception to completion, including consideration of standardised components, modular build and re-use of secondary products and materials;
- Designing for longevity** – creating a built asset with well-defined long-term needs, while being durable, resilient or able to cope with societal and environmental change. It would require little modification / no replacement of parts, due to its 'loose fit', generous proportions and readiness for alternative technologies;
- Designing for adaptability or flexibility** – to meet the needs of the present but with consideration of how those needs might change in the future, and to enable change in the form of periodic remodelling and reconfiguration, including alterations or replacement of non-structural parts;
- Design for assembly, disassembly and recoverability** – future proofing the asset by designing products and services to be assembled, deconstructed and reused or recycled on a part-by-part basis; and
- Selecting materials** - any new material specified in the development should aim to be low impact materials with little or no adverse effect on either the environment or on human health throughout its lifecycle. Recognise and encourage the use of

¹ Defra 2023 'UK statistics on waste'. Available from: <https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste>

² GLA (2020) 'Circular Economy Statement Guidance'.

recycled content and secondary aggregates, thereby reducing the demand for virgin material and optimising material efficiency in construction.

1.7 The aim of this CES is to provide a high-level strategy for the construction, operation and decommissioning of buildings associated with the Proposed Development with respect to non-renewable material resources and minimising lifecycle impacts.

1.8 The objectives of this CES are to:

- Determine whether the Proposed Development adheres to the Waste Hierarchy;
- Determine whether the Proposed Development adheres to the Circular Economy Hierarchy; and
- Determine whether targets and commitments for materials and elements will be realised.

2. THE SITE AND THE PROPOSED DEVELOPEMENT

Site Location and Description

- 2.1 The Site is located in Manchester's Northern Quarter, within the administrative boundary of Manchester City Council (MCC). The Site is located within the Greater Manchester Combined Authority (GMCA) Air Quality Management Area (AQMA) which was designated for exceedances of the annual mean nitrogen dioxide (NO₂) objective.
- 2.2 The Site currently comprises commercial and office space in addition to disused buildings. The Site is bordered to the north by Great Ancoats Street, with commercial spaces beyond. Little Lever Street runs to the east of the Site, with apartments and restaurants located beyond. Houldsworth Street is located directly south of the Site and office space is located further south. The Site is bordered to the west by Lever Street, with a hotel and commercial space located beyond.
- 2.3 Figure 2.1 shows the location of the Site.



Figure 2.1: Site Location Plan

The Proposed Development

- 2.4 The Proposed Development involves a full planning application for part-retention, conversion and extension of existing buildings; selective demolition; the erection of a ground floor + 17 storey building comprising new office space (Use Class E) with ground floor reception area and ancillary uses; supporting infrastructure and ancillary facilities, roof top plant enclosures, and landscaping. The Site Masterplan is detailed in **Appendix 1**.
- 2.5 The Proposed Development is aiming to achieve a BREEAM minimum rating of 'Excellent'.
- 2.6 The design intends to incorporate a sustainable drainage system (SuDS) anticipated to include an attenuation tank of 65 m³ which will reduce the peak discharge rate from the Site to the Greenfield rate. Rainwater harvesting is also being considered within the design but its inclusion has not been confirmed at the time of writing.

Building in Layers

- 2.7 The design for the Proposed Development has been broken down into building layers to design out waste, optimise material use and keep building elements/materials in use after the end of their life cycle. This approach follows the standard guidance as set out by the Royal Institute of Chartered Surveyors ('RICS') New Rules of Measurement ('NRM') (2021)³ building elements where relevant (**Figure 2.2** and **Table 2.1**).

³ RICS (2021) 'New Rules of Measurement'. Available from: <https://www.rics.org/profession-standards/rics-standards-and-guidance/sector-standards/construction-standards/nrm>

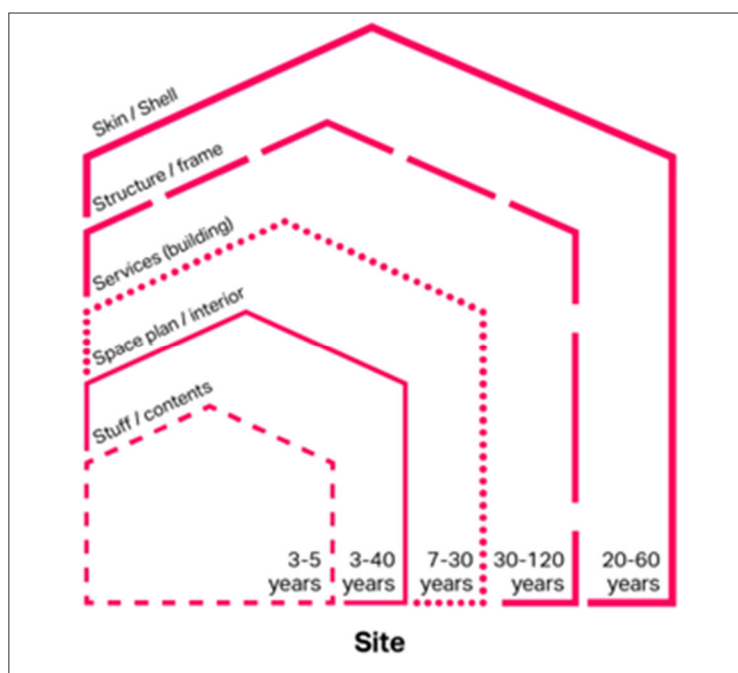


Figure 2.2: Building Layers and their Indicative Lifespans

2.9 Materials associated with each building layer for the Proposed Development are set out in **Table 2.1**. The information in the table is reflective of the most up to date information at the time of writing.

Table 2.1: Materials which Comprise the Proposed Building Layers

Building Layer	Summary	Material Aspect	Proposals
Site	The geographical location, context, external works, earth works and landscaping.	-	<p>Proposed tree and mixed shrub and herbaceous perennial planting on within the north-eastern and north-western boundaries of the building.</p> <p>The below ground drainage network has been designed in accordance with the requirements of the Building Regulations.</p> <p>A Pre-demolition Audit (PDA) is to be undertaken on the existing on-site building and will include a list of products and construction materials that could be reused on/off-site, reclaimed or recycled prior to demolition. However, a PDA was not available at the time of writing.</p>
Skin/shell e.g. façade	The layer keeping out water, wind, heat, cold, direct sunlight and noise. Includes exterior surfaces such as the roof, siding, sheathing and windows. This layer includes the façade (front or face of a building). This layer often has biggest impact on longterm durability, occupant comfort and building-energy performance.	External Windows	<p>Ground floor and first floor façade will have fixed glazing with dark grey PPC aluminium frames and automated bottom hung, inward opening windows.</p> <p>Upper levels will have unitised curtain walling façade which consist of:</p> <ul style="list-style-type: none"> 1,500 mm(w) x 1,600 mm(h) metal cladding with 50 mm(w) x 50 mm(d) vertical ribbed profile in PPC aluminium dark grey finish. Rigid insulation and plasterboard dry lining; Glazing panels with framing in PPC dark grey finish; Flush-fitted all glass look bottom-hung inward opening window mechanically operated in PPC aluminium dark grey finish; and 2No. 150 mm projecting metal fin in PPC aluminium dark grey finish. And a 450 mm projecting deep metal fin in PPC aluminium dark grey finish.
		External Soffit	Precast concrete slab to form soffit. Insulation fitted below slab with perforated aluminium cladding panels in bronze finish.
Structure/ structural frame/ superstructure	Load-bearing elements above plinth including roof-supporting structure. Generally, it is the longest-lasting building element. Insulation and services may be embedded here.	Columns	Exposed pre-cast concrete columns.
		Walls	<p>Core walls to be concrete and exposed, to structural engineer's design and specification.</p> <p>Internal walls to be metal C studs with plasterboard and dry lining Internal walls The fire proof duration will meet the fire engineer's fire strategy drawings.</p> <p>Fixed glazed panels with aluminium framing in dark grey finish to elevator lobbies and business lounge.</p>

