

2026

re:shape

Whole Life Carbon Assessment

Ashley Park

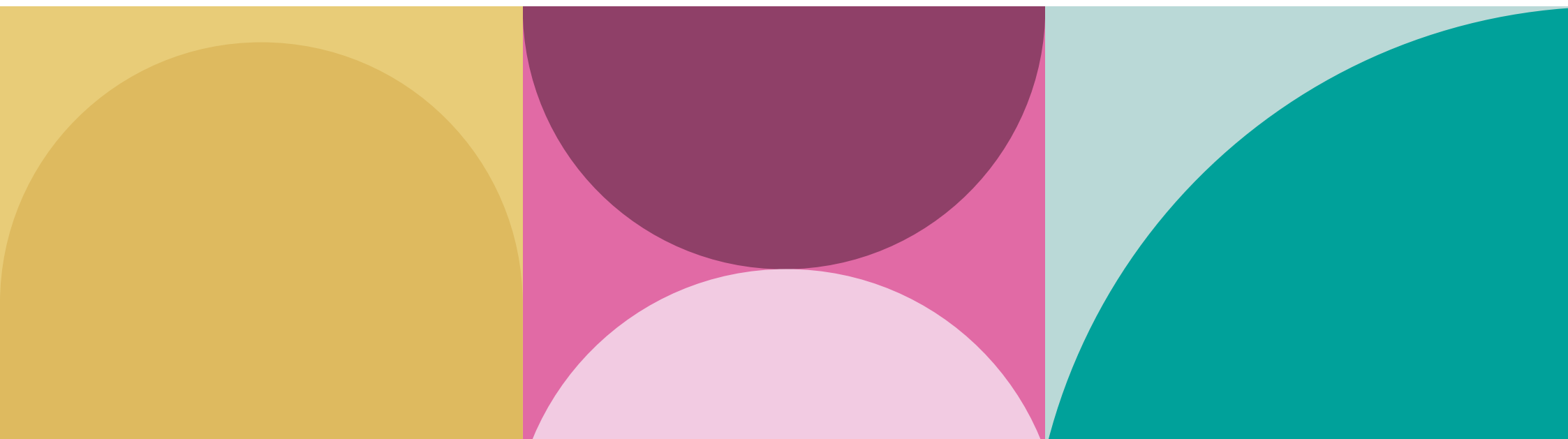




Stage 2

Whole Life Carbon Assessment

Ashley Park, Tottenham



About us

Carbon.Climate.Certified

Established for over 30 years, Carbon.Climate.Certified have grown into a leading UK based Sustainability Consultant, working on multiple award winning schemes in the UK and overseas.

We offer holistic sustainability and environmental impact services in the built environment, drawing on our experience in the rapidly evolving sustainability sector we help our clients to develop and implement a clear framework of service delivery, defining and achieving their sustainability goals.

We approach this in different ways to many in our field, with a strong commercial awareness, built on extensive experience which continues to expand and by attempting to steer an evolving sustainability movement in a positive direction. In recent years our core services have progressed into more strategic planning in the ESG space alongside our award winning accreditation services and we continue to offer consultancy on policy, social value and environmental performance to global brands and financial institutions across five continents. Our international client base includes some of the world's most successful organisations and the UK's most established institutions including Russell Group Universities, the National Trust, the NHS and some of the worlds largest companies including Amazon, Jaguar Land Rover, Blackstone and DHL.

We believe sustainability in the built environment at both organisational and project level must offer value and avoid where possible a 'box ticking' culture. This philosophy, when applied to environmental impact, sustainability strategies and carbon analysis has been recognised with multiple awards including BREEAM Assessor of the Year in 2013 & 2015, & highly commended in the category of Best Assessor company at the 2025 BREEAM Awards.

Our overarching aspiration is to provide our clients with ways in which they can aim to be responsible, to reduce their carbon emissions directly or indirectly and to safeguard the environment for future generations.

Author & Assessor Details

The report has been produced by Thea Brooman, a sustainability consultant and certified professional. Thea has experience conducting Life Cycle Assessments (LCAs) and Whole Life Carbon Assessments (WLCA's) for a diverse portfolio of projects. She holds an ARB Part 2 Master of Sustainable Architecture that equips her with the skills to interpret construction documentation, including Bills of Materials (BoMs), architectural drawings and energy modelling reports, allowing her to effectively perform Whole Life Carbon Assessments.

