Be First Sustainability Framework

May 2022

BeFirst DESIGN.

0.0
Executive Summary

This document provides a framework for setting sustainability targets, monitoring progress and celebrating achievements across Be First's portfolio.

Be First Regeneration ('Be First') is the development and planning company wholly-owned by the London Borough of Barking & Dagenham ('LBBD'). It has a significant pipeline of affordable homes and wider neighbourhood regeneration projects. Land and homes are retained in ownership by the council and let, heated and maintained by other council owned companies.

This ecosystem of locally-rooted organisations, working together in the public interest, creates a promising foundation for sustainable, high quality places. Decisions can be made on the basis of whole-life costs and carbon, and long term stewardship. It creates a good basis for strong relationships with residents and maintenance teams, enabling continuous improvements through collecting and analysing feedback about quality of life and operating performance.

Existing Be First documents and processes, including the Design Guidance, already refer to sustainability as a core principle for good design. There are strategic programmes that seek to harness the sustainability, quality and delivery benefits of Modern Methods of Construction (MMC) and Digital Systems, which will continue to drive progress on sustainability and the pathway to zero carbon.

This document provides a framework for setting targets, monitoring progress and embedding sustainability throughout Be First's portfolio. It also provides a basis for communicating and celebrating Be First's sustainability ambitions and achievements, and stepping up progress over time. It has been developed together with design, planning, development and construction teams, the council and other key stakeholders, including Reside and MyPlace.

The document is arranged as follows:

1. **Introduction:** Briefly sets the scene of the climate and ecological emergencies and Be First's holistic response. Explains 'How to Use this Document' for various audiences.

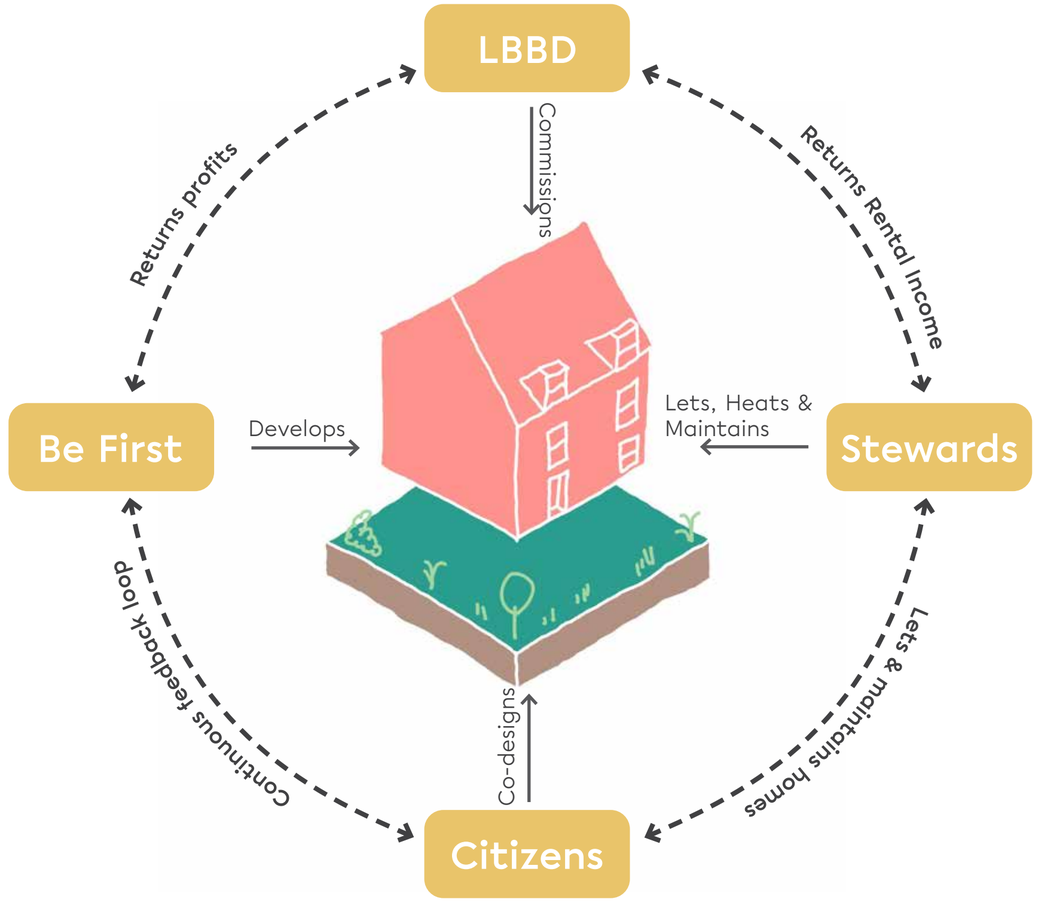
2. **Context Analysis:** Summarises the key current and emerging legislation and policy, and LBBD's ambition to become the Green Capital of the Capital.

3. **Targets & Design Principles:** Sets clear outcomes, performance indicators and targets, and design guidance, arranged by 6 sustainability themes:

   + **Operational Energy & Carbon**
   + **Embodied Carbon & Circular Economy**
   + **Transport & Connectivity**
   + **Flood Risk & Water Management**
   + **Ecology & Biodiversity**
   + **Health, Wellbeing & Social Value**

4. **Implementation & Monitoring:** Includes actions by RIBA Stage, and an explanation of the monitoring and reporting framework which will form the basis of regular project progress reviews and annual portfolio reports.

5. **Definitions, Tools & References**



The Be First model enables a whole-lifecycle approach to cost and carbon.

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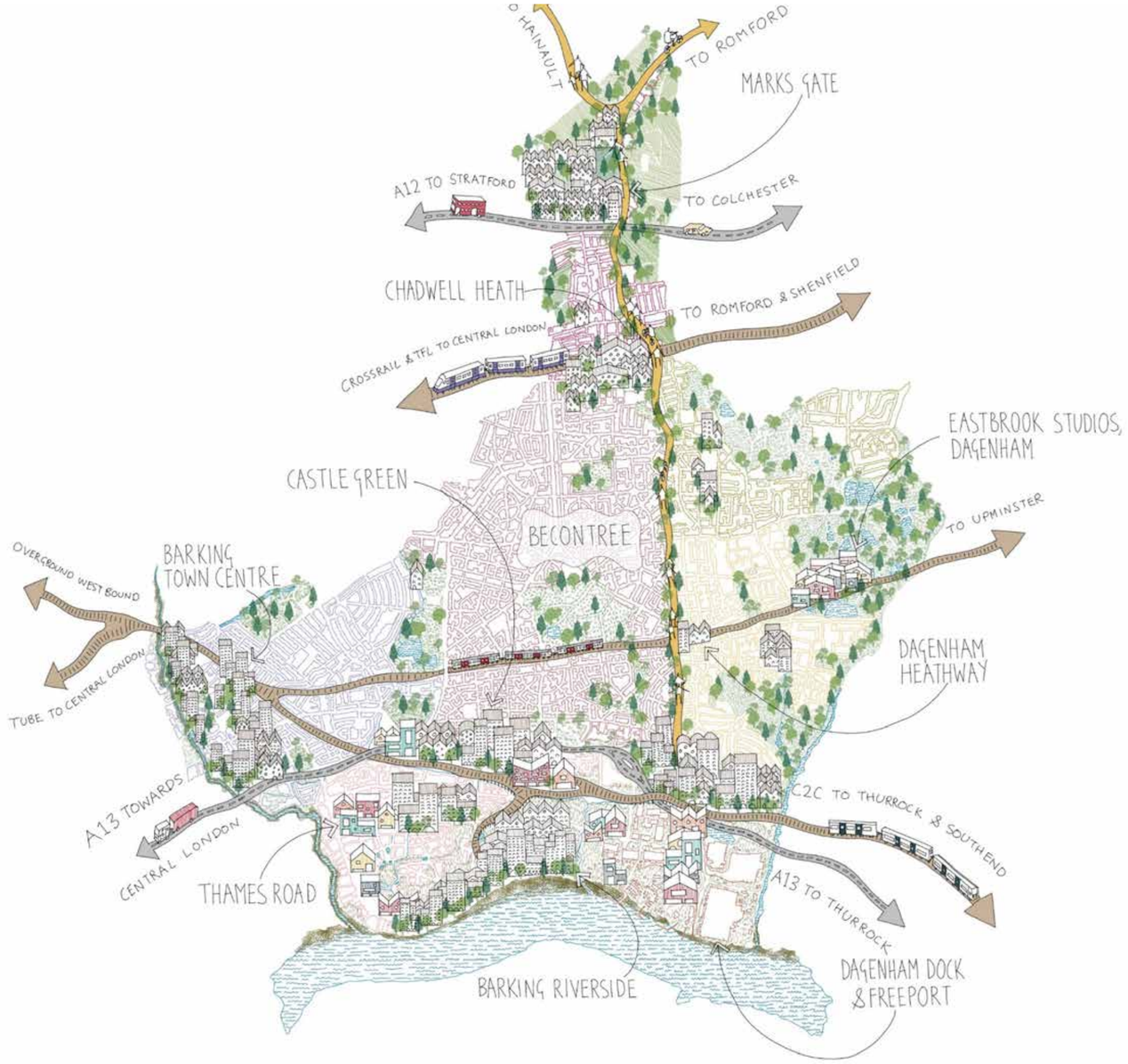


Introduction

1. 0
Introduction

The vast environmental impact of the built environment is widely reported. The sector influences around 70% of the UK's total carbon footprint, and directly controls at least a quarter of it (UKGBC). In addition, the construction sector produces two thirds of England's waste (CLC).

Climate change, pollution and land use change have also created an ecological emergency. In the UK, 41% of wildlife species are currently in decline and 15% are at risk of national extinction (NBN).

At our current trajectory, global temperatures could increase by 4°C or more by 2100. This level of climate change would have catastrophic impacts for human health, biodiversity and many of the natural and man-made systems we rely on for clean air, water, energy, food, materials, flood alleviation, and carbon sequestration.

In line with global, national and local commitments, urgent action is needed to reduce carbon emissions to net zero. This includes both operational carbon emissions – for example, from the energy used to heat homes – and embodied carbon associated with the materials and processes used to construct those homes.

Reducing carbon emissions (climate mitigation) must go hand in hand with building resilience to its impacts (climate adaptation).

Devastating weather events across the globe in 2021, including storms and flooding in Barking, have demonstrated that the effects of climate change are here already and cannot be ignored.

Increased flooding, heatwaves and extreme weather events cause widespread disruption and impact the health and wellbeing of all of us, but disproportionally affect those more vulnerable and with fewer means (NLA). A response grounded in equality and justice is therefore critical.

London is expected to experience hotter drier summers and warmer wetter winters over the next three decades, with more frequent extreme events like heavier rainfalls and increased flooding, alongside other global threats such as sea levels rising.

Summer temperatures are predicted to rise in the city as much as 10°C higher than in the surrounding countryside due to the urban heat island effect. Over 37,000 homes are at risk due to river flooding, and over 80,000 properties are at high risk of surface water flooding (NLA).