Buliding Layer	Summary	Material Aspect	Proposals
		Frame	Concrete
		Upper Floors	Concrete
		Roofs	Concrete deck with light weight steel structure to support plant screen and PV panels.
		Stairs and ramps	Concrete pre-cast stairs
		External walls	<p>Typical walls on ground and first floor for offices will be:</p> <ul style="list-style-type: none"> Dark grey brick in English bond. Insulation within void and blockwork with plasterboard and lining; Flemish bond hit and miss brick detail. Dark grey finish to plant rooms where ventilation is required; Corbelled brick string-course detail. Full brick and half brick (dark grey) projection; and 50mm(w) x 50mm(d) vertical ribbed metal panel with concealed doors in PPC aluminium dark grey finish for plant rooms and refuse areas. <p>Typical walls on upper levels will be:</p> <ul style="list-style-type: none"> Metal cladding with 50mm(w) x 50mm(d) vertical ribbed profile in PPC aluminium dark grey finish. Rigid insulation and plasterboard dry lining (part of the unitised cladding system); and Fixed glazing with shadow box detail. <p>Roof Level to be PPC aluminium dark grey chevron profiled vertical louvre to plant screen/extended parapet.</p>
		External doors	<ul style="list-style-type: none"> Integrated all glass doors, centred on the bay; Glazed entrance door with aluminium frames in PPC aluminium dark grey finish; Glazed circular sliding door with aluminium frames in PPC aluminium dark grey finish; and Glazed sliding door with aluminium frames in dark grey.
		External Balustrade	<ul style="list-style-type: none"> Galvanised steel flat bar balustrade/railing detail in PPC dark grey finish; and Expanded mesh / perforated metal balustrade in PPC aluminium dark grey finish.
Substructure	Excavations, foundations, basements and ground floors.	Foundations	Reinforced concrete to structural engineer's design and specification.
		Floor Types	Concrete slab raised metal access floor with 100 mm service zone on top of the slab.

Buliding Layer	Summary	Material Aspect	Proposals
Services (building)	Installations to ensure comfort, practicality, accessibility and safety, including plumbing, heating, cooling, ventilation and electrics.	Ventilation	Galvanised steel ductwork; rockwool insulation.
		Air Handling Unit	Closed section, corrosion resistant aluminium 6063-T6 / 6063A-T6 pentapost framework (100Mpa min. tensile). Fully welded corners inside and out with welded angular gusset piece to form a rigid frame. 'Tray-in-tray' double skinned panel external 200µ PVC top coat finish and internal hot dipped galvanised steel Z275.
		Diffuser	Mild sheet steel, powder coated.
		Pipework	Phenolic foam insulation.
		Sub Mains Cabling	Various sizes of Copper XLPE/SWA/LS0H Cabling
		Fire Alarm Cabling	Various sizes of Copper FP200 Cabling
		Containment	Galvanised steel cable ladder, tray, trunking, and conduit.
		Rising Busbar	Copper
Space/space plan/interior/interior space	The layout, internal walls and partitions, ceilings, floors, surface finishes, fixtures, doors, fitted furniture. Changeable without changing structure, services or skin.	Internal walls and partitions	<ul style="list-style-type: none"> Core walls to be concrete and exposed, to structural engineer's design and specification; Internal walls to be metal C studs with plasterboard and dry lining Internal walls. The fireproof duration will meet the fire engineer's fire strategy drawings; Blockwork walls to plant rooms, bin and cycle stores; Internal Glazed Screen; and IPS Panels within water closets; and Fixed glazed panels with aluminium framing in dark grey finish to elevator lobbies and business lounge.
		Floor Finishes	<ul style="list-style-type: none"> Porcelain tiles to ground floor reception, vinyl flooring to ground floor flexible use areas and within the core lobby; Concrete with paint finish to the back of house and plant rooms; and Carpet to office areas.
		Wall Finishes	<ul style="list-style-type: none"> Wall paint to office areas and core walls; Wall tiling to bathrooms; Timber acoustic wall panels to office area and flexible areas; and Vinyl wall covering.
		Ceilings	<ul style="list-style-type: none"> Exposed concrete ceiling; and

Buliding Layer	Summary	Material Aspect	Proposals
			<ul style="list-style-type: none">Suspended acoustic panels.
		Internal Doors	<ul style="list-style-type: none">Timber doors with adequate fire rating to accord with the fire engineer's strategy; andGlazed fire rated doors to core areas (entrance to office suites).
Stuff/contents	Anything that could fall if the building was turned upside down. Not permanent, easily movable, most frequently changed by occupant, e.g., appliances, lamps, electronics, furniture, art.		This is not currently within the Applicant's control and will be determined at a later stage.
Construction materials	Any temporary installations/works/materials, packaging and equipment.		At this stage of design, there is no further information available on construction materials beyond what is set out above.

2.10 As well as the materials set out in **Table 2.1**, the following will be undertaken in relation to areas of the existing buildings which are to be retained (No. 56 – 58 Lever Street):

- Retained facade will be cleaned and made good;
- Dark grey glazed ceramic tiles will replace existing timber cladding to ground floor areas;
- New aluminium windows in polyester powder coating (PPC) dark grey finish to replace existing windows;
- Existing windows to be removed and left open to retained facade areas. Cills, lintels and reveals to be made good generally. Discrete low profile aluminium cill will be introduced where required;
- Brick infill will be constructed between retained facade and the new office tower. The brick colour will be dark grey to match the new office tower;
- White painted brick will be provided to match the existing façade; and
- Metal cladding infill with secret fixings to the ground floor area. Galvanised steel reveals and soffit to entrance area with recessed gate detail.

