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SUSTAINABILITY STATEMENT

45 Epsom Road

45 Epsom Road, Guildford, Surrey GU1 3PT

CLIENT	DOCUMENT REF	REVISION	DATE	BNG	GRID REF
Private Client	FA-SUS-0108	P01	3 June 2025	Exempl	TQ 00307 49700

Contents

Document control

PROJECT	45 Epsom Road
REPORT	Sustainability Statement
SITE	45 Epsom Road, Guildford, Surrey GU1 3PF
CLIENT	Private Client
DOCUMENT REF	FA-SUS-0108
REVISION	P01
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PLANNING STAGE	Full planning application
PREPARED BY	Fortress Associates

This report has been prepared for the sole use of the named client for the purposes of the planning application described. Environmental information reflects the datasets listed in the Data Sources section as at the date of access; conditions may change. No liability is accepted to third parties.

Executive summary

This Sustainability Statement accompanies a full planning application for erection of 2no. three-bedroom all-electric houses with heat pumps, rooftop PV, new garden planting and two street trees at 45 Epsom Road, Guildford, Surrey GU1 3PF. It sets out how the development performs across every sustainability topic the development plan engages - energy and carbon, water, materials and circular economy, waste, biodiversity and urban greening, climate change adaptation, flood risk, sustainable transport, and health and wellbeing - with each commitment quantified and its method stated.

The headline commitments are: fossil-fuel-free heating with roof-mounted solar PV, delivering a carbon reduction of the order of 67% against the Part L 2021 baseline; water consumption of 101.3 litres per person per day through the committed fittings schedule; an urban greening factor of 0.28; biodiversity enhancement beyond the exempt baseline.

The site-specific evidence supporting the statement was drawn from the national open datasets at the date of assessment: the Environment Agency flood map (Flood Zone 1), Natural England's ecological designation datasets, the national planning constraint datasets and the UK-AIR air quality boundaries. Construction impacts are managed through a Site Waste Management Plan with 90% landfill diversion and good-practice dust and noise controls.

The development accords with the National Planning Policy Framework and the sustainability policies of Guildford. There is no sustainability reason to withhold planning permission.

Key sustainability information

Item	Value
Site address	45 Epsom Road, Guildford, Surrey GU1 3PF
OS grid reference	TQ 00387 49700
Local planning authority	Guildford
Development	Erection of 2no. three-bedroom all-electric houses with heat pumps, rooftop PV, new garden planting and two street trees.
Heating strategy	Air source heat pumps (all-electric)
Carbon direction vs Part L 2021	~67% reduction
Water consumption (fittings approach)	101.3 l/p/d (110 l/p/d level)
Urban greening factor	0.28 (benchmark 0.4)
Biodiversity net gain	Exempt - De minimis
Flood zone (Environment Agency)	Flood Zone 1
Air quality context	Outside any AQMA
Construction waste diversion	90% from landfill

Site and development description

The application site is located at 45 Epsom Road, Guildford, Surrey GU1 3PF, National Grid Reference TQ 00387 49700, within the administrative area of Guildford.

The proposal comprises: Erection of 2no. three-bedroom all-electric houses with heat pumps, rooftop PV, new garden planting and two street trees. The site currently comprises buildings / hardstanding (sealed surfaces); the proposed buildings are 2 storeys.

Erection of 2no. three-bedroom all-electric houses with heat pumps, PV, new garden planting and two street trees.