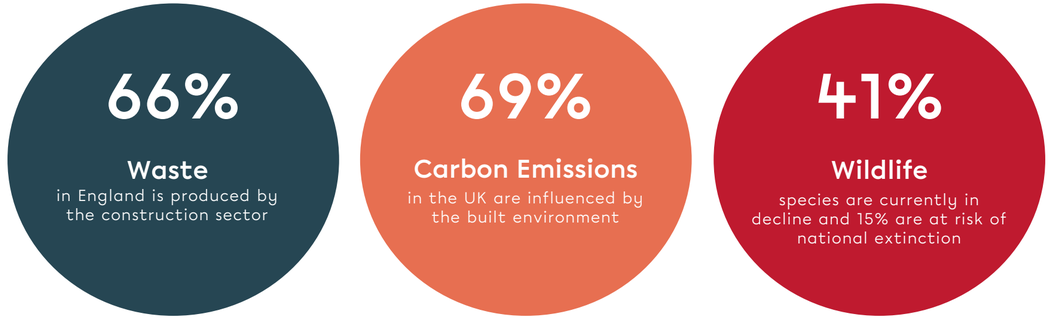
Climate action, particularly in areas like energy efficiency, green infrastructure and active travel, can deliver significant benefits for people, neighbourhoods and local economies.

Examples of climate action 'co-benefits' include reducing fuel poverty, improving health and wellbeing, and creating new green jobs. Ensuring good outcomes for residents, and working with residents to co-design solutions, will be critical to fair and effective climate action.

The interdependent challenges of the climate and ecological emergencies require holistic solutions,

Therefore, Be First's approach to sustainability covers 3 key pillars:

1. **Mitigate**: Reduce carbon emissions and waste to net zero and use resources efficiently (energy, water, materials)
2. **Adapt**: Build inclusive, joyful, future-proofed, and healthy homes and neighbourhoods that are resilient to the impacts of climate change
3. **Regenerate**: Contribute positively to biodiversity and natural systems for the benefit of communities and nature



The negative environmental impact of the built environment in the UK

3 key pillars to address the climate and ecological emergencies

1. 1
How to Use this Document

This document provides a framework for setting targets, monitoring progress and embedding sustainability throughout Be First's portfolio.

The targets set out in Chapter 3 will inform project briefs and be reported against by the project team at each RIBA stage and project gateway.

Chapter 4 sets out checklists of key actions to be undertaken at each project stage, in addition to reporting against targets.

All actions require collaboration, so the framework and targets should be understood by the full project team. The flow diagram opposite clarifies which sections of this document are most relevant at each project stage. Key contributors are identified below.

STRATEGY:

Key contributors: Be First Development Managers, Design Team, Planning Team & external design team.

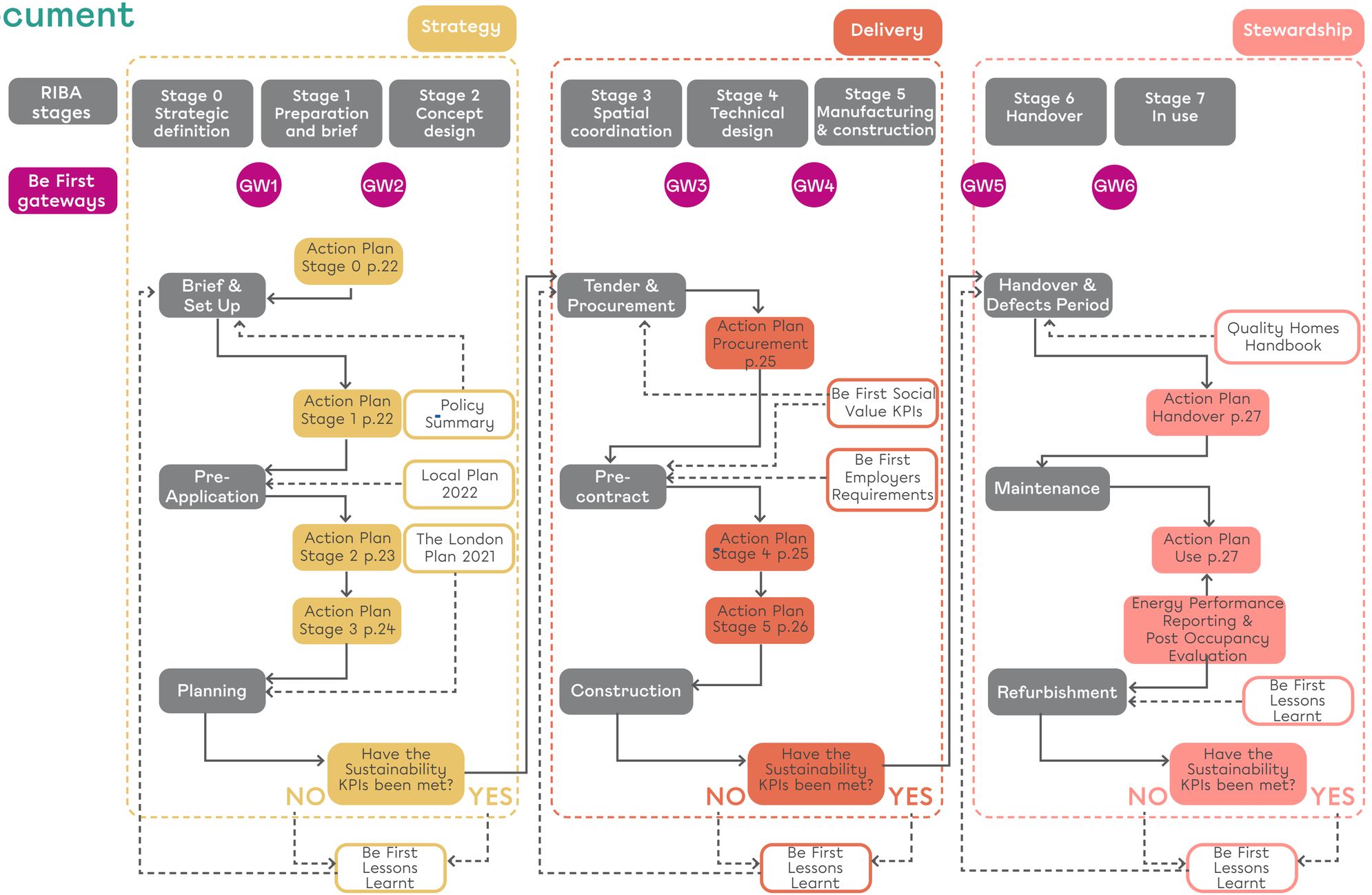
DELIVERY:

Key contributors: Be First Development Managers, Construction Managers, Design Team, PMO, external design team & contractor.

STEWARDSHIP:

Key contributors: Be First Construction Managers, Design Team, Contractor, Reside, MyPlace.

Ongoing monitoring and feedback will inform future projects and updates of this strategy.



Context Analysis

2.0
The Pathway to Net Zero

The legislative and policy context governing sustainability and climate change is complex and rapidly evolving. A summary of key sustainability and climate change policy at various scales is included in the following page.

Despite legally binding national targets to reach net zero carbon by 2050, comprehensive plans and funding to decarbonise the UK economy, including the construction sector, are not yet available.

The UK's long-awaited Net Zero Strategy and Heat & Buildings Strategy were published ahead of the COP26 international climate conference, hosted in Glasgow last November.

There are some positive moves like a confirmed target for all electricity to come from low carbon sources by 2035, phasing out installation of new gas boilers by 2035, and banning the sale of new petrol and diesel cars and vans from 2030. However, commitments and funding are notably lacking for large scale energy efficiency improvements that are critical to enabling net zero, including the insulation of the UK's 29 million homes (some of the leakiest in Europe).

The government has recently consulted on the Future Homes Standard 2025 (changes to Parts L and F of Building Regulations) and an interim June 2022 uplift which will require, respectively, 80% and 31% reductions in regulated carbon emissions compared to current standards. Gas boilers are expected to be banned in new homes from 2025 (ahead of the overall phasing out of new gas boilers by 2035).

Despite these recent improvements, many aspects of net zero design and construction are not yet covered by UK Building Regulations – including unregulated energy (appliances, lifts, external lighting) and embodied carbon (sourcing, manufacturing and transporting of materials for construction and maintenance).

Many aspects of net zero design and construction are not yet covered by UK Building Regulations.

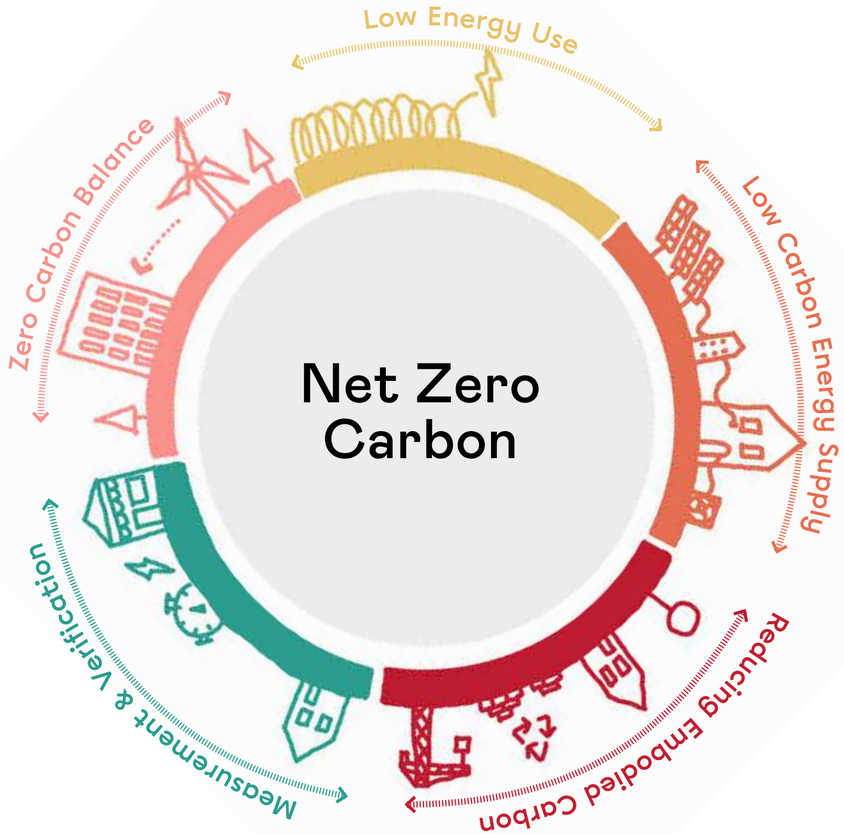
Therefore, there is a gap between current and forthcoming regulations and the action required to effectively respond to climate change. This indicates future leaps in regulation will be needed to meet climate commitments, creating a risk to organisations that are geared towards minimum compliance.

In addition, there is a widely acknowledged performance gap between the designed and as built performance of buildings. The average UK home consumes 40% more energy than predicted (Passivhuas Trust). The journey towards net zero is going to require significant learning, changes to current practices, and an iterative, collaborative and outcomes-based approach.

The London Plan 2021 goes some way to addressing these gaps and encouraging better data capture, sharing and performance monitoring. There is clear consensus and design guidance emerging from industry bodies such as RIBA, LETI, Passivhaus Trust and the UKGBC that can steer the way towards net zero best practice, ahead of expected future changes in policy and regulation. The aspirational targets and design guidance in this framework draw on these resources, summarised in Section 5 References.

A 2020 report by the UKGBC found an average build cost uplift for net zero of 4 to 8% compared to 'business as usual'. However, this is declining as the industry adapts, and many interventions save both carbon and costs (for example, compact forms and simple detailing). The earlier sustainability is considered, the lower the risk of increased costs. Considering lifecycle costs and benefits, net zero design / construction is an investment into lower operating costs, future-proofed assets and resident health and comfort.

Any building that does not deliver net zero carbon performance or is not designed to be easily adapted for that, is an expensive liability for the future, as it will have to be retrofitted (at greater cost and disruption) to be net zero carbon by 2050 at the latest.



