Sustainability Brief for the King Alfred Regeneration Project

1. Upfront Carbon Target

The building must achieve a structural upfront carbon (A1-A5) of no more than 230 $kgCO_2e/m^2$ and a total upfront carbon (A1-A5) no more than the limit set out in the UK Net-Zero Building Standard. These figures represent an absolute upper limit, not a target. The contractor is expected to strive for a lower value through optimisation of structure, material efficiency, and use of low-carbon materials.

In addition to these limits, the operational (B6-B7) and whole life (A1-C4) for the entire building must also be assessed and reported. All carbon values must be provided at RIBA Stages 3 and 4, and verified post-completion, using a recognised methodology.

Proposed low-carbon strategies must not result in carbon burden-shifting - for example, reducing structural emissions at the expense of significantly increasing emissions in other elements or life cycle stages. A whole-building perspective must be maintained to ensure genuinely low-carbon outcomes.

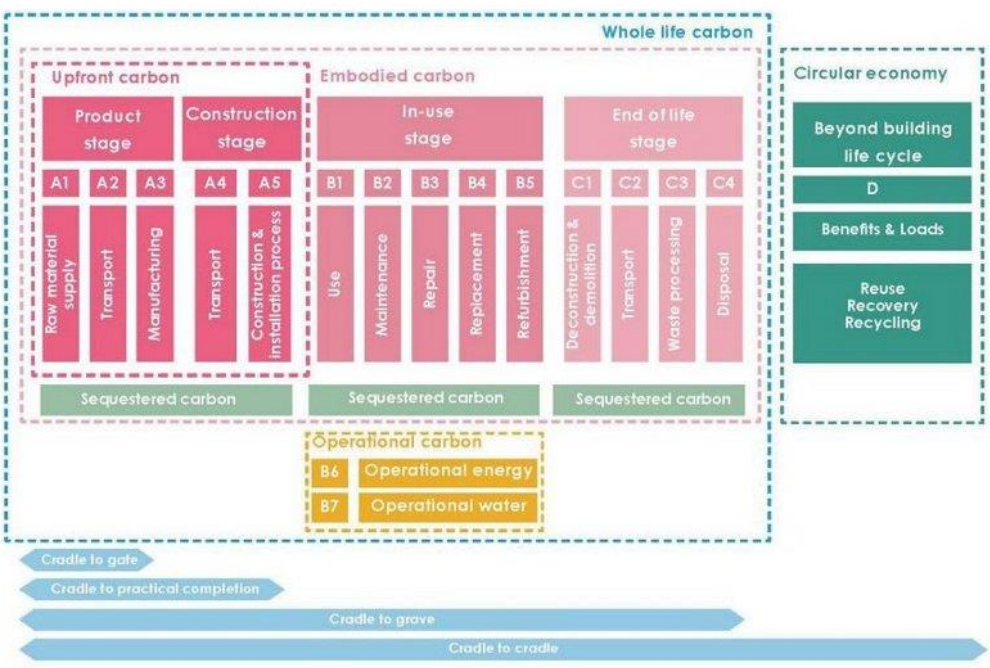

Figure 1 Life cycle stages

2. Sustainable Design Excellence and Civic Leadership

The design must reflect both current best practice and forward-thinking approaches in sustainable architecture and engineering. The building should visibly express the council's commitment to a low-carbon, climate-resilient future, acting as a

demonstration project for innovation and environmental responsibility within the community.

3. Circular Economy Principles

The project must prioritise circular economy principles, including:

- Selecting materials and systems that allow for future reuse, disassembly, and adaptability
- Utilising reused, reclaimed and repurposed materials (see item 4)
- Limiting composite or highly bonded materials that hinder future separation or recovery
- Deconstructing the existing building wherever possible, rather than undertaking wholesale demolition.

4. Use of Reclaimed and Recycled Materials

The design and construction must incorporate reclaimed, recycled, and site-won materials wherever technically and economically viable. This includes, but is not limited to, reclaimed structural steel, reused demolition arisings, recycled aggregates, and materials from council or contractor-held stockpiles. Consideration should also be given to reclaimed and recycled materials for non-structural elements of the building. The contractor must actively seek and incorporate reclaimed or surplus materials from:

- Other council-owned buildings and land
- Contractor stockpiles
- Third-party reuse schemes or suppliers.

5. Deconstruction and Demolition Waste Management

Components and materials from the existing building should be deconstructed rather than demolished wherever possible. These materials must be salvaged, sorted, graded, and reused, either within the project or elsewhere.

All demolition arisings must be carefully separated, graded and prioritised for reuse on-site. Where reuse on this site is not feasible, materials and components should still be considered for use on other council projects or within regional reuse networks before disposal is considered.

The client expects that only minimal material will be taken offsite for disposal, and that a proactive approach to reuse and circular resource management is demonstrated throughout.

6. Investigation of Existing Structure

The existing foundations and structural elements must be assessed at the earliest stage to determine reuse potential. These findings must be incorporated into structural design decisions.

7. Low Carbon Materials Specification

All materials used in the project must be specified and selected to minimise embodied carbon and environmental impact throughout their life cycle. This includes prioritising materials with proven low-carbon credentials and sourcing options that support circular economy principles. There is a preference for materials that store and sequester carbon.

Examples of approaches include, but are not limited to:

- Use of low embodied carbon concrete, incorporating alternative cement binders such as Limestone Calcined Clay Cement (LC3), and alkali-activated cements.
- Avoidance of materials with high carbon footprints or limited global availability (eg GGBS or PFA) that could cause unintended environmental impacts.
- Use of steel produced via electric arc furnace (EAF) processes or lower carbon blast furnaces
- Preference for materials with environmental product declarations (EPDs) and certification schemes demonstrating sustainability credentials.
- Selection of locally sourced, recycled, reclaimed, or sustainably harvested materials to reduce transport emissions and resource depletion.

The contractor shall collaborate with suppliers and the design team to optimise material choices to deliver the best environmental outcomes without compromising durability or performance.

8. Use of Timber and Engineered Timber (e.g. CLT)

Timber should be considered a primary structural and finishing material where appropriate. This includes the use of cross-laminated timber (CLT), glue-laminated elements, and sustainably sourced softwoods.

9. Sustainable Drainage Systems (SuDS)

The project must incorporate Sustainable Drainage Systems (SuDS) as a core part of the site-wide water management strategy. SuDS should be designed to:

- Manage surface water sustainably, reducing runoff rates and volumes to greenfield-equivalent levels or better
- Prioritise above-ground, nature-based solutions (e.g. rain gardens) over buried infrastructure wherever possible
- Use natural or low-carbon materials and maximise the multifunctional potential of landscape features
- Enhance site biodiversity and amenity value, contributing positively to the site’s ecological and community environment

SuDS must comply with local authority and national planning guidance and be designed for long-term maintainability. The contractor is expected to work collaboratively with the design team and landscape specialists to deliver solutions that align with the council’s climate resilience and sustainability objectives.