3. LEGISLATION AND POLICY CONTEXT

National Policy and Guidance

National Planning Policy Framework (NPPF)

- 3.1 The NPPF⁴, which was most recently updated in December 2023, sets out the planning policies for England.
- 3.2 Paragraph 7 of the NPPF states that “*The purpose of the planning system is to contribute to the achievement of sustainable development*”. Among the environmental objectives set out within Paragraph 8 of the NPPF, the most relevant to this CES are “*using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy*”.

Waste Hierarchy

- 3.3 Article 4 of the revised EU Waste Framework Directive (2008) sets out 5 steps for dealing with waste, ranked according to environmental impact. The waste hierarchy shows that prevention offers the best environmental outcome and is the highest priority, followed by preparing for re-use, recycling, other recovery and finally disposal.
- 3.4 The waste hierarchy has been transposed into UK law through the Waste (England and Wales) Regulations 2011, meaning that all businesses or organisations that produce or handle waste must take all reasonable steps to prevent waste and apply the waste hierarchy to any waste that is produced.
- 3.5 The Waste Hierarchy is shown in Table 3.1.

Table 3.1: The Waste Hierarchy

Stages	Examples (as provided by DEFRA)
Prevention	<ul style="list-style-type: none">Using less material in design and manufacture.Keeping products for longer; re-use. Using less hazardous materials.
Re-using on-site / Preparing for re-use off-site	<ul style="list-style-type: none">Checking, cleaning, repairing, refurbishing, whole items or spare parts.
Recycling	<ul style="list-style-type: none">Turning waste into a new substance or product.Includes composting if it meets quality protocols.
Other Recovery	<ul style="list-style-type: none">Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis.
Disposal	<ul style="list-style-type: none">Landfill and incineration without energy recovery.

⁴ Ministry of Housing, Communities & Local Government (2023) 'National Planning Policy Framework'. Available from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Our Waste, Our Resources: A Strategy for England

- 3.6 The Our Waste, Our Resources: A Strategy for England⁵ document sets out how the Government will preserve the England's stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy.
- 3.7 According to this Strategy, by prolonging the lives of materials and goods, society can move away from the inefficient 'linear' economic model of 'take, make, use, throw' towards a more circular economy through which resources will be in use as long as possible so that maximum value can be extracted from them.
- 3.8 The two key objectives of this Strategy are:
- To maximise the value of resource use; and
 - To minimise waste and its impact on the environment.

Circular Economy Package Policy Statement

- 3.9 The Circular Economy Package Policy Statement⁶ produced by Defra introduced a revised legislative framework, identifying steps for the reduction of waste and establishing a long-term path for waste management and recycling.
- 3.10 This Policy Statement committed to recycle 65% of municipal waste and to have no more than 10% of municipal waste going to landfill by 2035.

National Guidance: UK Green Building Council (GBC) Circular Economy Guidance

- 3.11 The UK GBC Circular Economy Guidance⁷ was designed to enable construction companies to include more ambitious circular economy design and construction principles for the non-domestic built environment.
- 3.12 This is achieved by addressing the common commercial obstacles that developers may encounter, and providing practical support and evidence to assist them in setting clear circular economy objectives for their projects.
- 3.13 The UK GBC guidance follows the following circular economy principles:
- Reuse;
 - Design Buildings for Optimisation;

⁵ HM Government (2018) 'Our Waste, Our Resources: A Strategy for England'. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

⁶ Defra (2020) 'Circular Economy Package Policy Statement'. Available from: <https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement>

⁷ UKGBC (2019) 'UKGBC Circular Economy Guidance'. Available from: <https://www.ukgbc.org/ukgbc-work/circular-economy-guidance-for-construction-clients-how-to-practically-apply-circular-economy-principles-at-the-project-brief-stage/>

- Standardisation or Modularisation;
- Servitisation and Leasing; and,
- Design and Construct Responsibly.

3.14 The guidance also aims to ensure that the construction supply chain can effectively deliver circular economy goals and that budget, project management, and timescale risks are minimised and mitigated.

Regional and Local Policy

Manchester Core Strategy 2012 – 2027

3.15 The Manchester Core Strategy 2012 – 2027⁸ sets the out the long term strategic policies for Manchester's future development and will form the framework that planning applications will be assessed against.

3.16 The following policies within the Strategy relate to waste:

- **Policy EN19 Waste:** This policy requires all developers to demonstrate the proposal's consistency with the principles of the waste hierarchy; and
- **Policy DM1 Development Management:** This policy states that all development should have regard for refuse storage and collection in the design.

Greater Manchester – Places for Everyone

3.17 The Greater Manchester – Places for Everyone⁹ Plan recognises the UK Government's focus on the creation of a circular economy.

3.18 Policy JP-S 7 – Resource Efficiency of this Plan states that “The achievement of a circular economy and a zero-waste economy will play a key role in meeting Greater Manchester's ambition of becoming a leading green city region by 2038. The following measures will help achieve this:

- *“Development and implementation of the Resource Strategy for Greater Manchester which promotes overall reduction in the level of waste produced and supports resource efficiency within the Plan area in order to gain the maximum value from the things we produce;*
- *Ensuring the design of all new development incorporates storage space to facilitate efficient recycling and where appropriate, processing of waste on site;*

⁸ Manchester City Council (2012) 'Manchester Core Strategy 2012 – 2027'. Available from: https://www.manchester.gov.uk/downloads/download/5672/core_strategy

⁹ Greater Manchester Combined Authority (2021) 'Greater Manchester – Places for Everyone'. Available from: <https://www.greatermanchester-ca.gov.uk/media/4838/places-for-everyone.pdf>

- *Recognition of the role of existing infrastructure in managing our waste and protecting such facilities to ensure adequate waste management capacity is maintained; and*
- *Using sustainable design and construction techniques to reduce carbon emissions, adapt and future proof to the impact of climate change, reduce and recycle waste and minimise water use".*

Greater Manchester - Sustainable Consumption & Production Plan 2022 – 2025

- 3.19 Greater Manchester - Sustainable Consumption & Production Plan 2022 – 2025¹⁰ sets out how Greater Manchester can contribute to becoming carbon neutral. Moving towards a circular economy is one of the four priorities of this Plan.
- 3.20 The Plan identified two main areas to focus on to ensure Greater Manchester can become a circular city: Industry; and Policy Development and Innovation.
- 3.21 The three points to address for Industry include:
- Sustainable Product Design - reducing the amount of raw materials within what is made, built and produced and reduce the amount of waste disposed;
 - Resource efficiency - moving away from the standard linear business models to promoting the benefits of different, more circular business models that maximise resource efficiency; and
 - Business to Business Approach - moving away from linear business models (make – use – dispose) and embrace circular business models.
- 3.22 The three points to address for Policy Development and Innovation include:
- Sustainable Procurement - moving to a full life cycle approach to ensure that negative impacts on the environment are reduced as much as possible;
 - Resource/Consumption mapping - understanding the raw materials being consumed within the city region; and
 - Innovation - tackling concern waste streams such as plastics, construction materials and textiles, to ensure those that those materials can either be reused or recycled, with sustainable end markets.
- 3.23 The Plan sets out the following targets to be achieved by 2035 in relation to municipal solid waste:
- A 38% reduction in industrial emissions by 2025 and a 50% - 77% reduction by 2038;
 - A reduction in raw material consumption;

¹⁰ Greater Manchester Combined Authority (2022) 'Greater Manchester - Sustainable Consumption & Production Plan 2022 – 2025'. Available from: <https://democracy.greatermanchester-ca.gov.uk/documents/s21049/21%20SCP%20Plan%202022-25%20Final%20V2.pdf>

- A recycling rate for municipal solid waste of 65% and no more than 10% sent to landfill by 2035;
- Reduction in avoidable food waste working towards the Government's Resources and Waste Strategy ambition of eliminating avoidable waste of all kinds by 2050; and
- Reduction in residual waste sent to landfill and incineration.