Steps towards net zero carbon performance (adapted from LETI)

2.1
Policy Summary

Theme	Global & National	London Plan 2021	London Strategies & Guidance	Local Plan & Strategies
Climate Change Commitments	The **Paris Agreement** set a target to limit global temperature rise to well below 2C with the aim of 1.5C above pre-industrial levels. The IPCC's follow up report stated that this requires a global reduction in GHG emissions of 45% by 2030 and 100% by 2050. The UK has a target of net zero by 2050.	The London Plan 2021 sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. There are a number of new or updated policies relating to climate change and sustainability, summarised below.	In addition to the London Plan policies, the Mayor has set a target for London to become a zero-carbon city by 2050, recently updated to a very ambitious 2030 target.	In 2020, LBBD declared a motion on climate change, recognising that ' a changing climate will have severe and enduring social, economic and environmental implications, and that tackling climate change is an issue of inequality as the greatest impact will be on the most vulnerable' and that 'strong policies to cut emissions also have associated health, wellbeing and economic benefits'. Following the motion, the Council set a borough-wide net zero target of 2050, and a target of 2030 for its own operations.
Operational Energy & Carbon	The **Climate Change Act 2008** introduced a legally binding target for the UK to reduce GHG emissions by 80% by 2050. In June 2019, the target was updated to reach net zero by 2050, and in 2021, the government committed to reducing emissions by 78% by 2035 compared to 1990 levels The recent **Net Zero Strategy** and Heat & Buildings Strategy set out the Government's plans to acheive this. Significant gaps in funding and delivery of projects need to be addressed to meet the targets. The **Environment Act 2021**: sets a framework for new targets on air quality, water, waste and resource efficiency and nature – including a 10% biodiversity net gain requirement for all new developments, expected to be in force from 2023. The **National Planning Policy Framework (NPPF)**: requires new developments to be planned for in ways that avoid increased vulnerability to the impacts of climate change (adaptation), and help to reduce greenhouse gas emissions, such as through its location, orientation and design (mitigation). The 2021 revision expands the definition of sustainable development to include the 17 **UN Sustainable Development Goals**.	**Minimising Greenhouse Gas Emissions (Policy SI2)**: Major development should be net zero carbon, with a minimum 35% on-site carbon reduction, of which 10% (resi) or 15% (non-resi) must be from energy efficiency, following the energy hierarchy. Any remaining emissions must be justified and offset. Unregulated emissions must also be calculated and minimised. Energy performance must be reported for at least 5 years post construction. **Energy Infrastructure (Policy SI3)**: Major development within Heat Network Priority Areas should have a communal low-temperature heating system, and the heat source must follow the heating hierarchy. Where a heat network is planned, design must allow for cost-effective future connection.	London Environment Strategy Zero Carbon London: A 1.5C compatible plan (2018) GLA Energy Assessment Guidance GLA Be Seen Energy Monitoring Guidance and Reporting Spreadsheet London Heat Network Manual II London Heat Map: https://maps.london.gov.uk/heatmap	LBBD Carbon Baseline & Net Zero Roadmap for the council (by 2030). LBBD Carbon Baseline & Net Zero Roadmap for the borough (by 2050). In general, Local Planning Policy aligns with the London Plan 2021, however there is potential to go beyond this in future. **LBBD Local Plan 2037 Chapter 9 Sustainable Infrastructure**, Policies SP7, DMSI 1-2, 9. Includes requirement for new residential development to meet Home Quality Mark 3 star rating, residential refurbishment of 10 dwellings or more to meet BREEAM Domestic Refurbishment Excellent rating, non-residential new build and refurbishment over 500sqm to meet BREEAM Excellent rating. This goes beyond the London Plan requirements.
Circular Economy & Embodied Carbon		**Whole-life Carbon (Policy SI2)**: Referable developments should calculate whole lifecycle carbon emissions and demonstrate actions taken to reduce life-cycle carbon emissions. **Reducing Waste and Supporting the Circular Economy (Policy SI7)**: Referable applications should promote circular economy outcomes and aim to be net zero-waste. Zero biodegradable or recyclable waste to landfill by 2026, municipal waste recycling target of 65 per cent by 2030, 95% reuse/recycling of construction, demolition and excavation waste	GLA Design for a Circular Economy Primer GLA Circular Economy Statement Guidance GLA Whole Life Cycle Carbon Assessments Guidance GLA WLC Assessment Pre-app Stage Principles (yes / no questions)	**LBBD Local Plan 2037 Chapter 9 Sustainable Infrastructure**, Policy DMSI 8 East London Waste Authority (ELWA) Joint Strategy for East London's Resources and Waste 2027 - 2057

2.1
Policy Summary

Theme	Global & National	London Plan 2021	London Strategies	Local Plan & Strategies
Connectivity & Transport	**Building Regulations 2021 Update** (in effect from 15 June 2022): Part L 2021 includes numerous uplifts to energy performance, covering U-values, air tightness, thermal bridging, and the required efficiencies of building heating systems. Introduces SAP10 updated carbon factors. Part F 2021 uplifts ventilation requirements. Approved Document O 2021 outlines new performance targets for overheating. Part S requires all new residential parking to have EV charge points. The **Future Homes Standard 2025**: has recently been consulted on and will require all new homes to be 'zero carbon ready', meaning low carbon heating (no gas boilers) and no further retrofit is necessary to enable them to become zero carbon homes (in operation) as the electricity grid continues to decarbonise. Enhanced fabric and mechanical specifications will deliver 75-80% reduction in carbon emissions compared to current standards. The **Clean Growth Strategy** set targets to upgrade as many houses to EPC band C by 2035 (2030 for all fuel-poor households). The Government's preferred target is that non-domestic property owners in the private sector achieve EPC band B ratings by 2030. **Minimum Energy Efficiency Standards** (MEES) in the domestic private rented sector currently prevents landlords from letting properties rated below EPC band E, expected to be stepped up.	**Healthy Streets & Sustainable Transport (Policies T2-7)**: Apply the Healthy Streets principles, support active and low carbon travel and reduce car dominance. Refer to maximum car parking, minimum cycle parking standards, and electric vehicle charging requirements. Target of 75% of all trips in Outer London (citywide target of 80%) to be made by walking, cycling or public transport.	Mayor's Transport Strategy TfL Guide to the Healthy Streets Indicators London Cycle Design Standards GLA Sustainable Transport, Walking and Cycling LPG	**LBBD Local Plan 2037 Chapter 10 Transport**, Policies SP8, DMT 1-4 LBBD Walking & Cycling Strategy (2021) LBBD Barking Town Centre Transport Strategy (2021) London Riverside Opportunity Area Transport Strategy (2020)
Water & Flood Risk Management		**Flood Risk Management (Policy SI12)**: All development should ensure that flood risk is minimised and mitigated and residual risk is addressed, priortising natural methods due to their multiple benefits. **Sustainable Drainage (Policy SI13)**: All development to target greenfield run-off rates and follow the drainage hierarchy. Avoid impermeable surfacing. **Water Use (Policy SI5)**: Residential mains water consumption of maximum 105 litres/person/day. **Waterways (Policy SI16-17)**: Development proposals along waterways should protect and enhance inclusive public access to and along the waterway. River restoration and naturalisation should be supported.	Thames Estuary 2100 Plan London Rivers Action Plan London Sustainable Drainage Action Plan	**LBBD Local Plan 2037 Chapter 9 Sustainable Infrastructure**, Policies DMSI 6-7 LBBD Strategic Flood Risk Assessment (SFRA) LBBD Local Flood Risk Management Strategy (2017-2023)
Ecology & Biodiversity		**Urban Greening (Policy G5)**: Major development must contribute to urban greening (target UGF 0.4 for residential). **Biodiversity (Policy G6)**: All development should aim to secure biodiversity net gain. **Trees and Woodlands (Policy G7)**: Retain existing trees of value. If necessary, provide equivalent replacement (using CAVAT or i-Tree Eco or similar).	Greenspace Information for Greater London: https://www.gigl.org.uk/ GLA Urban Greening Factor Guidance & Calculator	**LBBD Local Plan 2037 Chapter 8 Natural Environment**, Policies SP7, DMNE 1-5 LBBD Green Infrastructure & Biodiveristy Strategy (2019) LBBD Parks & Open Spaces Strategy (2017)
Health, Wellbeing & Social Value		**Air Quality (Policy SI1)**: All development must be at least Air Quality Neutral. **Overheating (Policy SI4)**: All development must minimise the urban heat island effect and major development must assess and mitigate internal overheating, following the cooling hierarchy and TM59 (resi) or TM52 (non). **Food Growing (Policy G8)**: Protect existing allotments and encourage provision of space for urban agriculture. **Inclusive Design (Policy D5 & D7)**: Ensure new development achieves the highest standards of accessible and inclusive design. **Housing Quality & Standards (Policy D6)**: Maximise dual aspect dwellings, provide sufficient daylight and sunlight, opening windows and passive ventilation. Address qualitatiive design aspects in Table 3.2. **Agent of Change & Noise (Policy D13-14)**: New developments must mitigate and manage any existing and potential noise and nuisance impacts.	GLA London Climate Risk Map Control of Dust and Emissions During Construction and Demolition SPG Accessible London: achieving an inclusive environment SPG Good Quality Homes for All Londoners LPG Air Quality Positive LPG Air Quality Neutral LPG	**LBBD Local Plan 2037 Chapter 8 Natural Environment**, Policy DMNE 6 and **Chapter 9 Sustainable Infrastructure**, Policies DMSI 3-4, 9 LBBD Inclusive Growth 'B&D Growing Together' Strategy (2020) LBBD Air Quality Action Plan (2020-2025) Barking & Dagenham Joint Health & Wellbeing Strategy (2019-2023)

2.2
The Green Capital of the Capital

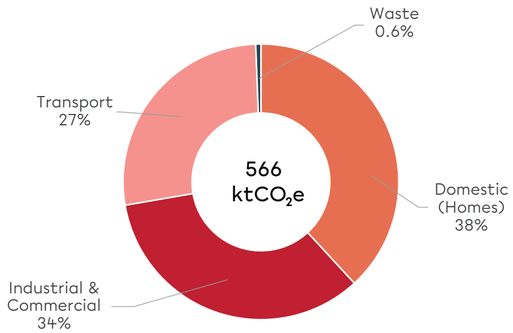
The London Borough of Barking and Dagenham (LBBD) has declared a Climate Emergency and committed to become a carbon neutral council by 2030 and borough by 2050.

It has also set an ambition to become the Green Capital of the Capital. LBBD's Inclusive Growth Strategy 'recognises that the environment has a huge impact on the quality of the lives of Barking and Dagenham residents and by ensuring that we have the cleanest public realm, parks and waterways, access to the most sustainable methods of transport and energy and vastly improved air quality it will provide greater health, wellbeing and prosperity'.

A recent carbon baseline report commissioned by the council estimates Barking and Dagenham's borough wide carbon footprint for 2018 (the latest year for which data is available) to be 566 ktCO2e – more than 28 million trees could capture in a year!

