CIRCULAR ECONOMY STATEMENT
MAPLE AND POLAR S73 PLANNING APPLICATION – 16-01-23

Contents.

Background and Project Limitations with Regards Circular Economy Statements (CES)

The original planning application was for two mirrored residential blocks: Block A and Block B at the time of consent there was no requirement for a Circular Economy Statement (CES). Following further site survey it was discovered that a water main rain through the site of Block A requiring a 6m easement, this required a Block A to be redesigned in a similar material language to its sister, Block B, whilst mossing the water missing the water main. The re-design required a new planning S76 planning application requiring a CES.

Timing: i.e. the Policy implementation for CES, suspended relationships with the building designers and construction programme have hampered the normal sequence required for a in depth CES. The CES is required to start at pre-planning and be developed by all stakeholders, through the full planning and post development stages. This is not possible given the circumstances of the project It is therefore only possible to carry out a high-level strategic overview at this stage as key participants are no longer available, and the timing of the project.

Even with the limitations outlined this simple / high level CES remains a useful document to be carried forward to detail design and beyond, by focusing reviewing key elevation and roof elements and materials on the project:

- Below ground works design
- Brickwork
- Roof 3 ply 25 year warrantee
- Doors and Windows UPVC
- Balconies – glass

Summary of the approach to circular economy.

- 60 percent of all materials used in the UK are used in the construction and maintenance of the built environment. Material that has reached the end of its useful life is frequently kept out of the landfill, but is downcycled, lowering its value. There is growing industry agreement that we need to drastically change how we plan, construct, use, and dispose of our buildings and related facilities to reduce waste and boost productivity.
- Designing for adaptability, durability, and longevity while maximising the use of recycled and renewable materials could increase economic growth and innovation while lowering

greenhouse gas emissions. Reducing dependence on finite resources while replacing finite and fossil-based materials with sustainably sourced renewable materials can lower carbon emissions.

- The design team has evaluated opportunities for retaining and refurbishing/repurposing existing buildings, materials, and other resources on site to maximise the residual value of existing structures and conserve resources, reducing the need for new materials, before considering future waste elimination and sustainable waste management practises.
- The design and construction of any new structures built on the property will adhere to best practises with the overarching goals of utilising fewer resources, producing less waste, and incorporating sturdiness, flexibility, and adaptability.

Table 1: Circular Economy Strategic approach

Aspect	Building /Area	Steering approach	Explanation
Circular economy approach for the new development	Sub-structure	Minimise the quantities of materials used and minimise excavation required on site	Minimising the required material for the substructure by using lean design principles
	Superstructure	Minimise the quantities of materials used	Using lean design 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 on-site use of non-hazardous excavation material
Circular economy approach for municipal waste during operation	All domestic and non-domestic areas	Efficient management of operational waste	Appropriate refuse storage to enable recycling and best practise waste management.

Circular Economy Strategic Approach

Circular Economy considerations have formed a key part of the project sustainability strategy. It is recognised that in order implement Circular Economy principles most effectively. It is helpful to explore high level strategic opportunities early in the development process as possible.

Whilst the requirements for Circular Economy statement were not applicable to the original application the principles of circular economy were applied to this process through the general approach to sustainability. This forms the basis that assist project team to help craft holistic and consistent sustainability approach for the development. All providing a way forward for

considerations around resource efficient, material circulatory and ethical sourcing for an overarching sustainability strategy.

Moving forward the key strategic implementations for the scheme include the aspects as set out Table 2 below:

Table 2: Typical Circular Economy Strategic Approach

Aspect	Building /Area	Steering approach	Explanation
Circular economy approach for the new development	Sub-structure	Minimise the quantities of materials used and minimise excavation required on site	Minimising the required material for the substructure by using lean design principles
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Approach To The Circular Economy For The New Development

The building created on the property will adhere to best practises in terms of design and construction, with the overarching goals of utilising fewer resources, producing less waste, and including sturdiness, flexibility, and adaptability.

To maximise potential to incorporate circular economy ideas, the following focus areas have been reviewed:

- Lean design methodologies

- Material effectiveness

- Adaptability

- Flexibility

- Low-carbon building

- Offsite and modular building

- Design for Assembly and Manufacturing (DfMA)

- Reduction of excavation waste - Circularity of materials

- Purchasing materials through leasing frameworks

- Conscientious purchasing

- Responsible sourcing

- Using local vendors

- Supply chain participation

- Fabric and structural resilience

- Life-cycle evaluations

- Capability to disassemble and demount

The intended development is anticipated to last a long time and is most likely to continue as a residential development.

Plan for implementation

The main priority, in accordance with circular economy principles, is to extend the life of the building through careful design and specification.

Plans for implementing circular economy principles and meeting targets and commitments will be developed further at the detailed design stage. These will be as follows:

- creating a programme and outlining the method that will allow the development to meet long-term goals.

- Upon appointment, the main contractor will develop a site waste/resource management plan, which will be used to outline the development's progress against the shorter-term site waste targets.
- End-of-life disassembly strategies will be refined, including research into which elements can be reused, recycled, or composted.

End of life strategy

In accordance with circular economy principles, the main priority is to extend the lifetime of the building through careful design and specification, as well as to ensure that there is a clear process to follow if the building is to be deconstructed later.

Building components can be disassembled at the end of their useful life and reused in whole or in part as other permanent or temporary structures. This would be subject to their energetic and other material and component standards still being applicable, as well as whether their systems could accommodate new systems at that time. Or be recycled in another way if appropriate recycling centres are nearby and it is environmentally and economically appropriate and viable to do so at that time.

Prior to construction, an end-of-life strategy will be developed to describe how building materials, components, and products can be disassembled and re-used at the end of their useful life. This will include the manner in which the information will be communicated to future building users.

Simple Assessment of Key Elevation Materials:

The following is a simple assessment of key elevation and roof materials reviewed in line with Circular Economy principals in terms of use and reuse (reference should be made to the planning elevations):

- Below Ground Works Avoided

  The revised design avoided building on the underground water main saving significant cost and time by avoiding providing a new water main drain run. The principle of not demolishing

- Brickwork

  Although requiring a lot of energy to produce (hence greater embodied energy), however the choice of brickwork allows for a durable material with great longevity (over 150 years), and service life, as well as a degree of adaptability. Brick does not readily avail itself as a re-usable material and this remains a challenge to the industry.

- Roof 3 Ply With Bitumen Membrane

  Bitumous roof are made of made of asphalt combined with polymerized rubber or plastic, then reinforced with fiberglass to create a rugged-yet-flexible waterproof membrane. The use of asphalt being a petroleum derivative whilst being problematic can be recycled and re-used. The lifespan of such roof is usually 25 years.

- Doors and Windows (UPVC)

UPVC is mistakenly thought to be "unsustainable" but can be completely recyclable up to 10 times without deteriorating the material. It is as all building material and is by necessity extremely durable, low-maintenance, and composite doors and windows are very energy-efficient. Many systems have ISO 140001 accreditation. Industry regularisation on the proper recycling is still sporadic.

- Glass Balconies.

  Glass is 100% and infinitely recyclable. There are well established routes to re-use following end of life of glass elements.