Development and landscape quantum

Parameter	Value	Note
Total site area	620 m2	
New dwellings	2 units	
Gardens / lawn	280 m2	
Planting beds / shrubs	60 m2	
New trees	2 trees	
Permeable paving	60 m2	

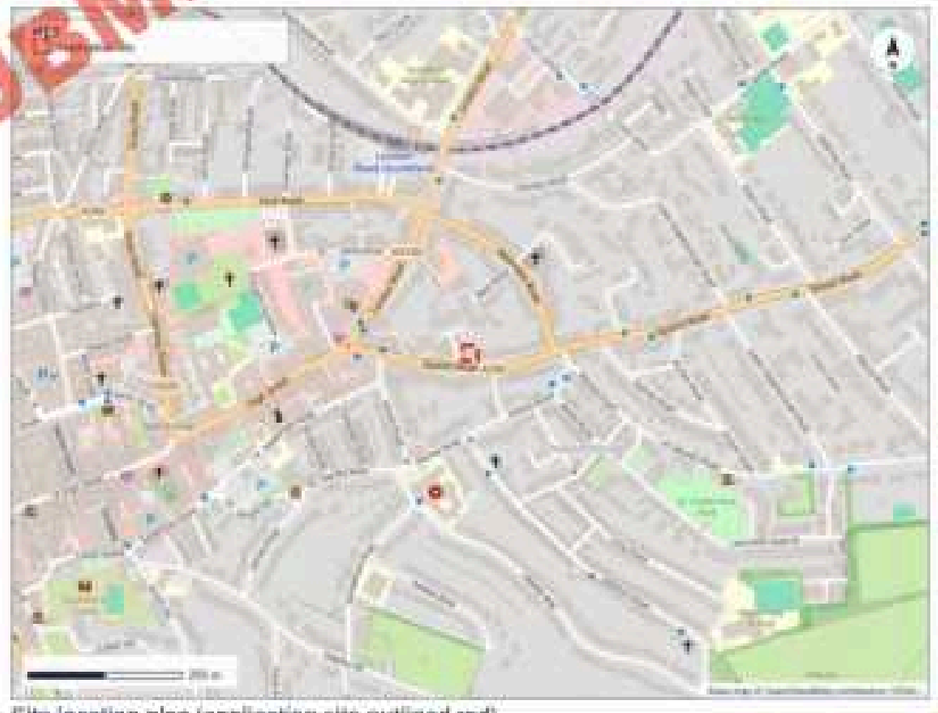

Figure 1 - Site location plan (application site outlined red)

Planning policy context

National policy & Building Regulations

The National Planning Policy Framework (December 2024) requires the planning system to support the transition to net zero by 2050 and to take full account of all climate impacts including overheating, water scarcity, storm and flood risk (paragraph 161); new development should help reduce greenhouse gas emissions through its location, orientation and design, avoid increased vulnerability to climate impacts and incorporate green infrastructure and sustainable drainage (paragraph 164).

The regulatory baseline includes Part L (2021) for energy, Part G for water efficiency (with the 110 litres per person per day optional standard applied through planning conditions), Part O for overheating, Part S for electric vehicle charging, and the Environment Act 2021 biodiversity net gain framework. This statement demonstrates how the development meets and betters those requirements across every sustainability topic.

Local and regional sustainability policy

The development plan of Guildford includes sustainable design and construction, climate change, biodiversity and green infrastructure policies that new development must address, alongside the national framework. The relevant local policies are set out in this chapter, and each topic chapter of this statement responds to the corresponding policy requirement so the case officer can see compliance directly.

Sustainability strategy for the development

The development takes a whole-building approach to sustainability structured around the topics of this statement: energy and carbon, water, materials and circular economy, waste, biodiversity and urban greening, climate change adaptation, sustainable transport, and health and wellbeing. The headline commitments are fossil-fuel-free heating; roof-mounted solar PV; 101.3 l/p/d water efficiency; an urban greening factor of 0.28; and 90% of construction waste diverted from landfill. Each is quantified in the relevant chapter with the method stated, and together they demonstrate that sustainability has shaped the design rather than being added to it.

Local policy notes

The statutory development plan comprises the Guildford Borough Local Plan: Strategy and Sites (2019) and the Local Plan: Development Management Policies (2023). Key requirements are established in Policy D2: Climate change, sustainable design, construction and energy, Policy D16: Carbon Emissions from Buildings and Policy P7: Biodiversity in New Developments. These are supported by the Climate Change, Sustainable Design, Construction and Energy Supplementary Planning Document (2024). For major non-residential developments, the council requires a BREEAM rating of Excellent. Furthermore, policies mandate a 20% reduction in regulated carbon emissions against the Building Regulations Target Emission Rate, a maximum water consumption standard of 110 litres per person per day, and a minimum 20% Biodiversity Net Gain. The corresponding chapters of this statement respond to each of these requirements.