The report has been reviewed by Jade Cox, Associate at Carbon.Climate.Certified who has an MArch degree and over 8 years experience working directly in the field of Architecture, Sustainability and the built environment. Jade specialises in the field of Whole Life Carbon Assessments, Life Cycle Assessments and Circular Economy. She is also a qualified ESOS Assessor.

Executive Summary

Project Description

This Whole Life Carbon Assessment has been prepared by Carbon.Climate.Certified on behalf of Re:shape T Ltd ("the Applicant") in support of an application for planning permission submitted to the London Borough of Haringey. The application seeks planning permission for the following development at Former Ashley House site, Ashley Road, Tottenham Hale, London Borough of Haringey, N17 9LZ ("the Site"):

"Full planning permission for a phased mixed-use development comprising: (i) enabling works and operations; (ii) residential development (Use Class C3) including affordable housing; (iii) shared living accommodation (Sui Generis), (iv) commercial and community floorspace (Use Classes E and F2); and (v) site-wide and/or phase-specific access, servicing, public realm, blue-badge parking, cycle parking, open space, hard and soft landscaping, utilities, plant and all other associated works.

To allow for accurate reporting and data granularity, each building within the proposed development has been assessed individually as follows:

Assessment 1 Block A: a mixed-use redevelopment comprising 522 shared-living rooms, employment space, ancillary residential facilities and community spaces.

Assessment 2 Block B: a mixed-use redevelopment comprising 87 social-rented affordable units (C3), employment and community spaces.

Overall: The proposal involves active ground floor retail uses, and public realm improvements including landscaping and enhanced pedestrian connections.

Project Targets

Re:Shape have strong sustainability ambitions and have developed a considered sustainability brief for the project in line with their ESG framework. The targets outlined within this document refer to industry best practice targets established by the Greater London Authority and RIBA 2030 for new construction projects.

The assessment has been completed in line with London Plan Guidance (LPG) for WLCA and draws on guidance from the UK Green Building Council (UKGBC). These guidance documents promote the standardisation of whole life carbon (WLC) methodologies, supporting consistency in reporting and benchmarking across the industry. Collectively, these initiatives are steering the built environment towards a more sustainable, low-carbon future. By embedding WLC assessments as a core element of early design stages and fostering innovation in low-carbon materials and construction techniques, they are driving significant reductions in lifecycle emissions.

WLCA Methodology

Issue Summary

Revision No	Status	Comment	Author	Checked	Date
R01	Draft	Issued for client comment	TB	JC	29.07.26
R02	Final	Issued for client comment	TB	JC	24.08.26
R03	Final	Planning Issue	TB	JC	31.08.26

This Whole Life Carbon (WLC) Assessment has been prepared for the development at RIBA Stage 2, in line with the RICS Whole Life Carbon for the Built Environment 1st edition, November 2017 and LPG guidance. The GLA reporting tool has been completed and should be read in conjunction with this report.

The assessment follows a sequential approach through design, procurement, construction, and post-completion, beginning at concept stage.

Early-stage assessments establish a baseline, integrate WLC into the design process, and identify reduction opportunities while there is scope to influence decisions. As the process is still evolving, early-stage calculations using tools such as OneClick LCA may yield uncertain results; however, these are refined as design detail improves.

Stage 2 Results

The project's performance has been assessed against GLA Benchmarks as these provide the most accurate benchmark for the project. Table 1 on the following page demonstrates that currently, the proposed design is achieving the GLA Benchmarks for residential buildings.