4. IMPLEMENTING A CIRCULAR ECONOMY

- 4.1 A circular economy is one where materials are retained in use at their highest value for as long as possible and are then re-used or recycled, leaving a minimum of residual waste. Thus, turning waste into a resource is part of 'closing the loop' in circular economy systems. A circular economy saves resources, increases the resource efficiency of businesses and projects, and helps to reduce carbon emissions. It builds overall system health by decoupling economic activity from the consumption of finite resources. This should be underpinned by a transition towards renewable energy sources.

"All developments should be designed so that buildings can be adapted to extend their life. They should also be designed so they can be deconstructed and reconstructed to allow components and materials to be salvaged for reuse or recycling, whilst maintaining their economic and environmental value (GLA, 2020)".

- 4.2 The six CE principles, which should be a fundamental part of the building design process, have been set out in Section one of this CES.
- 4.3 **Figure 4.1** sets out a hierarchy for building approaches that maximises the use of existing materials. Diminishing returns are gained by moving through the hierarchy outwards, working through refurbishment and re-use through to the least preferable option of recycling materials produced by the building or demolition process. This provides an overall strategy for the re-development of buildings, with retention as the starting point.

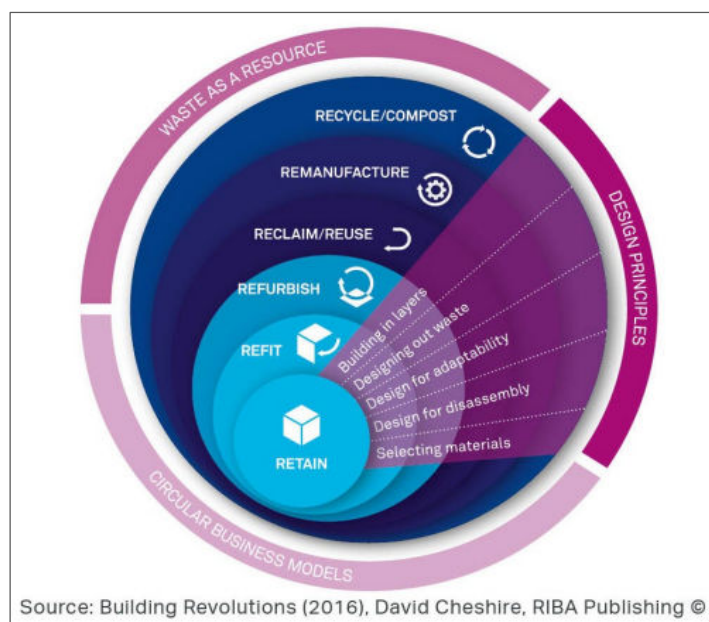


Figure 4.1: CE Hierarchy for Building Approaches (GLA, 2020)

Approach and Limitations

- 4.5 Circular economy design approaches are not mutually exclusive. Multiple approaches are expected to be adopted for each project, development aspect, layers or uses, particularly for larger developments. As neither MCC nor Greater Manchester Combined Authority have produced guidance on how to undertake a CES, guidance produced by the Greater London Authority (GLA) in 2022¹¹ has been considered in the preparation of this CES. The CES requirements for different application types is presented in **Appendix 2**.
- 4.6 The exact materials to be used for each element of the Proposed Development during construction is not available at this stage. However, indicative materials have been provided by the architect (Howells) building engineers (Atelier Ten) based on the most current design information (see **Table 2.1**). Once the exact materials to be used are known, an end of life strategy should be produced which includes targets for the re-use and/or recycling of these materials.
- 4.7 Particularly important information to include for a CES are 'building layers' (see **Table 4.1**) or elements that are likely to be decided early on (for example site, structure and skin/shell) and which have the longest lifespans or will be changed less frequently. The principles support the application of the waste hierarchy in that avoiding or reducing waste is prioritised.
- 4.8 It is considered that the Applicant has provided as much information as possible to ensure the CE principles and targets are embedded early in the design process.
- 4.9 For the six CE principles to be successful, a whole building lifecycle approach is required. Therefore, the goals of this CES are closely linked with the approach of all architecture,

¹¹ GLA (2022) 'Circular Economy Statement Guidance'. Available from: <https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/london-plan-guidance/circular-economy-statement-guidance>

engineering, energy, drainage and waste documents which have been submitted to support the application.

- 4.10 The commitments to manage quantities of materials, resources and waste as set out in the above documents will underpin the structure and content requirements of this CES.
- 4.11 BWB have liaised with members of the Project Team to confirm the principles, commitments and targets of the Proposed Development and to ensure that the principles of the circular economy are incorporated into the Proposed Development , where possible.
- 4.12 This collaboration with the Project Team has resulted in the targets and commitments set out below.

Targets and Commitments

- 4.13 The Proposed Development will be designed to retrofit, refurbish, repurpose and re-use to ensure the proposal achieves a circular economy in its design and construction. A regular construction grid will be applied to the Tech Hub and Creative Hub, which could accommodate for future uses extending the buildings life cycle. The central core enables the building services strategy easily rise throughout the building. Generous floor to ceiling heights offers a wide range of future building use types to be accommodated. The building form, massing and structural solution allows the opportunity for vertical extension of the building that further future proofs the asset to provide additional floor space and accommodation. Opportunities for disassembly have also been explored as part of the buildings design evolution. This is being achieved through the buildings stick curtain wall system that can easily deconstructed and disassembled for material recovery and potential re-use.
- 4.14 **Table 4.1** below provides an overview of the circular economy design principles, the targets and commitments of the Proposed Development and the reports / documents within which these targets and commitments are stated, where relevant.