Energy and carbon

Energy-efficient design & low-carbon heat

The development follows the energy hierarchy. Demand is minimised first through a fabric-first approach - enhanced fabric specified with external walls at U-values of 0.18 W/m²K or better, roofs 0.13 W/m²K, windows 1.4 W/m²K and an air permeability no worse than 5 m³/(h·m²) at 50 Pa - each bettering the Part L 2021 limiting standards, with continuity of insulation and 100% LED lighting. Heat is then supplied by air source heat pumps (all-electric), removing all on-site combustion so the development's heating decarbonises with the electricity grid. Services are metered so occupants can see and manage their consumption.

Renewable energy

Renewable energy is provided by a roof-mounted solar photovoltaic array, laid out within the roof plane and sized to the available unshaded roof area, with generation metering. Combined with the heat pump strategy, on-site renewables reduce the development's reliance on delivered energy and its running costs.

Carbon performance summary

Assessed against a Part L 2021 baseline with SAP 10.2 emission factors, the combination of enhanced fabric, air source heat pumps (all-electric) and solar PV delivers a regulated carbon reduction of the order of 67% against the notional building. The energy strategy, its stage-by-stage carbon arithmetic and the committed specifications are set out in full in the Energy Statement accompanying the application, and the commitments there are repeated in the summary of measures in this document.

Water efficiency

Method: the fittings approach of the Water Efficiency Calculator methodology (Approved Document G), with the committed fittings schedule below.

Water consumption & fittings

Water consumption is calculated with the fittings approach of the Water Efficiency Calculator methodology: WC (dual flush) 4/2.6 litres; Basin taps 5 l/min; Bath 170 litres to overflow; Shower 8 l/min; Kitchen sink taps 6 l/min; Washing machine 8.17 l/kg; Dishwasher 1.25 l/place setting. The predicted internal consumption is 101.3 litres per person per day - meeting the 110 l/p/d optional standard (Approved Document G, applied by planning condition) - with 106.3 l/p/d including the 5 l/p/d external use allowance. The fittings schedule above is a commitment of this statement and is carried through Building Regulations approval.

Water management & external use

External water demand is minimised: landscape planting is selected for low water demand and established with mulching, and water butts collect roof runoff for garden use. Each dwelling is separately metered, hot and cold pipe runs are kept short, and leak detection is provided on supplies.

These measures reduce consumption in use beyond the fittings calculation.

Water fittings schedule and calculation

Fitting	Specification	Consumption
WC (dual flush)	4/2.6 litres	13.54 l/p/d
Basin taps	5 l/min	9.48 l/p/d
Bath	170 litres to overflow	18.7 l/p/d
Shower	8 l/min	34.96 l/p/d
Kitchen sink taps	6 l/min	13 l/p/d
Washing machine	8.17 l/kg	17.16 l/p/d
Dishwasher	1.25 l/place setting	4.5 l/p/d
Internal total (x0.91 normalisation)		101.3 l/p/d
Benchmark	the 110 l/p/d optional standard (Approved Document G, applied by planning condition)	110 l/p/d - met