Executive Summary

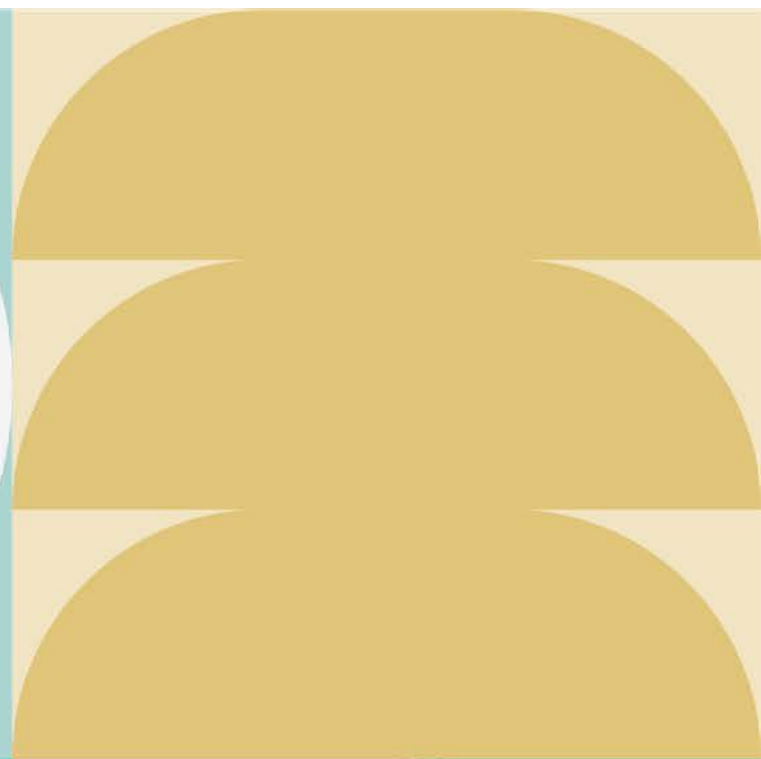
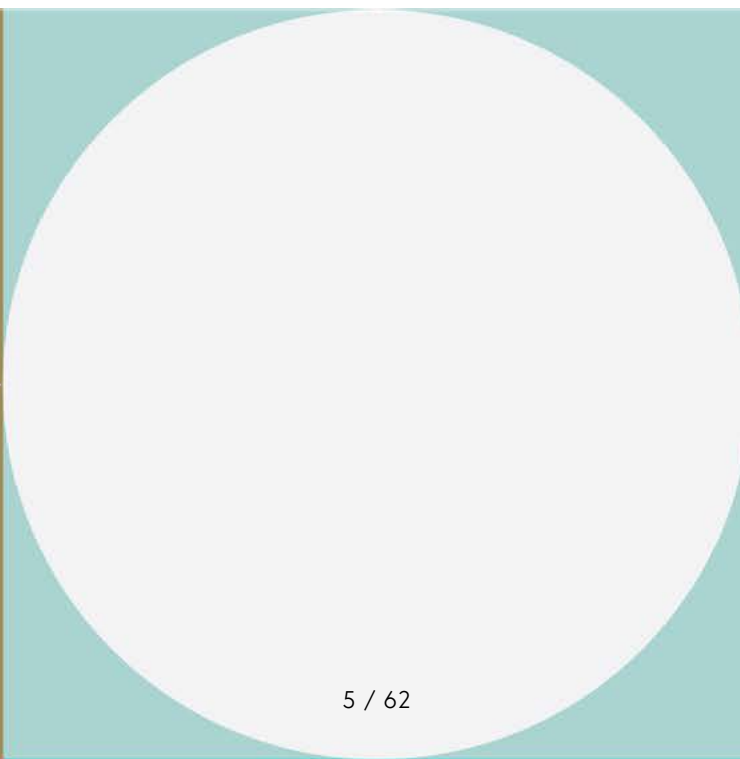
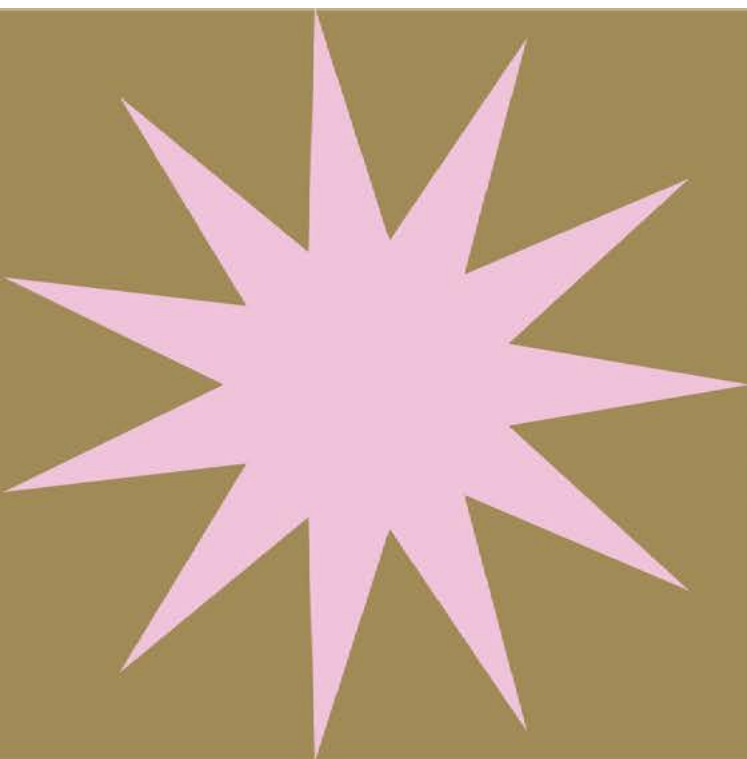
Executive Summary			Upfront Embodied Carbon Modules A1 - A5 (excl. seq carbon)	Whole Life Embodied Carbon Modules A-C (excl. B6 & B7, incl. seq carbon)	Operational Energy Module B6
Targets	GLA Benchmark (Residential)		< 850 kgCO ₂ e/m ²	< 1200 kgCO ₂ e/m ²	N/A
	GLA Aspirational (Residential)		< 500 kgCO ₂ e/m ²	< 800 kgCO ₂ e/m ²	N/A
	RIBA 2030		N/A	< 625 kgCO ₂ e/m ²	< 35 kWh/m ² /yr
	UKNZCBS 2028 (Block A: Commercial Residential)		< 495 kgCO ₂ e/m ²	N/A	< 70 kWh/m ² /yr
	UKNZCBS 2028 (Block B: Home - Flats)		< 450 kgCO ₂ e/m ²	N/A	< 49 kWh/m ² /yr
Stage 2 Results	Block A	Total	12,290 tCO ₂ e	21,289 tCO ₂ e	N/A
		Per m ² GIA	588 kgCO ₂ e/m ²	1,018 kgCO ₂ e/m ²	64 kWh/m ² /yr
	Block B	Total	5,698 tCO ₂ e	9,675 tCO ₂ e	N/A
		Per m ² GIA	583 kgCO ₂ e/m ²	991 kgCO ₂ e/m ²	34.63 kWh/m ² /yr
	Combined	Total	17,993 tCO ₂ e	30,960 tCO ₂ e	N/A
		Per m ² GIA	587 kgCO ₂ e/m ²	1,009 kgCO ₂ e/m ²	54.38 kWh/m ² /yr
	GLA Benchmark Achieved		Achieved	Achieved	N/A