Table 4.1: Circular Economy Targets and Commitments

Aims	Strategy	Site	Skin/shell e.g. façade	Structure/ structural frame/ superstructure	Substructure	Services (building)	Space/space plan/interior/ interior space	Stuff/contents	Construction materials
Minimise the quantities of materials used	The Proposed Development has been designed to utilise materials in as efficient a manner as practicably possible.	<p>Material efficiency will be achieved through:</p> <ul style="list-style-type: none">• Designing to standard material dimensions;• Use materials with a high recycled content;• Avoid over specification;• Optimise the design of foundations; and• Use pre-assembled / prefabricated components, where possible. <p>The following specific measures will be implemented as part of the Proposed Development to minimise the quantities of materials used:</p> <ul style="list-style-type: none">• Building Life Cycle Assessments will be completed at RIBA Stages 2 and 4 to determine if low carbon solutions are available;• Material efficiency reporting will be undertaken throughout RIBA Stages 1-6;• A PDA will be carried out in order to inform material reuse and recycling;• Recycled and locally sourced aggregates standards targeted as per BREEAM Mat 02; and• Finishes will be specified by the future tenants rather than show areas. <p>The BREEAM Pre-Assessment (Atelier Ten, 2024), a total of three out of the four available BREEAM credits will be targeted in relation to 'Wst 01 - Construction waste management'. As part of achieving these credits, a Resource Management Plan will be produced. The one available BREEAM relating to 'Wst 02 Recycled aggregates' will also be targeted, which will mean the use of recycled and secondary aggregates during construction and reduce the demand for virgin material and optimise material efficiency in construction.</p>							
Minimise the quantities of other resources used	<p>During the construction phase, the Principal Contractor will be responsible for setting targets for energy and water consumption through the following, where possible:</p> <ul style="list-style-type: none">• Avoid using fossil fuels;• Use renewable energy sources;• Use energy efficient plant and equipment; and• Ensure plant and equipment are turned off when not being used. <p>During the operational phase, measures will be implemented to reduce: water consumption; energy generation and consumption; and greenhouse gas (GHG) emissions. Measures will also be implemented to increase energy efficiency.</p>	<p>The Applicant aims to mitigate the potential impact of the Proposed Development by addressing key sustainability issues and incorporate a range of procedures to maximise resource efficiency and minimise waste during both construction and operation.</p> <p>During construction, the team will investigate further measures to reduce use of resources, such as packaging. The use of water, electricity and fuel should be monitored to track performance throughout construction, with decisions being taken considering these KPIs. This commitment to monitoring will be confirmed upon the appointment of contractors.</p> <p>Three out of the five available BREEAM credits associated with Wat 01: Water Consumption are being targeted, which, if achieved, would result a 40% water reduction compared to the Building Research Establishment (BRE) baseline. Achieving these credits is also likely to result in achieving the following flow rates and flush volumes:</p> <ul style="list-style-type: none">• WCs 3.75l/flush;• Wash-hand basin taps - 5l/min;• Showers - 6l/min;• Urinals - 2 l/bowl/hour;• Kitchen taps: kitchenette - 6l/min; and• Kitchen taps, pre-rinse nozzle - 7.30l/min. <p>The following will be implemented during the operational phase of the building to contribute to a circular economy:</p> <ul style="list-style-type: none">• Energy generation will follow the energy hierarchy (i.e. Be Lean, Be Clean and Be Green);• Approximately 100 m² of solar PV arrays will be installed on the roof which will have 22.6% efficiency and have a south orientation to maximise energy produced;• The main source of heating/cooling will be through Air Source Heat Pumps (ASHPs);• Water consumption will be reduced by a minimum of 40% against the BREEAM baseline through the use of water efficient components;• Primary energy consumption will be reduced by 15.4% against the Part L baseline through energy saving measures such as: designing with low U-values, g-values and low air leakage rates; optimising the facades so that heat losses are minimised; positioning of openings so as to maximise the use of natural light within each space; demand controlled ventilation; use of high efficiency lighting.							
Responsible Sourcing	As part of the BREEAM Assessment the Principal Contractor will be required to source materials in accordance with a Sustainable Procurement Plan.	N/A	<p>According to the BREEAM Pre-Assessment document (Atelier Ten, 2024), all six available credits relating to 'Man 03: Responsible Construction Practices' will be targeted. Should all credits be achieved, this will mean that 100% of timber procured will be legally harvested and traded.</p> <p>The BREEAM Pre-Assessment document also states that three out of the four available credits relating to 'Mat 03: Responsible Sourcing of construction products' will be targeted.</p> <p>Furtherthermore, the following should be adhered to:</p> <ul style="list-style-type: none">• Major construction materials (i.e. concrete, glass, gypsum, metal, stone and aggregates) will be BES 6001 certification.						