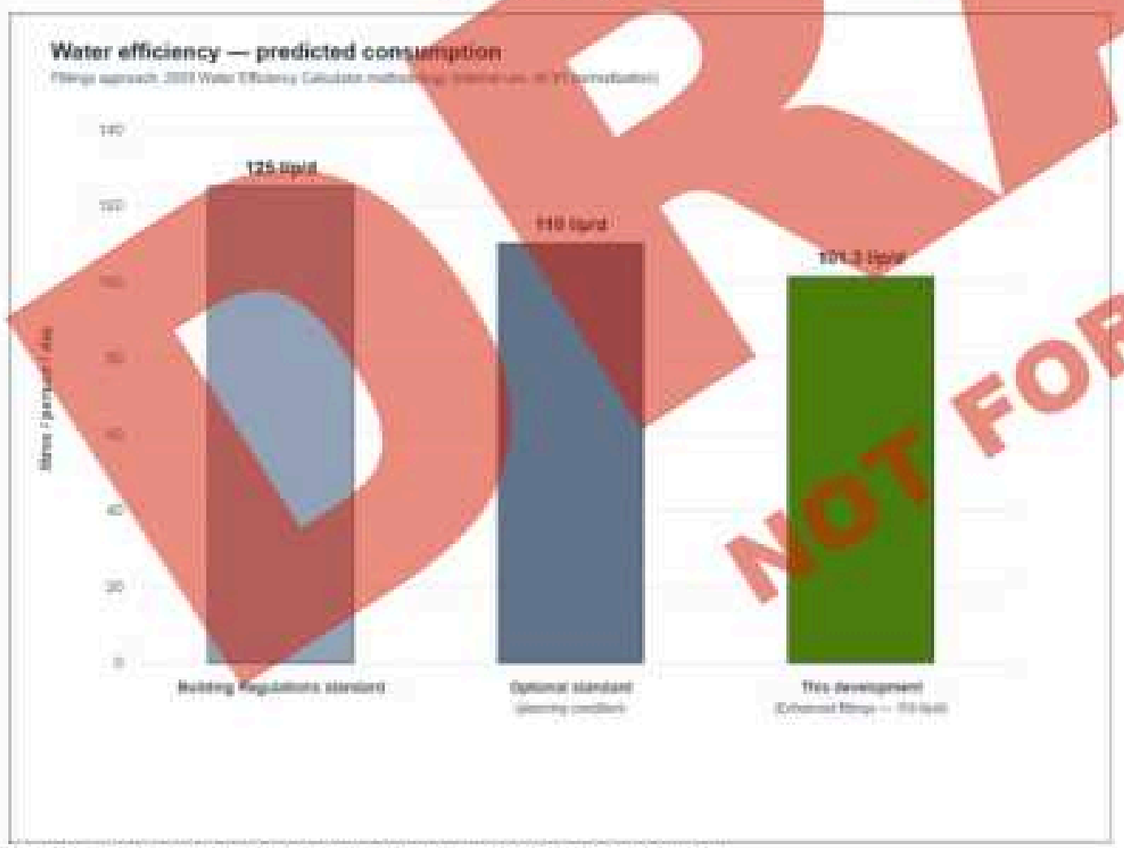

Figure 2 - Predicted water consumption against the Part G benchmarks

Climate change adaptation and flood risk

Overheating & the cooling hierarchy

Overheating is managed through the cooling hierarchy: heat gains are minimised first (glazing g-values, window sizing by orientation, shading from reveals and landscape), internal gains are limited by efficient services, thermal mass moderates peak temperatures where available, and openable windows provide purge and cross-ventilation. Compliance with Approved Document O is demonstrated at Building Regulations stage on the approved layouts using these measures - active cooling is not required and is not provided.

Flood risk

The Environment Agency Flood Map for Planning places the site in Flood Zone 1 (low probability - less than 0.1% annual probability of river or sea flooding). Surface water is managed through the drainage measures in this statement, and the development does not increase flood risk elsewhere.

Resilience to future climate

The development is designed for the climate it will experience over its lifetime, taking the UKCP18 projections as the reference: hotter, drier summers (addressed through the overheating strategy, water efficiency and drought-tolerant planting), warmer, wetter winters and more intense rainfall (addressed through the surface water drainage measures and robust detailing), and the urban heat island effect (moderated by the greening measures - 65% of the site is vegetated or permeable). The fabric-first energy strategy also keeps the buildings comfortable and affordable to run as conditions change.