Table 1: Summary of Building A & Building B performance at Stage 2



Contents

01	Introduction	6
02	Whole Life Carbon Assessment	11
03	Carbon Reductions	16
04	Results and Analysis - Block A	24
05	Results and Analysis - Block B	31
06	Conclusion	39
07	Appendix A - Methodology	44
08	Appendix B - Cost Validation	51
09	Appendix C - Block A Data Sources	53
10	Appendix D - Block B Data Sources	64





01

Introduction



01.1 Introduction

Project Introduction

Introduction

This Whole Life Carbon Assessment has been prepared by Carbon.Climate.Certified on behalf of Re:shape T Ltd ("the Applicant") in support of an application for planning permission and submitted to Haringey Council.

The application seeks planning permission for "Full planning permission for a phased mixed-use development comprising: (i) enabling works and operations; (ii) residential development (Use Class C3) including affordable housing; (iii) shared living accommodation (Sui Generis), (iv) commercial and community floorspace (Use Classes E and F2); and (v) site-wide and/or phase-specific access, servicing, public realm, blue-badge parking, cycle parking, open space, hard and soft landscaping, utilities, plant and all other associated works."

The Proposed Development is located at Ashley House, Ashley Road in Tottenham within the London Borough of Haringey. The Site is rectangular in shape bordering Ashley Road on the east, Hale Road to the south and Down Lane park to the west/north west. The existing site has no existing buildings.

The Site is less than 200m to the north west of Tottenham Hale underground station on the Victoria Line, providing connections to Highbury & Islington, Kings Cross, Oxford Circus and Victoria, as well as direct trains to Stansted airport. As such, the Site benefits from a Public Transport Accessibility Level (PTAL) of 5, where on a scale of 1 – 6b, 6b is the highest rating. The immediate surroundings also consist of The Sessile (a 12 storey residential building) to the north of the site and terraced houses next to West apartments (15 storeys) located to the south of the site. Beyond this, Tottenham Hale Retail park is located approximately 320m south and Walthamstow Wetlands approximately 965m west of the site.



→ **Figure 1:** Project image, DLA Architecture



01.2 Introduction

Planning Policy Position

Planning Policy Position

The statutory development plan for the London Borough of Haringey, and in turn the proposed development, consists of:

- The London Plan (2021)
- The Haringey Local Plan 2017

The London Plan (2021) Policy SI 2 requires major developments to calculate and reduce whole life-cycle carbon emissions, following the RICS Whole Life Carbon Assessment (WLCA) methodology. This requirement reflects the recognition that embodied carbon - the carbon associated with materials, construction, maintenance, and end of life - can represent a significant proportion of a building's total carbon impact, particularly as operational emissions reduce through grid decarbonisation.