The biggest carbon contributors are:

1. Homes (energy use, primarily gas heating): 38%
2. Industrial & commercial: 34%
3. Transport: 27%



Baseline carbon footprint for the London Borough of Barking & Dagenham

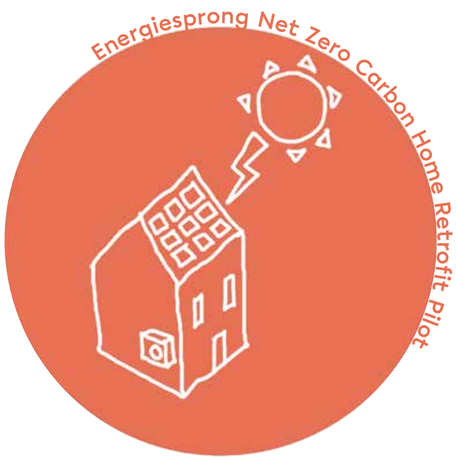
A borough-wide carbon baseline and net zero roadmap is currently being developed. The emerging council climate change response programme includes 6 key areas of activity, all of which Be First will play a key part in shaping, demonstrating and delivering:

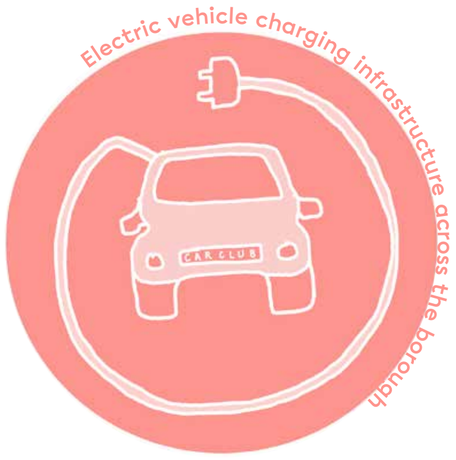
1. Creating energy efficient, sustainable homes and buildings
2. Developing decarbonised, local energy systems
3. Accelerating the shift to low emission neighbourhoods
4. Refreshing our green and blue infrastructure
5. Reducing waste through a circular economy
6. Priming the clean growth, green economy

The council has initiated a number of local activities and pilot projects, including:

+ A 'Forest of Thanks' to celebrate key workers in Parsloes Park, using the Miyawaki method of high density and diversity of planting to deliver benefits for biodiversity and air quality
+ A Net Zero Carbon Home Retrofit Pilot in the Becontree Estate, using the innovative, off-site manufactured Energiesprong approach
+ Roll-out of electric vehicle charging infrastrcture across the borough
+ Facilitating the resident-led Barking & Dagenham Greening Network, where anyone interested in making the borough a greener place can connect with others, share their ideas, and the projects they are involved in.

Be First will continue to work collaboratively with the council, Reside, B&D Energy and other council-owned organisations to align our respective decarbonsiation plans and jointly deliver on the borough-wide climate change response. Further information about collaboration and governance mechanisms is included in Chapter 4.





Targets & Design Principles

3.0
Framework and KPIs

This Framework provides a holistic definition for sustainability, including but not limited to achieving net zero, arranged by 6 key themes:

1. Operational Energy & Carbon
2. Embodied Carbon & Circular Economy
3. Transport & Connectivity
4. Flood Risk & Water Management
5. Ecology & Biodiversity
6. Health, Wellbeing & Social Value

The following pages set outcomes, performance indicators and targets, and design principles for each of the 6 themes (the 'WHAT').

The next section describes actions that should be taken at each RIBA stage to embed these principles and targets, and the process for ongoing monitoring (the 'HOW').

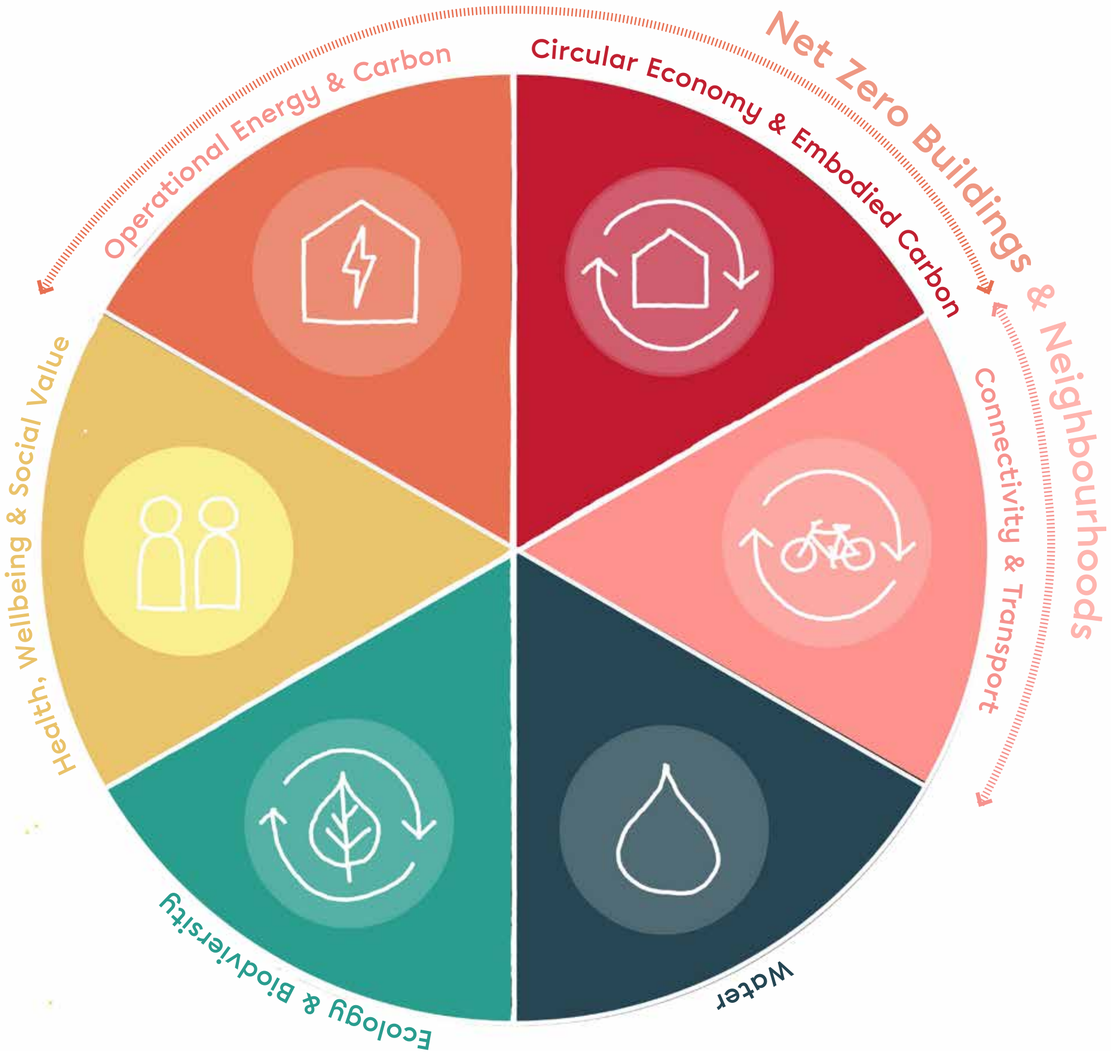
The targets are split into 'Compliance Targets' that are required to meet regulations or policy (usually the London Plan 2021), and 'Aspirational Targets' that seek to embed sustainability best practice and net zero ambitions from the earliest stages (to enable maximum benefits and minimum costs).

Aspirational targets in Sections 3.1 and 3.2 are mainly drawn from LETI and Passivhaus Trust standards and guidance for net zero homes. Where aspirational targets cannot be met within technical and financial constraints, design teams will be required to set out clear reasoning to enable learning and improvement over time.

Using this framework as a guide, project specific targets can be agreed with the Be First Sustainability Manager to respond to particular constraints and opportunities, and non-residential uses. This will set a consistent framework across the portfolio, while allowing flexibility to suit a wide range of projects.

Key Performance Indicators:

Indicator	Compliance Target	Aspirational Target
Form factor (external heat loss area/ usable internal floor area)	N/A	0.8 - 1.5 (up to 3 for houses)
Operational energy use intensity (kWh/m2 GIA/yr)	N/A	<35
Space heating demand (kWh/m2 GIA/yr)	N/A	<15
Carbon reduction on site (% reduction compared to Part L 2013)	>35%	100%
Roof coverage by solar panels (%)	N/A	70%
Upfront embodied carbon (kg CO2e/m2 GIA) (Modules A1-A5)	N/A	<500
Cycle parking (no. spaces)	London Plan (min.)	
Car parking (no. spaces)	London Plan (max.)	
Water use (l/person/ day)	<105	<75
Urban greening (UGF)	>0.4	
Biodiversity net gain (%)	>10%	
Air quality (% improvement on AQ Neutral)	At least AQ Neutral	AQ Positive
Daylight (% homes passing BRE 209 ADF criterion)	80%	100%
Heat risk	TM59 (DSY1)	TM59 (DSY2 and 3)
Noise	BS8233/AVO Guide	
Food growing space (m2)	Protect existing	Provide additional



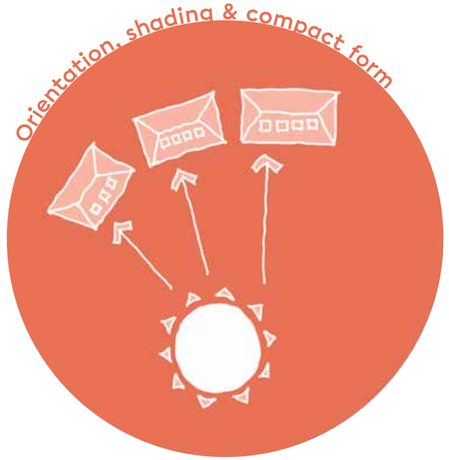
3.1
Operational Energy & Carbon

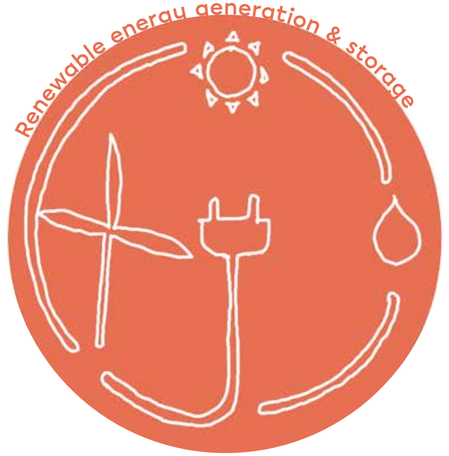
Outcomes

1. Buildings are energy efficient and future-proofed (designed to avoid or minimise retrofit for net zero).
2. 100% of energy consumed is supplied by non-polluting renewable energy, optimising energy generated and stored onsite.
3. No residents live in fuel poverty.