Ecology and biodiversity net gain

Assessed with the statutory biodiversity metric framework (habitat units = area x distinctiveness x condition), with the small sites metric where it applies; exemptions screened against the statutory framework.

Ecological baseline & designations

The site is currently buildings / hardstanding (sealed surfaces) - assessed as 'Developed land; sealed surface' under the statutory biodiversity metric habitat classification. No statutory ecological designation (SSSI), priority habitat or ancient woodland is recorded at the site itself on the Natural England national datasets. The site lies within the Waterden Road conservation area, and the landscape proposals respect its character.

Biodiversity net gain position

De minimis - the development impacts less than 25 m2 of on-site habitat (and no priority habitat), so the statutory biodiversity gain condition does not apply. Notwithstanding the exemption, the landscape proposals deliver a net improvement for biodiversity through the planting and enhancement measures set out below - the development leaves the site measurably better for wildlife than it stands today.

Ecological enhancement measures

Ecological enhancement is built into the development: integrated bird nesting bricks and bat roost features on suitable elevations, hedgehog-permeable boundaries between gardens, native and pollinator-friendly species throughout the planting schedule, 2 new trees, and external lighting designed to avoid light spill onto boundary vegetation (warm colour temperature, low-level, directed downward) so foraging corridors remain dark.

Urban greening and green infrastructure

Method: the urban greening factor of London Plan Policy G5 (surface factors of the February 2023 LPG: UGF = sum(area x factor) / site area - a policy target in London, applied here as a good-practice benchmark.

Urban greening & landscape

The urban greening factor of the development is 0.28, calculated with the London Plan Policy G5 surface factors (area x factor / site area) from the landscape schedule: 280 m² amenity grassland (x0.4); 60 m² flower-rich / shrub planting (x0.7); 20 m² new standard trees (x0.6); 60 m² permeable paving (x0.1); 220 m² sealed surfaces (x0). Assessed against the London Plan benchmark of 0.4 as good practice, the scheme maximises the greening the site can accommodate. In total 65% of the site is vegetated or permeable after development.

Sustainable drainage & permeable surfaces

Surface water follows the drainage hierarchy: runoff is managed as high up the hierarchy as ground conditions allow, with 60 m² of permeable paving to driveways and paths draining to ground, water butts intercepting roof water, and soft landscaped areas accepting overland flow. Discharge from the site does not exceed the existing situation, and exceedance flows are directed away from buildings.

Urban greening factor build-up

Surface	Area	Factor	Contribution
Amenity grassland (gardens / lawn)	280 m2	0.4	112
Flower-rich / shrub planting	60 m2	0.7	42
New standard trees (2 x 10 m2 canopy)	20 m2	0.6	12
Permeable paving	60 m2	0.1	6
Sealed surfaces (buildings / hardstanding)	220 m2	0	0
Urban greening factor (site area 620 m2)			0.28 vs target 0.4

Figure 3 - Urban greening factor - surface build-up and score

Materials, embodied carbon and circular economy

Responsible & efficient material use

Materials are selected for responsible sourcing and low environmental impact: all timber is FSC or PEFC certified; main construction products carry responsible-sourcing certification (BES 6001 or equivalent); high-recycled-content options are selected where they meet the specification, targeting at least 20% recycled or secondary aggregate content by value; and materials are sourced regionally where available to reduce transport impacts. Finishes are specified with low volatile organic compound content for occupant health.

Embodied carbon

Embodied carbon is minimised through the design: an efficient structural layout, lean specification and the material choices above. Benchmarked against published targets (upfront carbon A1-A5), the detailed design is committed to better the RIBA 2030 Climate Challenge target of 625 kgCO2e/m² for this building type (typical current practice is around 850 kgCO2e/m²).

Circular economy & design for longevity

Circular economy principles are applied across the building's layers: a durable, adaptable structure with regular grids and non-loadbearing partitions so internal layouts can change; services distributed for access and replacement; materials and connections chosen so components can be removed and reused rather than demolished; and standard sizes to reduce offcut waste. Any demolition is preceded by an audit so materials are recovered at their highest value.