The London Borough of Haringey's Local Plan (2017) forms part of the statutory development plan for the borough. Policy SP4 requires new development to minimise carbon emissions in support of the borough's net zero carbon commitment, while Policy SP11 requires development to adopt sustainable design and construction techniques to reduce impacts on climate change. These policies provide the local policy basis for addressing whole life carbon, read alongside the requirements of the London Plan.

This Whole Life Carbon Assessment has been prepared in accordance with the RICS Whole Life Carbon Assessment for the Built Environment (1st Edition, 2017) as required by LPG guidance, and addresses all relevant policy requirements. Where possible, measures to reduce whole life carbon have been investigated and integrated within the design response. Where full alignment with policy targets is considered unfeasible, the relevant measures and the reasons for this have been clearly explained.

→

Figure 2: Project image, DLA Architecture



01.3 Introduction

Project Targets

Project Targets

To establish a clear carbon reduction trajectory for the proposed residential development and in line with Re:shape's ESG framework, GLA Aspirational and the RIBA 2030 have been identified as the most appropriate reference frameworks for this scheme.

Project Targets

The scheme aims to achieve the GLA aspirational target for upfront embodied carbon for residential developments, as set out in the GLA Whole Life Carbon Assessment Guidance (2022). The project team will reference this benchmark to inform material selection, structural design, and construction strategies, with the objective of minimising upfront embodied carbon emissions associated with life cycle stages A1–A5. This target is applicable for both blocks A & B.

In parallel, the RIBA 2030 Climate Challenge (2021) establishes whole life carbon intensity targets for new residential developments, providing a recognised benchmark for reducing both embodied and operational emissions. The project will reference the RIBA 2030 whole life carbon targets to inform material selection, structural design, and operational energy strategies, with the aim of minimising upfront embodied carbon (A1–A5) and in-use emissions (B1–B7) through coordinated design optimisation. This target is applicable for both blocks A & B.

The GLA whole life carbon benchmarks will also be referenced as an additional industry comparator to contextualise the project's overall performance against regional best practice targets.

GREATER LONDON AUTHORITY

Greater London Authority

The GLA Whole Life Carbon Benchmarks provide a robust framework for assessing and reducing carbon emissions across the full lifecycle of buildings in London. Developed to support the Greater London Authority's net zero ambitions, the benchmarks set clear performance targets for both operational and embodied carbon, ensuring that project teams consider emissions from construction through to end-of-life.

By embedding these benchmarks into planning and design processes, stakeholders can deliver buildings that align with climate commitments, improve accountability, and drive the transition toward a more sustainable and resilient built environment.

'ASPIRATIONAL' TARGET

- Upfront Embodied Carbon <500 kgCO₂e/m²

RIBA 2030 Climate Challenge

RIBA 2030 Climate Challenge

The RIBA has developed voluntary performance targets for operational energy use, water use and embodied carbon.

Originally launched in October 2019, the RIBA 2030 Climate Challenge has now been re-issued as Version 2 (2021) with refined and updated targets that encompass development in the knowledge base of performance trajectories – particularly in the embodied carbon field.

The embodied carbon targets in Version 2 are now aligned with LETI and others.

2030 TARGET

- Whole Life Embodied Carbon <625 kgCO₂e/m²



01.4 Introduction

Project Targets

Project Targets

While the embodied carbon limits established within the UKNZCBS have not been adopted as the primary project targets for this development, the project team is seeking to verify the scheme against the Standard and, as such, the relevant embodied carbon benchmarks have been included within this assessment for reference and comparative purposes. These benchmarks provide an additional industry-recognised framework for assessing the project's embodied carbon performance against emerging best practice for residential-led development.

Furthermore, the UKNZCBS embodied carbon limits broadly align with the Greater London Authority (GLA) aspirational whole life carbon targets, providing consistency between the project's strategic carbon objectives and wider regional planning guidance.

The scheme aims to achieve an operational energy performance in line with the 2028 Energy Use Intensity (EUI) targets and upfront embodied carbon performance in line with 2028 module A1-A5 targets, both established by the UK Net Zero Carbon Buildings Standard (2024).

Block A: The project will reference the Commercial Residential Embodied Carbon and EUI targets for the operational energy performance.