Performance Indicators

Indicator	Compliance Target	Aspirational Target
Carbon reduction (% improvement on Part L 2013)	>35% and >10% Be Lean	100%
Form factor (external heat loss area/usable internal floor area)	N/A	0.8 - 1.5 (up to 3 for houses)
Glazing ratio (% of wall area)	N/A	10 - 30%
Energy use intensity (kWh/m2 GIA/yr)	N/A	<35
Space heating demand (kWh/m2 GIA/yr)	N/A	<15
Renewable electricity generation on site: solar panel roof coverage (%)	N/A	70% (combined with green roof)
Energy from renewable sources (%)	N/A	100%
Operational carbon emissions (kg CO2e/ m2 GIA/yr)	N/A	Net zero (minimise offsets)
Residents in fuel poverty (%)	N/A	Zero





Design Principles

+ Predominant facades ideally south-facing
+ Maximise dual aspect with cross-ventilation and avoid single aspect north-facing
+ Compact and efficient building form
+ Design elevations and glazing ratios to balance heat gain, heat loss and daylight (LETI glazing ratio targets N:10-20, E:10-15, S:20-30, W:10-15)
+ Include external shading (consider stacked projecting balconies to south facades)
+ Prioritise energy efficiency & passive design principles from the outset
+ Simplify and clearly define the thermal and airtightness lines and minimise thermal bridges (particularly repeating bridges)
+ Highly insulated & airtight building fabric and reduced peak energy demand (target LETI Climate Emergency Design Guide)
+ Include efficient background ventilation with heat recovery (MVHR) and openable windows, avoid mechanical cooling
+ Connect to district or low carbon heat (follow GLA heating hierachy and B&D Energy specs)
+ Maximise onsite renewable energy generation and storage (target 70% rooftop PV coverage, south/east/ west facing with plant to north)
+ Minimise offsets required to reach net zero
+ Enable effective sub-metering, monitoring and post occupancy evaluation

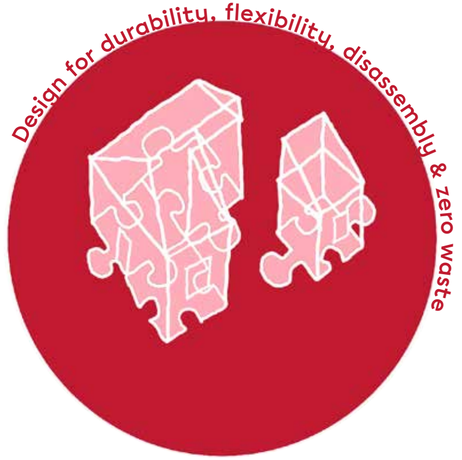
3.2
Embodied Carbon & Circular Economy

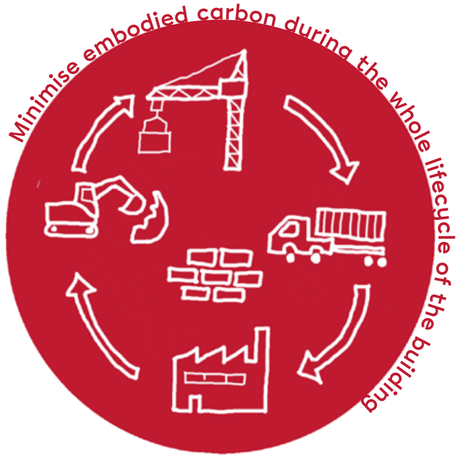
Outcomes

1. Buildings and neighbourhoods are designed, built and operated in a way that is resource efficient, low carbon, flexible and adaptable.
2. Materials and products are selected for their positive social and environmental benefit or for reducing negative impact (including carbon).
3. Reuse, recycling and upcycling are maximised, targeting zero waste to landfill.

Performance Indicators

Indicator	Compliance Target	Aspirational Target
Upfront carbon (kg CO2e/m2 GIA) (Modules A1-A5)	N/A	<500
Embodied carbon (kg CO2e/m2 GIA) (Modules A1-A5, B1-B5, C1-C4)	N/A	<625
Excavation, construction & demolition waste (% reuse/ recycling/ recovery)	95%	100%
Local sourcing of materials (% volume)	N/A	TBC
Materials & products with environmental certification (%)	N/A	40%
Reused/ recycled content (% volume)	20%	30%
Materials that can be reused (% volume)	N/A	50%
Waste to landfill (tonnes, construction and in use)	Zero biodegradable or recylable waste to landfill by 2026	
Municipal recycling (%, in use)	65%	
Single use plastics	N/A	Zero





Design Principles

+ Prioritise retrofit or reuse of existing built structures & materials where feasible
+ Conduct a pre-demolition audit at the earliest stage to inform design options
+ Maximise local, recycled and repurposed materials where suitable and available
+ Select low carbon, sustainable and responsibly sourced materials and request Environmental Product Declarations (EPDs), including FSC certification for all timber
+ Design for durability and flexibility
+ Design for disassembly and reuse (for example, consider mechanical fixings or cement with higher lime content)
+ Minimise waste during fabrication, construction and operation, and avoid single use plastics
+ Provide recycling & food waste facilities
+ Compact and efficient building form
+ Whole-life carbon analysis and a carbon reduction strategy should inform design options and decisions from early stages
+ Optimise cement replacement, targeting 50 to 70% GGBS
+ Absorb and store carbon through materials (like timber and unfinished concrete)

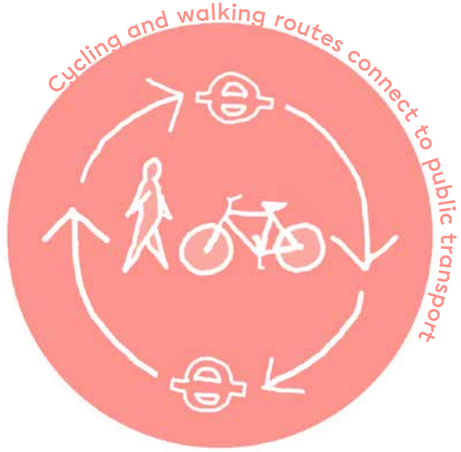
3.3
Transport & Connectivity

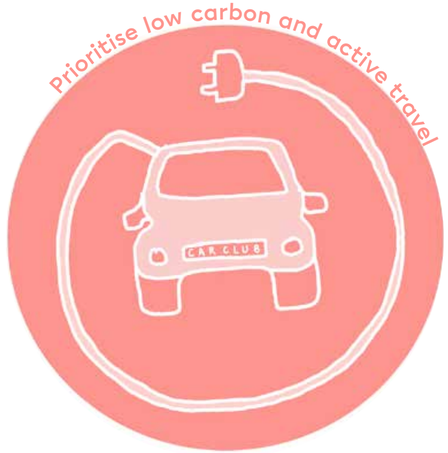
Outcomes

1. Buildings and neighbourhoods are well connected, physically and digitally.
2. It is easy, safe and attractive for people of all ages and abilities to walk, cycle, scoot and use public transport.
3. Car dependence and dominance is reduced and lower carbon options, like electric and shared vehicles, are facilitated.

Performance Indicators

Indicator	Compliance Target	Aspirational Target
Car parking ratio (number of bays per home)	car free or car lite (minimise in line with public transport accesibility)	
Cycle parking ratio (number of spaces per home)	London Plan Policy T5 and London Cycle Design Standards	
Electric vehicle charging (% of bays)	100%	
Accessible car parking (% of bays)	5%	10%
Non-standard cycle parking (% of spaces)	N/A	10%
Proportion of trips by foot, cycle or public transport (%)	75% by 2041	
Residents within 400m of public transport with at least 15min frequency (%)	N/A	100%
Construction transport emissions (tonnes CO2e)	N/A	Minimise





Design Principles

+ Demonstrate how the TfL 10 Healthy Streets principles are delivered through every stage of the design
+ Prioritise pedestrian safety and experience when designing entrances, streets and public realm. For example, narrowed streets, regular safe crossings, comfortable seating, shade, shelter and good lighting
+ Set out a clear strategy for level access throughout buildings and public realm
+ Early stage transport assessment should inform site capacity, use mix and layout
+ Clear wayfinding for walking and cycling, connecting to public transport and other key destinations
+ Design cycle routes, parking and facilities to incentivise cycling over car use and contribute to the borough-wide walking and cycling network
+ Ensure car parking is designed to reduce its prominence and enable adaptation to alternative uses in future
+ Promote car-sharing (including car clubs) and provide electric vehicle infrastructure
+ Enable delivery consolidation and reduced vehicle trips (including construction)
+ Ensure sufficient ducting space for full fibre connectivity infrastructure to all end users

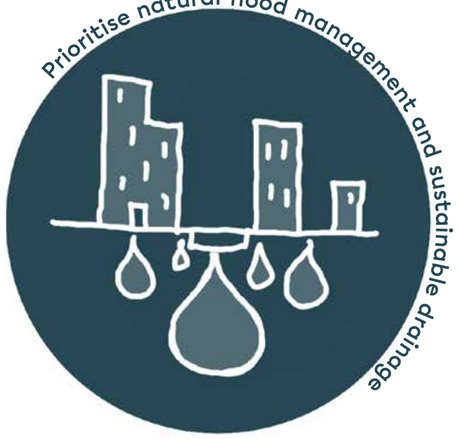
3.4
Flood Risk & Water Management

Outcomes

1. Everyone has access to clean drinking water.
2. Water is used efficiently and returned clean to the environment.
3. Buildings and public realm contribute to sustainable water management and flood risk mitigation in the surrounding area.

Performance Indicators

Indicator	Compliance Target	Aspirational Target
Water use (litres/ person/day)	<105	<75
Impermeable surfacing (% of site)	Avoid unless necessary	
Area covered by nature-based sustainable drainage (% of site)	Maximise	
Rainwater or greywater harvesting (% of irrigation demand)	N/A	100%
Conservation or restoration as wetland or aquatic habitat (e.g. ponds, streams) (% of site)	Site specific	
Waste water recycled onsite (%)	Site specific	
Drought resistant species (% of planting)	Site specific	



Design Principles

+ Assess flood risk upfront (from all sources, including surface water flood risk and latest climate projections) and set out a clear approach to mitigating and managing risk through appropriate uses, layout and design
+ Ensure generous setbacks from watercourses
+ Contribute to river and wetland restoration and naturalisation
+ Protect and enhance access to watercourses
+ Aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible
+ Prioritise green over grey features, in line with the GLA drainage hierarchy
+ Prioritise natural flood management and sustainable drainage methods that deliver multiple benefits (including increased flood storage, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation)
+ Avoid impermeable surfacing
+ Explore options for green and blue roofs, rainwater harvesting and greywater reuse
+ Minimise the potential for misconnections between foul and surface water networks
+ Incorporate smart water metering

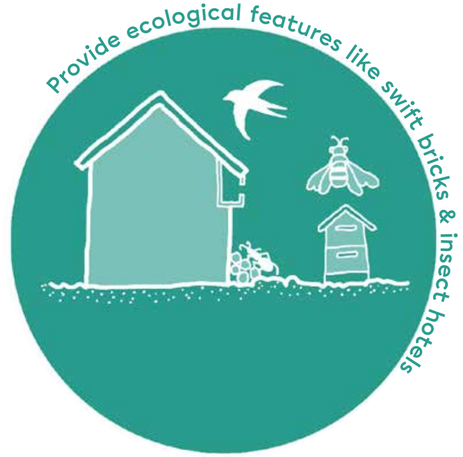
3.5
Ecology & Biodiversity

Outcomes

1. Everyone has easy access to nature-rich open space.
2. Habitats and biodiversity are protected and restored for the benefit of people and nature.
3. There is a connected, high quality network of green infrastructure that contributes to biodiversity, climate resilience and health & wellbeing.

Performance Indicators

Indicator	Compliance Target	Aspirational Target
Urban Greening Factor (UGF)	>0.4 (residential) >0.3 (commercial)	
Biodiversity Net Gain	>10%	
Areas of Deficiency in Access to Public Open Space (%)	London Plan Policy G4 Table 8.1 benchmarks for distances	
Native species (% of planting)	>75%	100%
New trees planted (no.)	Site specific	
New green open space created (m2)	Site specific	
Area of green roof (m2, % of roof area)	N/A	70% (with solar PVs)
Ecological features such as bird/bat boxes and bug hotels (no.)	Site specific	



Design Principles

+ Include urban greening as a fundamental element of building and site design - high quality, low maintenance landscaping, trees, green roofs, green walls and nature-based sustainable drainage.
+ Maximise public green space, particularly in areas of deficiency, considering future amenity and play space needs.
+ Enhance continuity and quality of habitats, including tree canopy cover, contributing to the wider green grid.
+ Design access routes and lighting to minimise wildlife disturbance, especially along wildlife corridors like waterways.
+ Prioritise native species, hedgerows rather than fences, and inclusion of mature trees and ponds/wetlands where possible.
+ Plant species selection should be informed by existing and surrounding habitats, ecologist advice and the LBBD Green Infrastructure & Biodiversity Strategy.
+ Avoid artificial surfaces and spikes.
+ Include ecological features, like bird bricks, bat boxes and insect hotels in appropriate locations (e.g. swift bricks under eaves, avoiding S/SW).
+ Replace chemical fertilizers with compost and biochar.