Embodied carbon benchmarks applied to the design

Benchmark	Value
Typical current practice (upfront carbon A1-A5)	850 kgCO2e/m2
GLA WLC benchmark	<850 kgCO2e/m2
RIBA 2030 Climate Challenge target (committed design target)	<625 kgCO2e/m2
LETI 2030 aspiration	300 kgCO2e/m2

Construction and operational waste

Construction waste management

Construction waste is managed through a Site Waste Management Plan; the benchmark arising for a development of this size is approximately 32 m³ (20 tonnes), and the plan sets a target of no more than that with at least 90% diverted from landfill through segregation on site, take-back schemes and licensed recycling contractors - bettering the BREEAM exemplary diversion benchmark. Cut-and-fill and packaging returns are managed to reduce arisings at source.

Operational waste & recycling

Each dwelling has internal segregation space for recyclable and residual waste and food waste caddies, with external stores sized to Guildford's standards, on level access routes to the collection point. Storage capacity meets the collection authority's requirements so recycling rates are supported rather than constrained by the design.

Waste commitments

Item	Commitment
Benchmark construction waste for 170 m2 GIA	32 m3 (20 tonnes)
Diversion from landfill (Site Waste Management Plan target)	90% (betters the BREEAM exemplary 75% benchmark)
Operational waste	Segregated recycling, food and residual storage to Guildford's standards

Sustainable transport

Walking, cycling & public transport

The development supports sustainable travel: secure, covered cycle parking is provided for every dwelling to the local standard, with step-free access to the street; walking routes to the site entrance are direct and lit, and the location gives access to local services and public transport, reducing car dependence.

Electric vehicle charging

Electric vehicle charging is provided in accordance with Approved Document S: an active charge point serves every parking space/dwelling with dedicated parking. Charging infrastructure is metered and located for safe, convenient use.

Health, wellbeing and pollution

Daylight, comfort & internal environment

Habitable rooms are dual-aspect wherever the layouts allow, glazing is sized for good daylight (target average daylight factors of 1.5% for living rooms and 1% for bedrooms), and the dwellings meet the Nationally Described Space Standard. The ventilation strategy provides continuous fresh air, and low-VOC finishes protect indoor air quality. Together these support occupant comfort, health and productivity.

Accessibility & inclusive design

Dwellings are designed to Part M4(2) (accessible and adaptable) standards: step-free approach and entrance, accessible WC provision, and layouts that can adapt to occupants' changing needs over their lifetime.

Air quality, noise & light

Ground conditions: as previously developed land, a phased land-quality assessment (desk study, with intrusive investigation where the desk study indicates) is completed with any remediation verified before occupation, secured by condition - protecting future occupants and the wider environment. The site does not lie within an Air Quality Management Area, and the heating strategy adds no combustion emissions. Construction noise and dust are managed through working-hours limits and good-practice controls. External lighting is designed to avoid light spill and glare (warm colour temperature, downward-directed, curfew dimming), protecting neighbours and wildlife alike.

Certification and conclusion

Conclusion - policy compliance

The development delivers measurable sustainability performance across every topic in this statement: fossil-fuel-free heating; roof-mounted solar PV; 101.3 l/p/d water efficiency; an urban greening factor

of 0.28; 90% construction waste diversion; and the adaptation, transport and wellbeing measures set out above. The development accords with the National Planning Policy Framework and the sustainability policies of Guildford. On the basis of the commitments secured through this statement, there is no sustainability reason for planning permission to be withheld.

Summary of commitments

The measures below are commitments of this statement, classified by topic so the local planning authority can secure them by condition where appropriate.

