WHOLE LIFE CARBON ASSESSMENT BRIEF

Our embodied carbon targets are outlined in our Responsible Development Framework.

We recognise that our 2030 target is onerous and requires decarbonisation in the construction industry. We want to drive this decarbonisation through our projects and work with our Design and Construction teams to support us with this intent and provide innovative design solutions to help us achieve these targets.

Whilst our targets relate to upfront embodied carbon emissions, this is only the start of life for our buildings, and, therefore, whole life carbon assessments must be undertaken to ensure we are making design decisions that consider the durability, longevity and operational efficiency of the whole life of our buildings.

This brief sets out the base requirements and outputs for whole life carbon assessments instructed by Derwent London. It is recognised that each Consultant practice will have their own format/house style for presenting the results for their assessments; this brief is not intended to direct this, rather set out some of the basic parameters Derwent London requires.

It is envisaged that any assessment commissioned will be done so at the earliest opportunity with design advice and principles given at concept design stage, and a formal model from Stage 2, and run through to Stage 4 to capture the design development stage. The actual embodied carbon of the project is assessed during key milestones of Stage 5 up until Practical Completion (PC). Details of actual materials used on site will be provided by the appointed Contractor to inform the assessment process.

Requirements

Methodology

- It is necessary that all assessments undertaken must have their methods aligned to/conform with BS EN 15978:2011 Sustainability of construction works – Assessment of environmental performance of buildings – Calculation method and should align / conform with RICS Whole life carbon assessment for the built environment (second edition).

- With regards to datasets it is recognised that there are no formally endorsed databases/sets referenced by the above standard or others (outwith of Environmental Product Declarations [EPDs]), however it is recognised that there a number of well-used industry benchmarks and sources, which include:

    - The Bath ICE Database.
    - Proprietary databases and software packages such as SimaPro; OneClick, eTool and
    - Environmental Product Declarations (EPD's).
    - Environment Agency Carbon Calculator Tool.

- In addition to these, it is understood that many practices will have data obtained from other sources such as first principle studies based on research undertaken elsewhere. As a result it is to be made clear in the method description all the data sources used to complete the assessment – both primary and secondary, and their provenance and treatment i.e. how they have been used and the standards they conform to e.g. PAS 2050 or ISO 14040. Moreover, how issues such as recycled material allocation, cut-off's and end-of-life have been dealt with.

Reporting Frequency & Detail Level

- Stage 1 – carbon appraisal options to be presented during Stage 1. Design teams should focus on the significant embodied carbon influencers that cannot be changed at a later date (substructure, superstructure and core) to demonstrate higher and lower carbon options rather than full whole life carbon assessment. Embodied carbon budget to be set for each building element.

- Stage 2-4 – whole life carbon assessment. This should be presented at mid and end stage.
    - Significant design decisions must be presented with a carbon impact, alongside cost and programme. It is expected that discrete studies will be undertaken to demonstrate this impact during design and separate to the formal whole life carbon reporting.

- Timing:
    - Undertake draft whole life carbon using interim cost plan for end of stage presentation.
    - The final end of stage WLC report can follow two weeks after the final cost plan for that stage.

- Stage 5 – whole life carbon assessment. This is to be updated and presented as key packages are procured, as a minimum as follows:

    - Concrete (split between enabling works and main Contractor where applicable).
    - Substructure (steel etc.).
    - Brick & block walling.
    - Façade.
    - Building services (HVAC and lighting).
    - Raised access floor.
    - Fit-out (washrooms, paint, etc.).
    - Allowances for other elements.
    - End of each construction year model to be updated.

Assessment Boundaries & Metrics

- The boundary condition, reporting elements and units are in line with Derwent London's reporting template. This information should also be presented graphically.

- Commentary should also be provided explaining the results, significant findings, relationships etc.

- The assessment should also provide a benchmark comparison building(s) and compare to latest industry standards in order to effectively compare the results. Any benchmarks used should be as directly comparable as possible, however it is recognised that this may not always be possible. Therefore, it is acceptable to use a generic benchmark, however full explanation is to be given as to the make-up of the benchmark and its limitations.

Fit-out Carbon

Base-build design to demonstrate how it minimises embodied carbon impact of future fit out. Key considerations should respond to:

- Demonstrate how design requires minimal intervention / is flexible for variety of Cat B layout options.
- Minimal materials installed.
- Cat A inclusion discussion.
- Cat A omission to be included in ER documents & Stage 1 tender requirements.

Conclusions & Reduction Opportunities

- Within the conclusion section the top five reduction opportunities are to be presented together with their reduction potential against the total footprint. These opportunities should be practicable and realistic and in-line with the project objectives.

- Where opportunities identified have operational energy implications or require additional analysis using operational energy data to qualify them, these are to be brought to the attention of the Derwent London Development Manager and Sustainability Manager such that an appropriate decision can be made, as to whether these are to be pursued.

Building Carbon Database

The results from the assessment at practical completion are to be updated on the Built Environment Carbon Database website.