3.6
Health, Wellbeing & Social Value

Outcomes

1. Residents have active, social, meaningful lives and good health and wellbeing.
2. Places to live, work and visit are safe, equitable, joyful and support local prosperity.
3. Local identity and culture is nurtured and communities are empowered.

Performance Indicators

Indicator	Compliance Target	Aspirational Target
Resident satisfaction with their home (%)	N/A	100%
Resident satisfaction with their health & wellbeing (%)	N/A	100%
Air quality (% improvement on AQ Neutral)	At least AQ Neutral	AQ Positive
Daylight (% homes passing BRE 209 ADF criterion)	80%	100%
Heat risk	TM59 (DSY1)	TM59 (DSY2 and 3)
Noise	BS8233/AVO Guide	
Food growing space (m2)	Protect existing	Provide additional
Affordable workspace (m2)	Site specific	
Community facilities (m2)	Site specific	
Accessibility (% units accessible or adaptable)	10%	
Apprentices (% of workforce)	N/A	5%
Local labour (% of workforce)	N/A	25%
Local spend (%)	N/A	25%
Volunteering days	N/A	1 day/ year/ employee

Design Principles

+ Maximise dual aspect homes with cross-ventilation and avoid single aspect north-facing
+ Design window proportions to balance good natural daylight with minimal heat loss (consider horizontal proportions rather than vertical, minimising low level/full height glazing)
+ Ensure appropriate user control over the environment (like openable windows)
+ Enable connection to nature (like indoor plants, views and easy access to green spaces)
+ Prioritise materials that are natural and free of pollutants, toxins and VOCs
+ Design buildings and landscaping to minimise exposure to air pollution, particularly for vulnerable people
+ Enable effective post occupancy evaluation and leak detection for water, flammable and toxic substances
+ Promote a culture of sustainability, sharing, and neighbourhood exchange
+ Design buildings, public realm and procurement to support the local economy and promote diversity and equality of opportunity across ability, gender, race, age, sexual orientation (for example, level access, seating and good lighting)
+ Nurture local art, culture, heritage and sense of place, drawing on existing assets
+ Ensure meaningful community participation in design, decision-making, and events

Implementation & Monitoring

4.0
Implementation & Monitoring Plan

In order to acheive the outcomes and targets set by this framework, the following principles should underpin the approach to implementation and monitoring:

+ **Data driven and outcomes focused:** measure what matters, improve portfolio data collection, and close the feedback loop to inform future design and delivery
+ **Collaboration and transparency:** keep learning, sharing, and working collaboratively with design teams, contractors, residents, other stakeholders and the wider industry on the pathway to net zero
+ **Co-benefits/multi-solving solutions:** prioritise the many actions where cost and carbon overlaps, and health & wellbeing benefits for residents can be secured
+ **Long term stewardship:** ensure budgeting and decision-making is based on a true lifecycle cost and carbon approach, including operating costs for residents
+ **Embed sustainability:** across the organisation and from the earliest project stage to maximise benefits and minimise costs

An outcomes-led "design for performance" approach will form a golden thread throughout design, procurement, construction, handover and management.

The targets set out in the previous section will be reported against at each project stage (full suite of indicators) and gateway (KPIs).

The following pages set out checklists of key actions to be undertaken at each project stage, in addition to reporting against targets. All actions require collaboration, but the lead project member for each action is identified to clarify implementation responsibilities.

This framework and the ongoing monitoring and feedback, will be used to inform future updates of Be First documents (such as Briefs, Design Guidelines and ERs) and processes (such as gateway reporting, procurement policy, and handover procedures). The targeted outcomes will also form the basis, alongside other quality and delivery ambitions, of strategic Be First projects (like the MMC Pattern Book and Digital Strategy).

Any cost implications, trade-offs and benefits associated with net zero specifications will be carefully interrogated and monitored on an ongoing basis, both at the project and portfolio levels, to enable prioritisation of the most cost-effective and beneficial solutions. Certain areas, such as embodied carbon, will require significant innovation over the coming years, working in collaboration with designers, contractors and supply chains. This strategy provides a clear set of targets to coalesce around.

Sustainability is closely affiliated with social value. Given there is an existing corporate social value strategy and impact monitoring portal, the governance and monitoring of this sustainability strategy will align where possible rather than duplicating. Sustainability targets will be added to the impact monitoring portal, allowing contractors to provide updates in one place. Similarly, regular social value forums between contractors, the council and Be First will be combined into both social value and sustainability.

An annual impact report will be created for sustainability and social value, to communicate and celebrate achievements in both areas.

Enabling Actions

Action	Lead	Key Contributors
Set up a Sustainability Working Group with champions from each team, to meet quarterly, monitor progress, and share ideas.	Be First Sustainability Manager	All Be First teams
Survey staff sustainability knowledge / skills to identify opportunities, gaps and training needs.	Be First Sustainability Manager	All Be First teams
Improve portfolio data collection on sustainability, reporting against targets at each RIBA Stage.	Be First PMO, DM & CM	Be First Sustainability Manager, External Design Team, Contractor
Re-introduce a regular staff newsletter to share global, national and local Sustainability updates.	Be First Sustainability Manager & Comms Team	All Be First teams
Include consideration of whole-life carbon alongside lifecycle costs in future updates of ERs.	Be First Design Team & Sustainability Manager	Be First PMO
Embed zero carbon and wider sustainability ambitions into strategic projects, such as MMC and Digital Twin	Be First Design Team & Sustainability Manager	All Be First teams
Collaborate with designers, contractors and wider industry (e.g. LETI, UKGBC, Boroughs) to push innovation in reducing whole-life carbon and supporting the circular economy.	Be First Design Team & Sustainability Manager	All Be First teams
Update templates and processes to include sustainability KPIs / comments from the Sustainability Manager at key gateways, member briefings, etc.	Be First PMO & Sustainability Manager	Be First DM & CM
Review Planning (DM) processes to embed sustainability principles & metrics e.g. updated pre-app and validation checklists.	Be First Planning Team & Sustainability Manager	
Develop a sustainable procurement policy to align with this strategy.	Be First PMO, CM & Sustainability Manager	
Embed delivery of this Sustainability Framework into recruitment, job descriptions, and appraisals.	Be First HR, SMT & Sustainability Manager	All Be First teams

4.1
Action Plan by Project Stage

Stage 0: Strategic Definition

Theme	Action	Lead	Key Contributors
General	Set a clear net zero ambition, sustainability brief and KPIs using this framework as a guide and in consultation with the Be First Sustainability Manager.	Be First DM	Be First Design Team & Sustainability Manager
Operational Energy & Carbon	Ensure the cost forecasts account for the sustainability aspirations of the project. Use Whole Life Costing.	Be First DM	Be First Design Team & Sustainability Manager
	Evaluate and apply lessons learnt from previous projects and Post Occupancy Evaluations (POEs), where applicable.	Be First DM	Be First Design Team & Sustainability Manager
Circular Economy & Embodied Carbon	Understand the need for the project. Does it require a new building or is there an opportunity for refurbishment?	Be First DM	Be First Design Team & Sustainability Manager
Connectivity & Transport	Prioritise sites with good connectivity or with the potential to unlock sustainable transport infrastructure investment.	Be First DM	Be First Design Team, Be First Planning & Transport Team
Water & Flood Risk Management	Avoid developing on floodplains and wetlands.	Be First DM	Be First Design Team & Sustainability Manager
Ecology & Biodiversity	Prioritise brownfield sites.	Be First DM	Be First Design Team & Sustainability Manager
Health, Wellbeing & Social Value	Conduct site surveys of ground conditions and contamination.	Be First DM	Be First Design Team & Sustainability Manager

Stage 1: Preparation and Briefing

Theme	Action	Lead	Key Contributors
General	Translate the project's sustainability aspirations and specific building requirements into a project brief. Include any certification requirements, such as BREEAM or Passivhaus.	Be First DM	Be First Design Team & Sustainability Manager
Operational Energy & Carbon	Assess the risks that the expected form of contract / delivery could have on the project's Net Zero Carbon ambition and develop a procurement strategy to mitigate this risk.	Be First DM	Be First Design Team & Sustainability Manager, PMO

Stage 1: Preparation and Briefing (continued)

Theme	Action	Lead	Key Contributors
Operational Energy & Carbon	Ensure early discussion of energy supply strategy with Be First Senior Sustainability Manager and, where applicable, B&D Energy / suppliers.	Be First DM	Be First Sustainability Manager, B&D Energy
	Assess the site and surrounding environment for opportunities to optimise orientation, passive design, heat recovery, renewable energy generation and storage.	Be First Design Team & Sustainability Manager	B&D Energy
Circular Economy & Embodied Carbon	Conduct pre-demolition site audit as early as possible to identify opportunities for retrofit or reuse of structures or materials, to inform the brief and design options.	Be First DM	Be First Design Team & Sustainability Manager
Connectivity & Transport	Transport accessibility and capacity should inform site capacity and appropriate uses.	Be First Design Team	Be First Planning & Transport Team
	Assess proximity to public/low carbon transport and pedestrian/cycle routes, and opportunities to connect and improve the walking and cycling network.	Be First Design Team	Be First Planning & Transport Team
Water & Flood Risk Management	Assess the flood risk of the site from all sources, including climate change projections.	Be First Design Team & Sustainability Manager	LBBD Flood Risk Officer
	Assess the site and surrounding environment for opportunities to naturalise waterways, provide natural flood risk management, and sustainable drainage.	Be First Design Team & Sustainability Manager	LBBD Flood Risk Officer
Ecology & Biodiversity	Identify surrounding areas of green infrastructure that could potentially be connected through the site.	Be First Design Team & Sustainability Manager	LBBD Parks / Ecology Officer
	Assess the existing landscape character and habitats on the site and surrounding environment. Identify any SINCs / protected natural spaces, mature trees, wetlands or other ecological features.	Be First Design Team & Sustainability Manager	LBBD Parks / Ecology Officer
Health, Wellbeing & Social Value	Gather site survey, climate risk and micro-climate information (sun, wind, rainfall, temperature).	Be First Design Team & Sustainability Manager	Be First Design Team & Sustainability Manager
	Identify key site constraints to health & wellbeing, including air pollution, noise and other nuisance.	Be First Design Team & Sustainability Manager	LBBD Air Quality / Public Health Officer
	Identify opportunities for placemaking and enhancing existing features, character, heritage, culture. Include meanwhile uses.	Be First Design Team & Sustainability Manager	LBBD, Be First Planning Team
	Assess local demand and supply of food growing space.	Be First Design Team & Sustainability Manager	LBBD, Be First Planning Team