Aims	Strategy	Site	Skin/shell e.g. façade	Structure/ structural frame/ superstructure	Substructure	Services (building)	Space/space plan/interior/ interior space	Stuff/contents	Construction materials
			<p>The Contractor will endeavour to implement targets of increasing the recycled content of materials such as concrete, blockworks, insulation, carpet tiles etc. They will be cross checked by the Project Team in line with commercial viability. Recycled materials with low embodied carbon will be preferred. Materials suppliers that have an established Environmental Management System (EMS) will be preferred.</p> <p>The following commitments have also been made:</p> <ul style="list-style-type: none">• 100% of timber will be legally harvested and traded timber and will be FSC or PEFC certified;• 100% of concrete will be BES 6001 certified;• Steel will be sourced from suppliers rated under the CARES Sustainable Constructional Steel Scheme, where possible; and• Other major construction materials will be certified under an Environmental Management System (EMS) such as ISO 14001.						
Design for reusability / longevity / adaptability / flexibility	It is vital that the building is constructed to maximise the life of the component parts. It is inevitable that component parts will need to be repaired over the lifetime of the Proposed Development. Therefore, it is important that parts which are easily repaired are chosen to reduce the need for replacement.	N/A	<p>In order to ensure that circular economy principles are embedded within the construction process, the Proposed Development aims to meet long-term needs whilst being durable and resilient. It should be able to cope with change from, for example, climate change or different ways of living.</p> <p>Material specifications and procurement will aim to achieve durability standards. Materials are to be demountable and recyclable where practicable. Off-site prefabrication and design for modularisation / standardisation will be promoted and maximised where possible to ensure ease of maintenance and repair/replacement during operation.</p> <p>The one available BREEAM credit for both Mat 05: 'Designing for Durability and Resilience' and Mat 06: 'Material Efficiency'is being targeted. Furthermore, the one available credit for Wst 05: 'Adaption to Climate Change' and the two available credits for Wst 06: 'Design for Disassembly and Adaptability' are also being targeted. Achieving these credits would ensure that:</p> <ul style="list-style-type: none">• Vulnerable parts of the building are protected from damage;• Exposed parts of the building are protected from material degradation;• The use of materials in building design, procurement, construction, maintenance and end of life will be optimised;• A Climate Chage Adaptation Strategy will be undertaken in accordance with requirements for Wst 05: 'Adaption to Climate Change' to ensure structure, fabric, building services and renewables installation would be resilient to climate change;• A study to explore the ease of disassembly and the functional adaption potential of different design scenarios by the end of Concept Design will be undertaken; and• A building adaptability and disassembly guide will be produced.						
Designing out construction, demolition, excavation waste arisings	<p>A PDA will be undertaken and materials will be segregated by type to ensure that material from the demolition works is recovered and used on site as either fill material or a piling mat. Any residual material will be sent to a material recycling facility that specialises in construction and demolition waste.</p> <p>The following measures will be implemented to minimise waste generation during the construction phase:</p> <ul style="list-style-type: none">• Design for Manufacture and Assembly;• Use modular construction;• Use standard construction components; and• Consistent design to minimise need for supply of materials.	<p>The appointed demolition contractor should endeavour to salvage natural stone, bricks, and good quality items of timber and top soil. Salvaged materials can be donated to local businesses, construction colleges and community groups where appropriate. The construction of the Proposed Development will aim to re-use as many suitable materials on-site as possible. Where materials cannot be re-used, they will be sent off-site for re-use and refurbishment elsewhere if possible, instead of being transported to landfill by waste carriers.</p> <p>Recovery of materials and products on-site could include:</p> <ul style="list-style-type: none">• Concrete: crushed and recycled to be used as sub-base below hard landscaping; and• Electrical infrastructure such as reducant wiring. <p>During construction, the team will work together to maximise the value and quantity of materials recovered for potential reuse and recycling. This will include encourage efficient use of materials by applying lean design principles, using reclaimed materials, and components, and substituting high replacement cycle materials with more robust materials. The appointed contractor(s) will continue review the reuse and recovery of materials and components such as identifying local uses and/or disposal of waste and material arisings where feasible.</p> <p>The following targets have been set to minimise construction, demolition, excavation waste:</p> <ul style="list-style-type: none">• An overall target of at least 95% diversion from landfill of waste during demolition, excavation and construction has been set; and• An overall target of less than 7.5 m³ of construction waste per 100m² of gross internal area has been set. <p>Two basement levels are proposed. However, the volume of excavated waste expected to be generated is unknown at the time of writing.</p>							
Manage demolition waste	A PDA is to be undertaken on structures to be demolished. The PDA will include a list of products and construction materials that could be reused either on or off-site, reclaimed or recycled prior to demolition. This will inform the aspiration to ensure that the maximum amount of demolition waste is reused or recycled.	<p>The value and quantity of materials recovered for potential reuse and recycling during demolition will be maximised.</p> <p>All waste should be further segregated and sorted off-site prior to recycling in order to minimise the amount of material sent to landfill. Mixed waste collected from the Site will be segregated off-site at a local transfer station,</p>	N/A						

Aims	Strategy	Site	Skin/shell e.g. façade	Structure/ structural frame/ superstructure	Substructure	Services (building)	Space/space plan/interior/ interior space	Stuff/contents	Construction materials
		<p>where all materials will processed through a material recycling facility.</p> <p>During the demolition there are likely to be waste streams that are considered non-recyclable such as asbestos waste and bitumen roofing.</p> <ul style="list-style-type: none">• A target of at least 95% diversion from landfill;• A minimum target of 7.5m³ of demolition waste has been set; and• Any demolition waste that is unsuitable for reuse on-site will be managed by a private contractor, who will transport the waste to a nearby construction waste Materials Recycling Facility (MRF).							
Manage excavation waste	<p>Any excavated waste will be managed in accordance with the waste hierarchy and will be reused on-site where possible, including the reuse of topsoil and subsoil. Any excavated waste that cannot be reused on-site, will be reused or recycled off-site where possible. Any unsuitable or hazardous excavated waste will be managed appropriately by a private waste contractor.</p>	<p>The Proposed Development will encourage on-site reuse and recycling of excavation waste where possible. Excavated materials will also follow the waste hierarchy.</p> <p>Only if excavated material is not required or is unsuitable / considered hazardous for the construction of the Proposed Development would it be considered waste.</p> <p>The appointed Contractor(s) should ensure that contaminated material (if present and requiring removal from the Site) would be collected by suitable waste carriers and sent for disposal at appropriately licensed hazardous waste facilities.</p> <ul style="list-style-type: none">• A target of at least 95% beneficial use of excavation waste has been set; and• Any excavation waste that is unsuitable for reuse on-site will be managed by a private contractor, who will transport the waste to a nearby construction waste MRF.				N/A			
Manage construction waste	<p>The following measures will be employed where practicable during the construction phase to minimise the amount of construction waste created and comply with the waste hierarchy:</p> <ul style="list-style-type: none">• Use suppliers who limit the amount of packaging of their products and who, ideally, participate in a packaging take-back scheme;• Use prefabricated or off-site manufactured components;• Avoid potential damage to construction materials by implementing a 'just-in-time' material delivery system;	<p>The proposed approach to management of construction waste is to follow the waste hierarchy and circular economy hierarchy. The Proposed Development will aim to minimise the total amount of construction waste produced on-site through best practice material handling procedures.</p> <p>Appropriate materials storage and handling on-site will help to reduce the amount of waste produced at source. Careful segregation of waste will occur where space allows on-site, which enables higher quality recycled materials and encourages local reprocessing. This will help to improve the transparency of waste processing and confidence in the end use of waste materials. The contractor will be tasked with maximising the segregation of construction waste to enable local reuse of waste materials and increase the quality of recyclable materials. This procedure will be set out in a Site Waste Management Plan with the aim of meeting the 95% diversion from landfill target. During construction, the construction team will work with suppliers to further investigate packaging reduction measures.</p> <p>The construction team will also work with suppliers to further investigate the recovery or reuse of remaining timber. Periodical environmental inspections should take place with KPIs to be monitored. The KPIs should include waste generation, segregation and diversion from landfill. These commitments will be confirmed once a contractor has been appointed.</p> <ul style="list-style-type: none">• An overall target of at least 95% diversion from landfill of construction waste from landfill has been set;• An overall target of less than 7.5 m³ or of construction waste per 100m² of gross internal area has been set; and• Any construction waste that is unsuitable for reuse on-site will be managed by a private contractor, who will transport the waste to a nearby construction waste MRF.							