Block B: The project will reference the Homes (Flats) Embodied Carbon and EUI targets for the operational energy performance.

These targets have informed the building fabric, servicing strategy, and operational energy design, with the objective of minimising regulated and unregulated energy demand through coordinated design optimisation.



UK Net Zero Carbon Buildings Standard

The UK Net Zero Carbon Building Standard (UKNZCBS) provides a comprehensive framework to define and achieve net zero carbon in the built environment. Developed through industry collaboration, it addresses both operational and embodied carbon, offering clear metrics, benchmarks, and methodologies to guide project teams in reducing emissions.

By embedding these targets into every stage of a building project, stakeholders can ensure meaningful progress toward net zero carbon, contributing to the UK's broader climate goals while driving innovation and accountability in the industry.

2028 EMBODIED CARBON LIMITS

- Block A: Embodied Carbon Limit for Commercial Residential <495 kgCO₂e/m²
- Block B: Embodied Carbon Limit for Homes (Flats) <450 kgCO₂e/m²

2028 OPERATIONAL ENERGY LIMITS

- Block A: Operational Energy Use Intensity for Commercial Residential <70 kWh/m²/year
- Block B: Operational Energy Use Intensity for Homes (Flats) <49 kWh/m²/year

02

Whole Life Carbon Assessment



02.1 Whole Life Carbon Assessment

Aim & Purpose

Aim & Purpose

WLC assessments provide a true picture of the impact that the associated carbon emissions of a product, service or process have on the environment over their entire life cycle. The included emissions capture a building's operational carbon emissions from both regulated and unregulated energy use, in addition to its embodied carbon emissions. Embodied emissions are considered to be those corresponding to the raw material extraction, manufacture and transport of building materials, construction and the emissions associated with maintenance, repair and replacement as well as dismantling demolition and eventual material disposal. In addition, a WLC assessment further includes a review of the potential carbon emissions 'benefits' from the reuse or recycling of components after the end of a building's useful life.

The aim of the WLCA:

The fundamental objective of a whole life carbon measurement is the mitigation of carbon impact in the built environment. Better understanding and consistent measurement of the whole life carbon emissions of built projects will in turn enable comparability of results, benchmarking and target setting to achieve carbon reductions. A further aim is to reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.

The purpose of the WLCA:

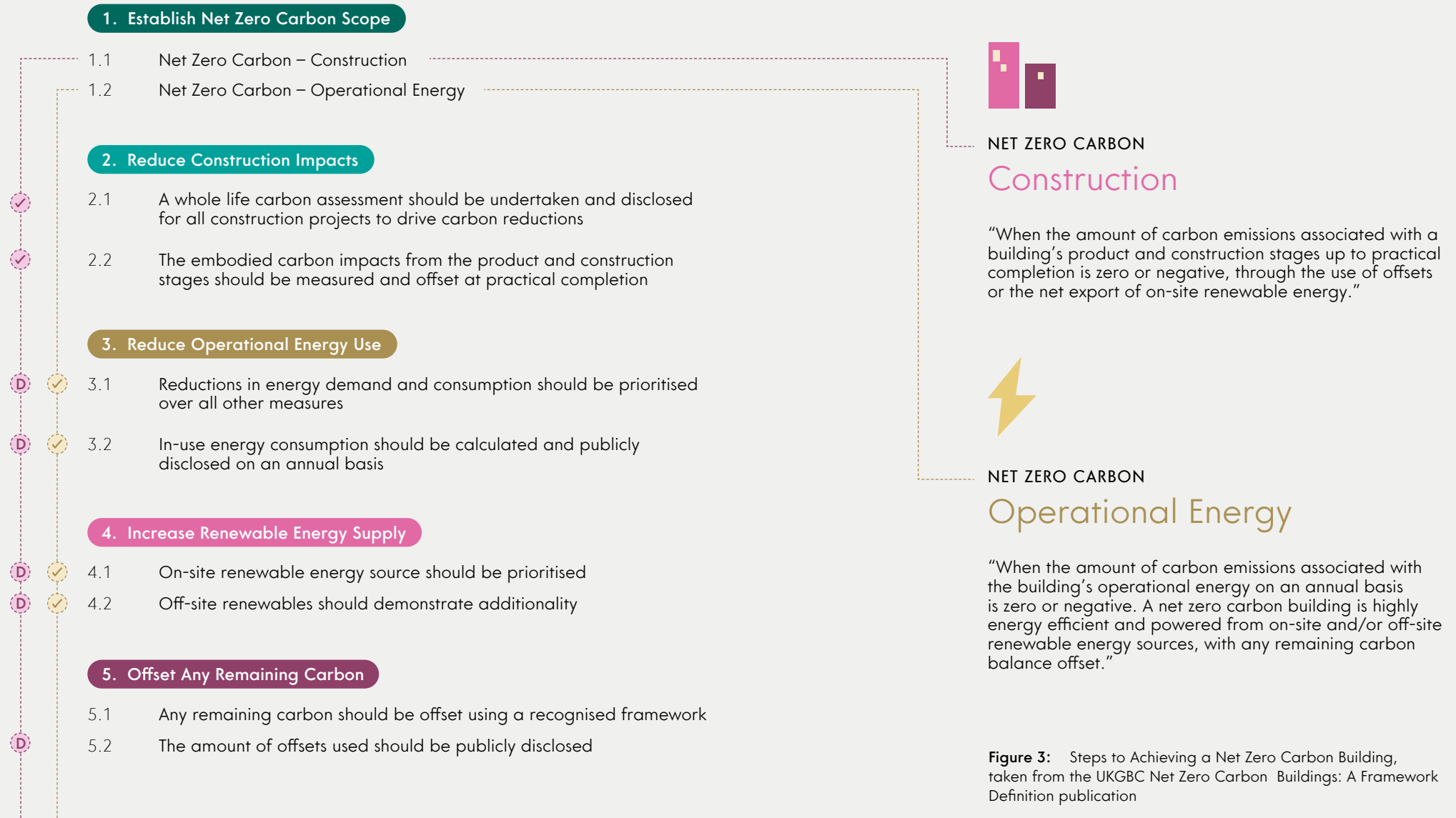
This process is intended to standardise whole life carbon assessments in line with the methodology in EN 15978 to achieve coherent and comparable results that can be used to benchmark the whole life carbon performance of the current design against possible design options and to other built assets. Even at an early stage it is still beneficial to gauge coherence in the calculations where more detailed project-specific information might not yet be available as appropriately timed and sequenced carbon assessments help identify carbon reduction opportunities as well as monitor the project's progress in achieving wider sustainability and climate change related goals.