4.1
Action Plan by Project Stage

Stage 2: Concept Design

Theme	Action	Lead	Key Contributors
General	Appoint a Design Team with the skills & experience to deliver the net zero/ sustainability brief.	Be First DM	Be First Design Team & Sustainability Manager
Operational Energy & Carbon	Agree and report against KPIs and target specifications for fabric efficiency, renewables, heating and ventilation systems.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Demonstrate how the design optimises building orientation, follows passive design principles, and the London Plan energy and heating hierarchies.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Form factor calculations should accompany all design options / revisions. Mark up indicative insulation line and unheated areas.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Conduct predictive energy performance modelling (PHPP or similar) for regulated and unregulated energy.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Circular Economy & Embodied Carbon	All projects should demonstrate application of GLA Whole-life Carbon Assessment pre-app stage principles and use early stage embodied carbon tools to inform design decisions. Focus on compact form and efficient structure at this stage.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Show how the design follows circular economy principles, and explores options for reuse of structures and materials.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Hold design team workshop/s to agree and coordinate circular economy and carbon reduction strategies.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Connectivity & Transport	Early stage transport assessment should inform site layout and design to optimise connectivity and sustainable travel.	Be First DM & External Design Team	Be First Design Team, Be First Planning & Transport Team
	Demonstrate how the TfL 10 Healthy Streets principles are delivered through the design.	Be First DM & External Design Team	Be First Design Team, Be First Planning & Transport Team

Stage 2: Concept Design (continued)

Theme	Action	Lead	Key Contributors
Water & Flood Risk Management	Explore options for rainwater harvesting and greywater reuse, particularly for landscape irrigation.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Demonstrate how the design follows the drainage hierarchy and addresses flood risk (from all sources).	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Ecology & Biodiversity	Urban greening must be a fundamental element of site and building design. Prepare an indicative Site Plan with surface type areas identified and preliminary Urban Greening Factor (UGF) calculation.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Protect and enhance biodoveristy through site and building design. Create an audit and Site Plan of existing and proposed trees, habitats and ecological features.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Health, Wellbeing & Social Value	Demonstrate compliance with London Plan 2021 Policy D6: Table 3.2 qualitative checklist.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Explain / illustrate air quality risks, opportunities and proposed mitigations.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Explain / illustrate urban heat island risks, opportunities and proposed mitigations. Complete Good Homes Alliance Early Stage Overheating Risk Tool. Demonstrate how the design follows the GLA cooling hierarchy.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Demonstrate compliance with best practice guidance such as Acoustics Ventilation and Overheating (AVO) Residential Design Guide 2020.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Identify potential locations for food growing in landscape plan.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning

4.1
Action Plan by Project Stage

Stage 3: Spatial Coordination

Theme	Action	Lead	Key Contributors
General	Review design development against sustainability brief and targets. Prepare detailed modelling updates and planning reports wth enough time for review and design refinement prior to planning submission.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Operational Energy & Carbon	Demonstrate how the design considers orientation, layout, form factor, insulation line, air tightness line, shading, glazing ratios, materials and other criteria to optimise the energy balance. Review u-values, thermal bridges, heating and hot water pipe lengths and MVHR layout.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Energy Statement required for Major developments, encouraged for all. Refer to GLA Guidance.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Prepare Home Quality Mark and/or BREEAM Pre-Assessments to determine compliance with relevant Local Plan and client requirements.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Carry out predictive (PHPP) modelling alongside SAP calculations. Estimate operational costs for residents.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Agree metering and post occupancy evaluation strategy.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Circular Economy & Embodied Carbon	Whole-life Carbon Assessement required for referable developments, encouraged for all. Refer to GLA WLC Guidance and RICS methodology. All projects must demonstrate embodied carbon reduction strategies.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Circular Economy Statement required for referable developents, encouraged for all. Refer to GLA guidance. All projects must demonstrate circular economy strategies.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning

Stage 3: Spatial Coordination (continued)

Theme	Action	Lead	Key Contributors
Connectivity & Transport	Provide a Transport Assessment (covering personal travel & servicing), Travel Plan, Construction Logistics Plan, Delivery & Servicing Plan.	Be First DM & External Design Team	Be First Design Team, Be First Planning & Transport Team
Water & Flood Risk Management	Provide a Flood Risk Assessment and Drainage Strategy.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Ecology & Biodiversity	Provide UGF Drawing/s for Approval (including calculation table and key) and include narrative in the DAS. Refer to draft GLA Urban Greening Factor Guidance & Calculator.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Demonstrate how the design will secure biodiversity net gain through an Ecologist Report and accompanying drawings. Refer to Natural England Biodiversity Metric 3.0 and supporting guidance.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
Health, Wellbeing & Social Value	Provide a Daylight & Sunlight Assessment. Refer to BRE 209 Site Layout Planning for Daylight & Sunlight.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Provide an Air Quality Assessment / Air Quality Positive Statement in line with the London Plan. Refer to GLA Guidance.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Energy Statement should include assessment and mitigation of internal overheating, following the cooling hierarchy and CIBSE TM59 (residential) or TM52 (non-residential).	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning
	Acoustic Assessment in line with BS 8233. Ensure assumptions align with Energy & Overheating Strategies.	Be First DM & External Design Team	Be First Design Team & Sustainability Manager, Planning

4.1
Action Plan by Project Stage

Procurement

Theme	Action	Lead	Key Contributors
General	Include net zero carbon and sustainability requirements, for both performance and process, in the tender documents.	Be First PMO, DM and CM	Be First Design Team & Sustainability Manager
Operational Energy & Carbon	Criteria for selecting the Contractor should include assessment of the Contractor's net zero carbon and sustainability skills and experience. Consult with Be First Senior Sustainability Manager.	Be First PMO, DM and CM	Be First Design Team & Sustainability Manager
	Highlight responsibilities under the building contract for construction quality, including sustainability KPIs and air-tightness testing requirements.	Be First PMO, DM and CM	Be First Design Team & Sustainability Manager
	Minimise provisional sums relating to sustainability (including landscaping)	Be First PMO, DM and CM	Be First Design Team & Sustainability Manager
Health, Wellbeing & Social Value	Align tender documents with Be First Social Value outcomes.	Be First PMO, DM and CM	Be First Design Team & Sustainability Manager
	Criteria for selecting the Contractor should include assessment of the Contractor's Social Value commitments and track record.	Be First PMO, DM and CM	Be First Design Team & Sustainability Manager

Stage 4: Technical Design

Theme	Action	Lead	Key Contributors
General	Review construction information, specifications and any design changes against sustainability brief and targets. Any derogations affecting sustainability should be agreed with the Be First Sustainability Manager.	Be First CM	Be First Design Team & Sustainability Manager
Operational Energy & Carbon	Include insulation and air-tightness lines on each drawing and identify airtightness requirements for service penetrations.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Provide detail drawings and calculations for key junctions / thermal bridges.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Review MVHR layout, including intake and exhaust ducts, and heat and hot water distribution. Minimise pipe / duct lengths and potential for energy loss / overheating.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Specify high performing PV panels.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Circular Economy & Embodied Carbon	Monitor Whole-life Carbon impacts of design development / decisions, using accurate Bills of Quanities. Record and report design changes and substitutions that influence energy use or embodied carbon.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Ecology & Biodiversity	Conduct ecological surveys (usually bats and birds) prior to demolition of structures or removal of vegetation and follow ecologist advice.	Be First CM and Contractor	Be First Design Team & Sustainability Manager

4.1
Action Plan by Project Stage

Stage 5: Manufacturing & Construction

Theme	Action	Lead	Key Contributors
General	Review construction quality and any alternative materials or products against sustainability targets. Contractor must regularly report against KPIs on Impact Portal.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Operational Energy & Carbon	Ensure construction programme allows for appropriate sequencing and time allocation for net zero, including site inductions and toolbox talks (e.g. to net zero or passivhaus construction), early air-tightness testing (at first fix and again pre-completion) and strong quality assurance (e.g. insulation and air-tightness).	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Contractor must identify a site-based sustainability / net zero carbon champion, who should provide regular updates to the Be First Senior Sustainability Manager.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Undertake client / contractor site inspections for fabric and services installation quality assurance, and building systems testing, fine-tuning them as needed.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Minimise and monitor energy use and carbon emissions on site during construction, and report this on the Impact Portal.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Circular Economy & Embodied Carbon	Keep an updated 'Net Zero Carbon Risk Register' and flag any key risks with the client team.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Minimise and monitor excavation, demolition and construction waste, and report this on the Impact Portal. Aim to eliminate single-use plastics.	Be First CM and Contractor	Be First Design Team & Sustainability Manager

Stage 5: Manufacturing & Construction (continued)

Theme	Action	Lead	Key Contributors
Connectivity & Transport	Minimise and monitor vehicle trips and transport carbon emissions during construction, and report this on the Impact Portal.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Provide secure cycle storage on site and encourage active travel.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Water & Flood Risk Management	Minimise and monitor water use on site during construction, and report this on the Impact Portal.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Ecology & Biodiversity	Ensure appropriate tree protection during demolition / construction, and that any new planting is carried out at the appropriate time to optimise plant establishment and survival.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Health, Wellbeing & Social Value	Report against social value KPIs on the Impact Portal.	Be First CM and Contractor	Be First Design Team & Sustainability Manager

4.1
Action Plan by Project Stage

Stage 6: Handover

Theme	Action	Lead	Key Contributors
General	Deliver As-Built information pack as part of handover package, including operational energy predictions, and Whole Life Carbon analysis. Compare to earlier estimates and share lessons learned.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Operational Energy & Carbon	Provide a simple Resident Home User Guide with information and advice on how to operate the home efficiently and comfortably, including the heating and ventilation systems, and any advice to mitigate overheating risk.	Be First CM and Contractor	Be First Design Team & Sustainability Manager, Reside, MyPlace, B&D Energy
	Conduct thorough commissioning and tuning of building systems to optimise performance, and provide approriate information and/or training for maintenance teams.	Be First CM and Contractor	Reside, MyPlace, B&D Energy
	Program in seasonal commissioning sessions at point of handover to ensure they are undertaken, and ensure Sub-Contractors are obliged to assist.	Be First CM and Contractor	Reside, MyPlace
Circular Economy & Embodied Carbon	Conduct post completion whole-life carbon assessment, and where required, submit to the LPA and/or GLA within 3 months of PC.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
	Conduct post completion circular economy assessment, and where required, submit to the LPA and/or GLA within 3 months of PC.	Be First CM and Contractor	Be First Design Team & Sustainability Manager
Ecology & Biodiversity	Handover clear habitat and landscape management plans.	Be First CM and Contractor	Be First Design Team & Sustainability Manager, Reside, MyPlace

Stage 7: Use

Theme	Action	Lead	Key Contributors
General	Following one year of operation, undertake a Post Occupancy Evaluation (POE) of the building's performance against the targets set in the initial project brief, and those predicted during the design and construction process.	Be First Design Team & Sustainability Manager	Be First CM, DM, Contractor and External Design Team
Operational Energy & Carbon	Compare predicted energy performance to actual energy performance of the building, and report on the GLA's 'Be Seen' monitoring portal for 5 years following completion.	Be First Sustainability Manager	Reside, B&D Energy
	Publicly report the annual operating carbon emissions and other KPIs.	Be First Sustainability Manager	Reside, B&D Energy
	Host a post-project review with the Client and the Design Team to discuss the findings of the POE and the overall project delivery.	Be First Design Team & Sustainability Manager	Be First CM, DM, Contractor and External Design Team
	Implement findings of POE to finetune building systems and reduce the performance gap.	MyPlace, Reside	Be First CM, Design Team & Sustainability Manager
	Publish data and lessons learnt, where possible, to share knowledge throughout the project team and the wider industry in order to reduce the risk of performance gaps reoccurring in buildings.	Be First Design Team & Sustainability Manager	Be First CM, DM, Contractor and External Design Team
Ecology & Biodiversity	Ensure clear responsibilities and budgets for habitat and landscape maintenance	MyPlace, Reside	Be First Design Team & Sustainability Manager

4.2
Collaboration & Engagement

Acheiving the outcomes set by this framework will require a collaborative effort across all teams within Be First, and with the designers, contractors and consultants we work with to deliver projects. Collaboration and regular engagement will also be required with the Council, Reside, MyPlace, B&D Energy and other council-owned organisations to align our respective decarbonsiation plans and jointly deliver on the borough-wide climate change response. Engagement with residents and the wider industry, to align ambitions and share learning and benefits will be crucial on the journey towards net zero.