Topic	Committed measure
Energy	Fossil-fuel-free heating (air source heat pumps (all-electric)); enhanced fabric; roof-mounted solar PV
Water	Fittings schedule delivering 101.3 l/p/d (110 l/p/d standard); water butts to gardens
Ecology	Biodiversity enhancement: integrated bird/bat features, hedgehog-permeable boundaries, native planting
Greening	Landscape delivering an urban greening factor of 0.28; 2 new trees
Drainage	60 m2 permeable paving; surface water managed through the drainage hierarchy with no increase in runoff
Materials	FSC/PEFC timber; BES 6001 responsible sourcing; >=20% recycled content by value; low-VOC finishes
Waste	Site Waste Management Plan with 90% landfill diversion; segregated operational recycling storage
Transport	Secure cycle parking to standard; EV charging per Approved Document S
Adaptation	Cooling hierarchy + Approved Document O compliance; UKCP18-informed resilience measures

Data sources and basis of assessment

Dataset / service	Publisher	Access
Flood Map for Planning - Flood Zones 2 & 3	Environment Agency	environment.data.gov.uk (WMS)
Priority Habitats Inventory, Ancient Woodland, SSSI, LNR/NNR	Natural England	environment.data.gov.uk (WMS)
Green Belt, Conservation Areas, Central Activities Zone	MHCLG planning.data.gov.uk	planning.data.gov.uk
Air Quality Management Area boundaries	Defra / Ricardo (UK-AIR)	uk-air.defra.gov.uk/aqma
Postcode geocoding & local authority lookup	postcodes.io (ONS/OS open data)	api.postcodes.io
Address geocoding	OpenStreetMap Nominatim	nominatim.openstreetmap.org
Base mapping	OpenStreetMap contributors	openstreetmap.org

All datasets were accessed on 03 June 2025 under the Open Government Licence v3.0 / ODbL. Contains public sector information licensed under the Open Government Licence (Environment Agency, Natural England, MHCLG, Defra); base mapping (c) OpenStreetMap contributors.

Guidance applied

- National Planning Policy Framework (December 2024), chapters 14 and 15
- HM Government Approved Documents G (water efficiency), L (2021), O (overheating) and S (EV charging)
- Environment Act 2021 and the Biodiversity Net Gain statutory framework (statutory metric and small sites metric)
- Greater London Authority (2023) Urban Greening Factor LPG; (2022) Whole Life-Cycle Carbon Assessments LPG; Circular Economy Statements LPG - applied to London sites
- BRE (2018) BREEAM UK New Construction technical manual
- The Water Efficiency Calculator for New Dwellings (2009 methodology, fittings approach)
- CIBSE TM59 (2017) / TM52 (2013) overheating assessment methodologies; UKCP18 climate projections
- LETI (2020) Climate Emergency Design Guide; RIBA (2021) 2030 Climate Challenge (v2); RICS (2017) Whole Life Carbon Assessment

Basis of assessment

- This is a professional sustainability statement prepared for planning purposes, structured around the topics the National Planning Policy Framework and development plan policies engage, with each quantified commitment calculated by the stated method.
- Water consumption is calculated with the fittings approach of the Water Efficiency Calculator methodology; the urban greening factor uses the London Plan Policy G5 surface factors; the biodiversity net gain position uses the statutory metric framework (area x distinctiveness x condition) on the habitat classifications stated, with the detailed metric completed by an ecologist where the statutory condition applies.
- Site-specific environmental context derives from the national open datasets listed above (Environment Agency flood map, Natural England designations, national planning constraint datasets, UK-AIR boundaries), current at the date of access and specific to this site.
- The specifications and landscape quantities stated in this report are commitments of the application and are written so the local planning authority can secure them by condition.
- The statement addresses planning sustainability matters; detailed flood risk, ecology survey, transport and energy compliance documents accompany the application where required and are cross-referred rather than duplicated.

Closure

This Sustainability Statement demonstrates that the proposed development delivers measurable performance across energy and carbon, water, materials, waste, biodiversity, urban greening, climate change adaptation, transport and wellbeing. The development accords with the National Planning

Policy Framework and the development plan. On the basis of the commitments secured through this statement, there is no sustainability reason for planning permission to be withheld.

Prepared by
Fortress Associates
FA-SUS-0108 | 3 June 2020