Aims	Strategy	Site	Skin/shell e.g. façade	Structure/ structural frame/ superstructure	Substructure	Services (building)	Space/space plan/interior/ interior space	Stuff/contents	Construction materials
	<ul style="list-style-type: none">• Avoid the over-ordering of materials by maintaining an inventory of stored materials;• Provide separate waste storage skips for different waste streams to allow easy segregation of waste on-site; and• Reuse or recycle any residual materials off-site where possible								
Manage municipal waste	<p>British Standards (BS5906-2005) have been followed to ensure that an appropriate amount of waste storage bins will be provided during the operational phase. This waste will be collected twice a week.</p> <p>Waste will be stored within a refuse store on the ground floor of the building. The refuse store is located on the Houldsworth Street frontage and will be collected by a refuse vehicle along Lever Street.</p>	<p>According to Envirowise, a Government-funded programme dedicated to putting the sustainable use of resources at the heart of UK business practice, approximately 70% of office waste is recyclable but only 7.5% actually gets recycled.</p> <p>Following calculations done in accordance with BS5906-2005 - Waste management in Buildings - Code of practice, a total of 44,632 litres of waste per week will be produced during the operational phase of the Proposed Development based on the assumption that there will be 893 employees working within the building. Although this amount of waste would usually require 20 No. 1,100 litre bins to accommodate this amount of waste, it is proposed that a compactor is provided to compact this waste. This compaction of waste would result in the need for only 5 No. 1,100 litre bins. Both the compactor and the 5 No. bins would be housed within the proposed waste storage area on the ground floor of the building.</p> <p>The following should be done during operational phase to help maximise the recycling rate of waste:</p> <ul style="list-style-type: none">• Provide small recycling bins for paper, glass and recyclable plastic within each office or room; and• Send periodic emails to staff within each office reminding them of the recycling facilities provided. <p>Reporting on the amount of waste being reused, recycled or sent to landfill should be done periodically during the operational phase,working towards a target of at least 70% of waste being recycled.</p>							

End of Life Phase

- 4.15 The end of life phase should be considered during the design of the Proposed Development to adhere to circular economy principles. Therefore, to 'close off the loop' the materials and components used during construction should be selected with their reuse and / or recyclability at the end of life phase in mind.
- 4.16 The following will be considered during the design stage to maximise the reuse and / or recyclability of construction materials:
- Choose materials and components that can be remanufactured, reused or recycled at the end of life phase;
 - Choose components that can be easily disassembled;
 - Consider leasing short-lived components where possible;
 - Avoid permanent fixing of components to enable end of life deconstruction and salvage of building elements; and
 - Ensure fixtures are easy accessible to enable disassembly.
- 4.17 When the Proposed Development is nearing its end of life phase, the potential for extending its lifetime should be evaluated. Where this is possible, an inspection will be undertaken to determine which components of the Proposed Development will need to be refurbished or replaced to facilitate this extension.
- 4.18 Where a lifecycle extension of the Proposed Development is not deemed possible, a Pre-Demolition Audit inspection should be undertaken to determine which components could feasibly be reused or recycled.