The initial communications and engagement approach with these stakeholders will ential:

+ **Be First Sustainability Working Group:** Representatives from each of the Be First teams (Design, Planning, Development Management, Construction Management, PMO, Communications) have helped develop this strategy, and will continue as Sustainability Champions, meeting quarterly to help with implementation and monitoring of the strategy and future revisions.
+ **Be First Staff:** Staff will be kept informed and invited to build their sustainability knowldge and share their ideas and successes, through initiatives such as the Be First Sustainability Newsletter, and a series of sustainability themed Lunch & Learn webinars.
+ **Be First Senior Management and Board:** Senior Management and the Board have approved this strategy and will receive regular progress updates of performance against targets and outcomes, as well as key risks.
+ **Council & Operations Sustainability Working Group:** Council commissioners have approved this strategy to ensure compliance with the Council's net zero and sustainability ambitions. Representatives from Be First, Reside, MyPlace, B&D Energy, and the Council will meet at least once a year to review progress, update targets and actions where needed, and ensure buy-in.
+ **Contractors, Designers & Consultants Sustainability Forum:** Contractors, architects and consultants Be First works with regularly will be invited to attend collaborative forums to assist with implementation, monitoring and annual reviews, and sharing lessons learned, perhaps combining with social value.
+ **Resident Engagement:** This sustainability framework sets the scene for public and resident engagement. For example, on particular projects, residents could be invited to co-create a vision for their future neighbourhood, helping to prioritise aspects of sustainability and wellbeing that are most important to them. Resident feedback, ideas and post-occupancy evaluation will be a critical part of the feedback loop informing future designs and strategy updates.
+ **Industry Forums, Events, Awards & Knowlege Sharing:** Be First will participate in relevant industry forums and networks (including LETI and London Councils Climate Change Working Groups) to share insights, contribute to guidance and policy development, and promote successes across Be First's portfolio.

Phoenix Park is a successful example of community co-design

4.3
Key Risks, Opportunities & Priority Actions

Key Risks & Opportunities

Theme	Risk	Response	Lead
General	Limited sustainability expertise / capacity within Be First. Transformative action on climate change requires a whole organisation approach.	Consider sustainability as part of recruitment, appraisals, training. Regular sustainability updates (newsletter).	Be First SMT, Communications Team & Sustainability Manager
	Legislative and policy context is complex and rapidly changing, with significant future leaps expected to meet net zero commitments - including Building Regulations Future Homes Standard 2025.	Design and deliver to Future Homes and net zero standards now (using this strategy) to avoid future redesign, retrofit or non compliance.	Be First SMT and Sustainability Manager
Operational Energy & Carbon	Limited contractor and supply chain capacity / maturity to deliver zero carbon products and buildings within normal construction budgets.	Set clear, ambitious client briefs (using this strategy). Work collaboratively with design teams and contractors who share our ambitions, learn lessons and improve progressively.	Be First SMT, CM Team, Design Team & Sustainability Manager
	B&D Energy heat networks currently run on gas (a fossil fuel) which limits connected developments ability to use 100% renewable (zero carbon) energy.	Work with B&D Energy and LBBD to ensure rapid decarbonisation of heat networks.	Be First SMT and Sustainability Manager
Circular Economy & Embodied Carbon	Current GLA AHP Funding (2021-26) prohibits the use of timber in external walls, which excludes a key solution for radically reducing embodied carbon.	Advocate for safe, appropriate timber use in future funding programmes / policy.	Be First SMT, Design Team & Sustainability Manager
Theme	**Opportunity**	**Response**	**Lead**
General	Be First pipeline provides significant scale and certainty to encourage supply chain partners to meet our sustainability requirements. Other public sector developers provide further aggregation of demand if we work collaboratively.	Embed sustainability into strategic projects (MMC Pattern Book). Work collaboratively with our suppliers, partners & peers.	Be First SMT, Design Team & Sustainability Manager
	Be First model, as part of a family of council-owned companies, facilitates a close relationship with asset managers and residents. This enables a long term stewardship approach, considering whole lifecycle cost and carbon.	Embed whole-life cost and carbon as part of decision-making and reporting. Undertake post-occupancy evaluation of homes.	Be First SMT, PMO, Design Team and Sustainability Manager
	Grant funding and green finance at preferential rates may become available for sustainability-led projects.	Keep up to date with public/private offers that suit our projects.	Be First SMT, Council and Sustainability Manager

Priority Actions

Indicator	Action	Benefits	Costs
Portfolio database completeness	Improve portfolio data collection on sustainability, reporting against targets at each RIBA Stage and Project Gateway.	Better understand strengths and challenges to continue improving. Celebrate successes.	Neutral
Form Factor: 0.8 - 1.5 (up to 3 for houses)	Compact and efficient building form (low form factor). Form factor = external heat loss area / usable internal floor area. Design teams should regularly test and report form factor to inform options and decision-making.	Operational energy efficiency, reduced embodied carbon, reduction in construction complexity and costs.	Reduction
Energy Use Intensity: 35 kWh/m2 GIA/yr	Require predictive energy modelling in addition to SAP to enable accurate prediction and minimisation of energy use and operational costs for residents.	Operational energy & carbon reduction, enabling net zero. Addresses resident fuel poverty.	Increase (modelling costs - negligible if included in brief and tender requirements upfront)
Solar panel roof coverage: 70%	Optimise onsite renewable energy generation and storage. Target 70% rooftop PV coverage, south/east/west facing with plant to north. Can be combined with green roof.	Operational carbon reduction, enabling net zero and resilience. Addresses resident fuel poverty.	Increase (minor capital cost, partly offset by reduced carbon offset fund contributions)
Upfront embodied carbon: <500 kg CO2e/m2 GIA	All projects should demonstrate application of GLA Whole-life Carbon Assessment pre-app stage principles and use early stage embodied carbon tools to inform design decisions. RICS Whole-life Carbon Assessement required for referable developments, encouraged for all.	Embodied carbon reduction. Better understanding of high impact elements and reduction options. Prepared for likely future regulation of embodied carbon.	Increase (modelling costs - negligible if included in brief and tender requirements upfront. Free carbon tools available for smaller projects / early stages)
Healthy Streets, Car and Cycle Parking: London Plan standards	Prioritise pedestrian & cyclist safety, experience and inclusivity when designing entrances, streets and public realm. Minimise car parking, reduce its prominence, include EV charging and car sharing infrastructure and enable adaptation to alternative uses in future.	Reduced transport carbon emissions, improved air quality and resident health & wellbeing. More attractive neighbourhoods.	Neutral (required for policy compliance, but helpful to emphasise priority to design teams)
Urban Greening Factor: >0.4 (residential) >0.3 (commercial)	Include urban greening as a fundamental element of building and site design - high quality, low maintenance landscaping, trees, green roofs, green walls and nature-based sustainable drainage.	Enhanced biodiversity, flood and heat risk mitigation, water and air quality, carbon absorption, amenity and recreation.	Neutral / possible increase if beyond policy minimum (minor landscaping capital costs)

Definitions, Tools & References

5.0
Definitions, Tools & References

Operational Energy & Carbon

+ LETI Client Guide for Net Zero
+ LETI Climate Emergency Design Guide
+ Easi Guide to Passivhaus Design by Levitt Bernstein and Etude
+ Energy modelling: Complement SAP with Passivhaus Planning Package (PHPP) or similar demand modelling
+ GLA Energy Assessment Guidance
+ GLA Be Seen Guidance and Reporting Spreadsheet
+ London Heat Network Manual II
+ London Heat Map
+ B&D Energy Specifications for Developers
+ London Plan 2021 Chapter 9
+ Climate Framework: climateframework.com

Embodied Carbon & Circular Economy

+ GLA Design for a Circular Economy Primer
+ GLA Circular Economy Statement Guidance
+ GLA Whole Life Cycle Carbon Assessments Guidance
+ GLA WLC Assessment Pre-app Stage Principles (yes / no questions)
+ LETI Embodied Carbon Primer
+ RICS Professional Statement: Whole Life-Cycle Carbon Assessment for the Built Environment
+ Whole life carbon design tools: FBCS Carbon Tool (Excel), MESH Calculator (Excel) or Hawkins Brown Emissions Reduction Tool (Revit)
+ PHribbon: Passivhaus Planning Package embodied carbon add-on
+ Full Circle to Reuse by Elliott Wood
+ RELondon Circular Economy resources
+ Climate Positive Landscape Design Toolkit
+ BRE Green Guide to Specification
+ London Plan 2021 Chapter 9

Transport & Connectivity

+ TfL Guide to the Healthy Streets Indicators
+ London Cycle Design Standards
+ GLA Sustainable Transport, Walking and Cycling guidance
+ LBBD Walking & Cycling Strategy
+ London Plan 2021 Chapter 10

Flood Risk & Water Management

+ CIBSE Guide G
+ BREEAM excellent standard for the 'Wat 01' water category
+ Regional Flood Risk Appraisal (RFRA)
+ Thames Estuary 2100 Plan
+ London Rivers Action Plan
+ London Sustainable Drainage Action Plan
+ LBBD Strategic Flood Risk Assessment (SFRA) and Local Flood Risk Management Strategy
+ LBBD Green Infrastructure & Biodiversity Strategy (and Summary, which includes design guidance for sustainable drainage)
+ London Plan 2021 Chapter 9

Ecology & Biodiversity

+ Natural England Biodiversity Metric 3.0
+ Greenspace Information for Greater London
+ GLA Urban Greening Factor Guidance & Calculator
+ London Environment Strategy
+ LBBD Green Infrastructure & Biodiversity Strategy (and Summary)
+ LBBD List of Native Trees, Shrubs and Plants of Local Provenance
+ LBBD Parks and Open Space Strategy
+ LBBD Biodiversity Survey
+ LBBD SINC Citations
+ CIEEM, IEMA & CIRIA (2019) Biodiversity Net Gain: Good Practice Principles for Development
+ Tree valuation: CAVAT or i-Tree Eco
+ Natural England GI Portal - Principles, Standards, Design Guide, Case Studies
+ Climate Positive Landscape Design Toolkit
+ London Plan 2021 Chapter 8

Health, Wellbeing & Social Value

+ London Climate Risk Map
+ Be First Social Value Strategy & Project Plans
+ Be First Community Engagement Team
+ BRE 209 Site Layout Planning for Daylight & Sunlight.
+ GLA Guidance on Air Quality Assessment
+ CIBSE TM59 and TM52
+ Acoustics Ventilation and Overheating (AVO) Residential Design Guide 2020 and BS 8233
+ London Plan 2021 Chapters 3, 8 & 9

Net Zero Carbon (in operation): When the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset.

(UKGBC)

Embodied Carbon: is the greenhouse gas emissions and removals associated with materials and construction processes throughout the whole life cycle of an asset.

Whole Life-Cycle Carbon (WLC): emissions are the carbon emissions resulting from the materials, construction and the use of a building over its entire life, including its demolition and disposal. A WLC assessment provides a true picture of a building's carbon impact. Whole life carbon = operational carbon + embodied carbon.

(LETI)

Green Infrastructure (GI): is a network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity

(National Planning Policy Framework, 2021)

BeFirst

HEARTS & MINDS, BRICKS & MORTAR