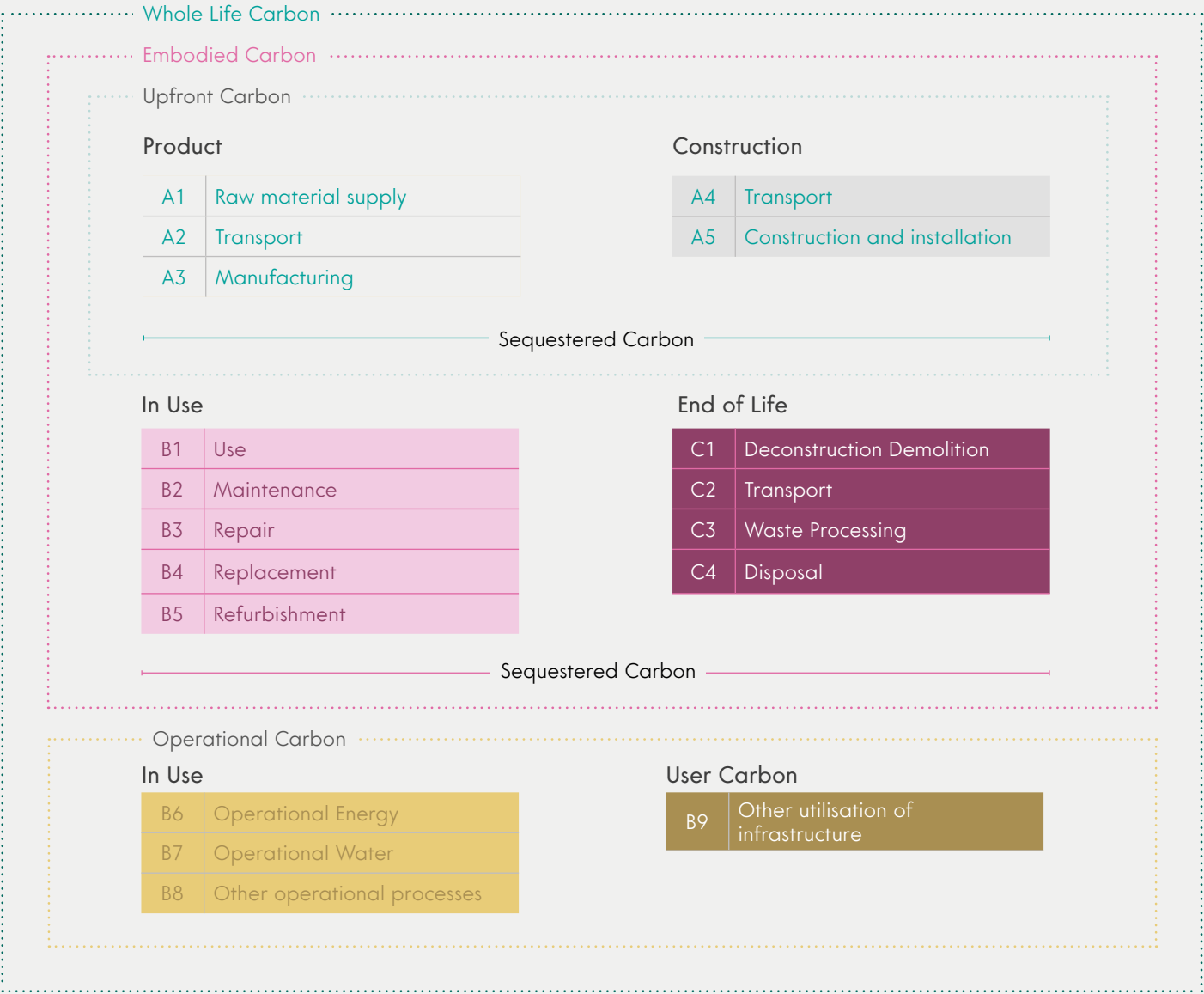
Undertaking a WLC assessment is a requirement of the UKGBC Net Zero Carbon Framework as follows:

- A whole life carbon assessment should be undertaken to determine the building's carbon impact, in line with the RICS Professional Statement 'Whole life carbon assessment for the built environment'
- A building's product and construction stages are defined as modules A1 to A5 of EN15978 ('embodied carbon to practical completion' as per Section 1 of the RICS Professional Statement)
- The whole life carbon assessment and the related offsetting of carbon (either through net export of on-site renewable energy or the purchase of offsets) should be audited by a third-party

The figure on the following page outlines which principles should be followed (according to the UKGBC NZC framework) to demonstrate alignment with net zero carbon for construction and for operational energy.

Full details of the methodology used to undertake the WLC Assessment are provided in Appendix A.





Circular Economy

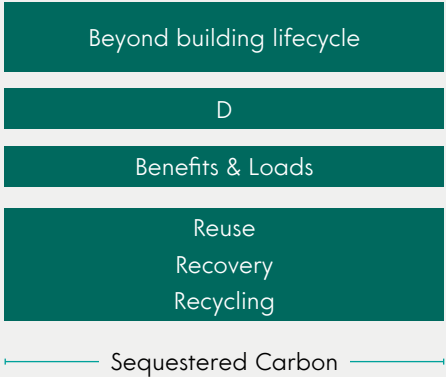


Figure 4: Modular information for the assessment as per EN 15978 including typical system boundaries



02.2 Whole Life Carbon Assessment

Data Sources & Input

Data Sources & Input

Embodied Carbon & End-of-life Assessment

The project information (including Gross Internal Area, material quantities and specifications) used to inform this assessment has been taken from the following sources;

260804 Ashley Park Cost Estimate R4 - Design Freeze Certified

(561)2604-JC-SD-Ashley_Park_CD_R02

Provided by KS4 & Whitby Wood

Operational Energy

The building's operational carbon emissions have been predicted using SAP, HES & SBEM calculations detailed in the following documents;

261109 Ashley House Energy Assessment Report

Provided by Meinhardt

Statement of the Scope & Boundaries

Due to the stage of the project, not all information was available during the analysis programme. In most cases assumptions could be made however, in some instances, elements had to be excluded from the assessment. Nevertheless, this WLCA complies with the minimum requirements of the RICS methodology.

As the scheme progresses throughout the workstages, the ability to more accurately model the whole life carbon emissions will increase, as shown below.

Details of data sources and assumptions made within the model are provided in Tables 18-23, set out in accordance with the RICS guidance.

A full breakdown of data sources from the OneClick software is provided within Appendix C & D. Table 24 displays the building elements coverage of the project and in accordance with the RICS guidance, highlighting any building element category where the percentage coverage is less than the recommended threshold. Any occurrences of this will be indicated alongside the corresponding carbon calculation results.

Figure 5: Accuracy and ability to influence WLCA