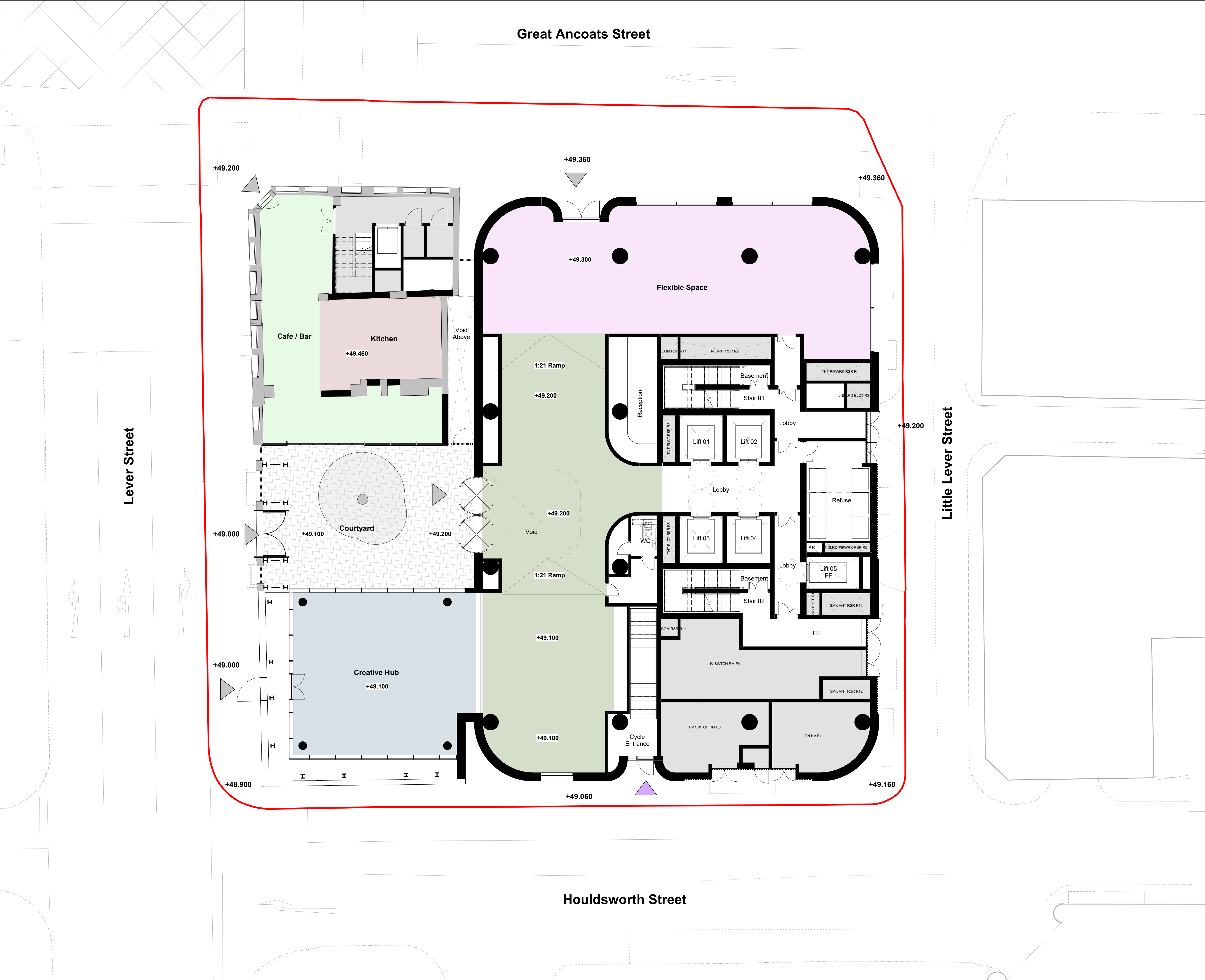
5. CONCLUSIONS

- 5.1 This CES has been prepared to demonstrate how the Proposed Development will deliver the principles of the circular economy.
- 5.2 This CES has included the following key targets and commitments for the Proposed Development to deliver the principles of the circular economy:
- A minimum BREEAM rating of 'Excellent' is being targeted;
 - Strategies have been developed to: conserve resources, eliminate waste through design and manage waste during the demolition, excavation, construction and operational phases in accordance with the waste hierarchy;
 - Any demolition, excavation or construction waste which is unsuitable for reuse or recycling will be managed by a private contractor and transported to a nearby construction waste MRF;
 - Construction materials and components will be sustainably sourced and will be chosen with their reusability, longevity, adaptability and flexibility in mind;
 - Measures will be implemented to reduce: water consumption; energy generation and consumption; and greenhouse gas (GHG) emissions during the operational phase. Measures will also be implemented to increase energy efficiency;
 - Targets have been set to maximise the amount of waste that is diverted from landfill during the demolition, excavation and construction phases;
 - British Standards guidance will be followed in the waste storage provision to ensure waste is managed appropriately during the operational phase. A target of 70% of office waste has been set;
 - A target to minimise water consumption during the operational phase has been set;
- 5.3 This circular economy approach for the Proposed Development includes assessment of design and materials at key stages of the development in order to promote a flexible and adaptable design that also promotes longevity. Certain design decision of materials was made with the whole life carbon in mind in order to reduce emissions associated with construction.
- 5.4 In this context some of the key circular economy commitments incorporated into the Design & Build (D&B) of the Proposed Development include the following:
- Ongoing encouragement of specifications that maximises energy and resource efficiency (e.g. water efficiency) within the design;
 - Ongoing investigation into the materials proposed for design;
 - Seek to specify the use of recycled materials wherever viable including steel content, aggregates, and building finishes such as carpets;
 - Utilise off-site prefabrication and precast concrete where possible;
 - Procurement of sustainable and robust/durable materials;
 - Continue to work with suppliers to reduce packaging waste or investigate take-back schemes; and

- Internal project targets and commitments will be reviewed by the D&B contractor, with the circular economy targets added as agenda item within regular team meetings.
- 5.5 At this later stage in design, the design team will continue to investigate opportunities to increase circularity of the design of the development. While some of the principles have been or are in the process of being implemented, as part of the D&B contract, the primary contractor will aim to ensure that where appropriate and viable, the principles will be carried through the remaining design and eventual construction.

APPENDICES

APPENDIX 1: Site Masterplan

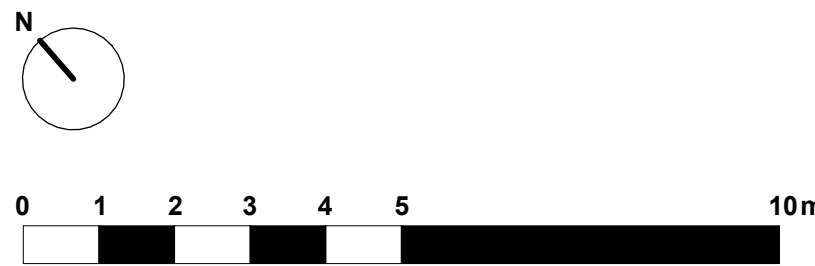
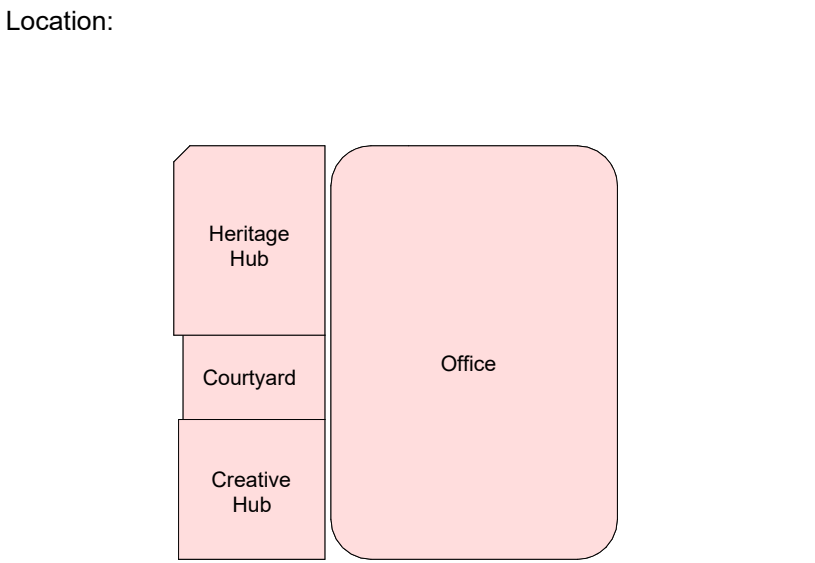


Notes & Key: HWS Ref: 2510

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- LEGEND**
- Planning Boundary
 - Existing Site Levels
 - Proposed Levels

- KEY**
- Office
 - F&B
 - Creative Hub (Office)
 - Business Lounge
 - Plant
 - Cycle
 - Shower & Lockers
 - Amenity Space
- Entrance
- Cycle Access



Status: **PLANNING**

Revision History:

P01	Design Freeze Issue	20/12/2023	DJ/MW
P02	Levels/Building Height Update	09/01/2024	DJ
P03	Design Freeze Issue 02	02/02/2024	DJ

Checked: AD

DRAFT

Project & Client:
Lever Street Manchester working with Soller Group

File Title: Proposed - Ground Floor Plan

Scale: 1 : 100 @A1

File ID: 2510-HWS-XXX-00-D-A-05100

Revision: P03

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APPENDIX 2: Circular Economy Statement Requirements by Application Type

Requirement by application stage (see relevant section of guidance for more information)	Pre-application stage (suggested)	Outline application [1]	Full application / reserved matters [2]	Post-construction	Checklist	Information Reference (Please indicate whether this has been included in the report to accompany this template or as a separate submission)
CE targets (see section 4.2)	Encouraged	Yes	Yes	Yes (Performance reported)		Evidence in CES template spreadsheet
CE design approaches (see sections 2.3 - 2.5 and 4.3)	Yes	Yes	Yes	N/A		Evidence in CES template spreadsheet
CE design principles (see sections 2.1, 4.4 - 4.5)	Yes	No	No	No		Evidence in CES template spreadsheet
CE design principles by building layer (see sections 4.5)	No	Yes	Yes	No		Evidence in CES template spreadsheet
Pre-redevelopment audit (see section 4.6)	Encouraged	Yes	Yes	N/A		
Pre-demolition audit (see section 4.6)	Encouraged	Yes	Yes	N/A		
Bill of materials (including calculations – see section 4.7)	No	Yes (Estimated)	Yes (Estimated)	Yes (Actual)		Evidence in CES template spreadsheet
End of life strategy (see section 4.7)	No	No	Yes	Encouraged		
Operational waste management plan (see section 4.8)	No	No	Yes	Encouraged		
Recycling and waste reporting (see Section 4.9)	No	Yes (Estimated)	Yes (Estimated)	Yes (Actual)		Evidence in CES template spreadsheet
Lessons learnt and key achievements (see section 4.10)	N/A	N/A	N/A	Yes		Evidence in CES template spreadsheet

[\[1\] Also applicable to the outline and detailed part of hybrid applications.](#)

[\[2\] Also applicable to the outline and detailed part of hybrid applications.](#)

