

EBBSFLEET SUSTAINABILITY ASSESSMENT

// Schools +
Community
Buildings



Ebbsfleet
DEVELOPMENT CORPORATION



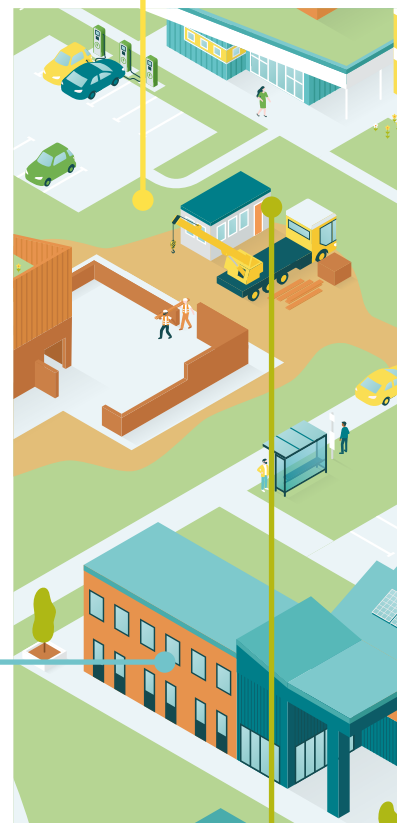
Schools & Community

One Page Design Guidance

Carbon & Energy

For the delivery of Net Zero Carbon School and community buildings applicants should:

- **Capitalise on energy efficient and low carbon heating sources** that do not use fossil fuels
- **Utilise renewable energy sources** such as solar panels PV cells to ensure a low operational carbon demand. Large planes of flat/shallow pitched roofs offer plentiful opportunities for Solar PV capture and on site energy offsetting, as well as large playing field amenity space provision for the potential to use Ground source heat pumps
- **Use low embodied carbon** materials that are highly sustainable, renewable or made of high recycled content such as timber, GGBS concrete and recycled steel
- Make reference to how materials are being manufactured, procured, transported and constructed onsite to reduce Upfront Carbon figures. Questions should be asked about what are the big ticket carbon saving materials being used, their specifications & strategies for future repair, maintenance & replacement to reduce in-use embodied carbon
- **Design simple building forms and thermal fabric:** Applicants should provide Form Factor calculations with thermal lines on plan & section drawings
- **Consider windows locations and sizes:** based on facade orientation, natural light optimisation and inclusion of shading devices, where appropriate
- **Be naturally ventilated buildings and** dual aspect as a priority, with MVHR where appropriate



Water

The primary focus is to construct buildings to be climate resilience, and minimise potable water use to reduce pressure on water demand. School and community building schemes should demonstrate:

- Reduced appliance and fitting flow rates to minimise water use and use of Waste Water Heat Recovery appliances
- Evidence of blue / green infrastructure and Sustainable Urban Drainage Systems that capture stormwater and mitigate flooding
- Evidence of permeable hard landscape surfaces
- Provision of rainwater collection such as water butts and Grey water recycling measures
- **AECB Water Standard Volumes 1 + 2 provide further guidance for non-domestic buildings**

Waste & Materials

The primary focus is to construct buildings to be climate resilience, and minimise potable water use to reduce pressure on water demand. School and community building schemes should demonstrate:

- Appropriately sized, easily accessible storage provision for recycling and waste streams
- Specify reused or recycled materials in dwellings and buildings
- Demonstrate design for deconstruction or adaptation and Offsite Construction to align with school term/calendar dis



Health & Wellbeing

In addition to supporting sustainability goals, school and community building designs promote the health and wellbeing of the occupants, staff and children. The primary focus is to develop these facilities within healthy neighbourhoods with active travel and low carbon and pollution infrastructure. Such developments should incorporate:

Transport

- **EDC Sustainable Travel Strategy** requirements and measures
- Mobility hubs within 400m of front doors to provide building users with an interchange for sustainable modes of transportation to take them further afield. A mobility hub should provide connection between at least two types of sustainable transportation such as bus-to-train or bike-to-bus
- Car Clubs to promote reduced car quantities and pollution
- EV charging points to individual buildings and car hub/parks locations as specified
- A clear public realm design hierarchy of pedestrian, cycle and public transport routes
- Secure Bicycle storage facilities

Building Quality

- Align design proposals with the Design for Ebbsflet Guidance and **Community Buildings Design Criteria**
- Maximise natural daylight and dual aspect designs for natural ventilation
- Demonstrate design and specification of healthy materials with low emission of Volatile Organic Compounds via EPD datasheets
- Optimise dwelling orientation, density, massing and room locations to maximise natural daylight and limit overshadowing. Allow a distance of 1/1.5 times the building height between buildings
- Demonstrate summer solar gain and overheating mitigation with shading devices and projecting balcony locations
- Specify robust materials that weather & wear well



als

Construct schemes with circular
 site sustainable and healthy
 for occupants to minimise
 schemes should evidence:

asily accessible and secure
 cycled food waste and general

led and responsibly sourced
 d landscape treatment

for material efficiency,
 stability of homes with DfMA
 / MMC methods to minimise
 ruptions and on-site pollution



Natural Environment

The primary focus is to construct schools and community buildings and their surroundings with green infrastructure that contributes to climate resilience and provides opportunities to enable occupants to connect with nature and make sustainable lifestyle choices. Applicants should provide evidence of:

- Diversity of native and drought resistance species of planting
- Creation and provision of habitats in the landscape
- Soft landscaping and Tree Canopy Cover strategies in alignment with **EDC'S Public Realm Strategy**
- Connect new public realm to existing
- Provision of food growing facilities
- Adoption of minimum 10% Biodiversity Net Gain and target 0.4 or greater Urban Greening Factor opportunities



Community / Schools

Carbon and Energy

Sustainability Performance Assessment

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	Performance measure	Will not deliver Net-Zero Ebbsfleet	Towards Net-Zero	Net-zero best practice
Whole Life Carbon	Whole life carbon CO2 emission from both embodied and operational stages- (modules A-C, excluding B6- B7) CO2 e / m2 (GIA)	>970 kgCO2 e/m2 (RIBA 2030 outcomes)	≤970 kgCO2 e/m2 (RIBA 2030 outcomes)	≤400 kgCO2 e/m2 (LETI targets)
	Upfront carbon Upfront carbon (A1-A5) kg CO2 e / m2 (GIA)	>600 kgCO2 e/m2 (LETI targets / RIBA 2030 outcomes)	≤600 kgCO2 e/m2 (LETI targets / RIBA 2030 outcomes)	≤300 kgCO2 e/m2 (LETI targets / RIBA 2030 outcomes)
Energy Efficiency	Energy Use Intensity (EUI) Annual measure of the total energy consumed in a building. kWh / m2 / y (GIA)	>75 kWh/m2/y (RIBA 2030 outcomes)	≤75 kWh/m2/y (RIBA 2030 outcomes)	≤55 kWh/m2/y (LETI targets / RIBA 2030 outcomes)
Passive Design	Operational Space heating Space heating demand kWh / m2	>40 kWh/m2	≤40 kWh/m2 (AECB targets)	≤15 kWh/m2 (LETI targets)
Renewables	Renewables % of energy demand supplied by onsite renewables	<50% annual energy for at least 2 floors generated on site	≥50% annual energy for at least 2 floors generated on site	100% annual energy for at least 2 floors generated on site
Energy Management	Energy management Metering (% building with a comprehensive metering strategy) Performance gap (Soft Landings and Post Occupancy Evaluation)	Not included (Provide justification)	Not Applicable	100% inc. sub-metering approach for occupiers





Community / Schools

Waste & Materials

Sustainability Performance Assessment

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Circular Economy

Performance measure	Will not deliver Net-Zero Ebbsfleet	Towards Net-Zero	Net-zero best practice
Circular sourcing % building materials by volume that are reused, recycled, secondary and renewable in construction See glossary for definition.	<30% Provide comprehensive justification	≥30% Provide Circular Economy Statement as a written summary.	≥50% Provide Circular Economy statement and Table of results.*
Responsible sourcing % construction materials by volume that are responsibly sourced	<75% of key materials are responsibly sourced 	≥75% of key materials are responsibly sourced 	100% of key materials are responsibly sourced. Provide Circular Economy statement
End of life reusability % building materials/ elements reusable at end of life by volume/tonnage	Not designed for reuse and/or disassembly 	>50% of "Space" layer and 50% whole of building materials are designed for disassembly and reuse 	'Moving Towards Net Zero' target + Material passports introduced sitewide
Construction waste Waste to landfill and % incinerated volume/tonnage	Waste to landfill and incineration 	*Zero non-hazardous waste to landfill and ≤10% incinerated. 	*Zero non-hazardous waste to landfill and 0% incinerated.
Offsite Manufactured, MMC, Pre-manufactured % Pre Manufactured volume/tonnage	<10% PMV 	≥10 -50% PMV 	> 50% PMV

* Referencing GLA CE Template v1.1 May 2023

* Referencing GLA CE Template v1.1 May 2023



Community / Schools

Health & Wellbeing

Sustainability Performance Assessment

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	Performance measure	Will note deliver a healthy Ebbsfleet	Towards a healthy Ebbsfleet	Healthy Ebbsfleet
Sustainable Travel	Cycle parking & facilities No. of secure (enclosed), high quality cycle parking spaces & facilities per person	Does not meet Ebbsfleet Sustainable Travel Strategy requirements	Not Applicable	Meet's Ebbsfleet Sustainable Travel Strategy requirements
	Car club Distance from car club and ratio of car/number of units	1 Car club bay or none within 5 minute walk of all main entrances	Not Applicable	2 car club bays or more within 5 minute walk of all main entrances
	Transport connections Distance to public transport stops and Mobility as a Service (MaaS) hubs	Not all main entrances are within 400m of a bus stop	Not Applicable	All main entrances within 400m of a mobility hubs (car share, bike share, bike hubs, bus stops)
Healthy Homes and Buildings	Healthy materials % surface area of materials that restrict VOC emissions	<90% flooring, <75% insulation, ceiling wall panels	≥90% flooring, ≥75% insulation, ceiling wall panels from WELL	≥95% flooring, ≥85% insulation, ceiling wall panels
	External daylight and sunlight Compliance with BRE 209 standard for external daylight and sunlight	< 2 hours direct sunlight on the ground to 50% of open space on 21st March	≥ 2 hours direct sunlight on the ground to 50% of open space on 21st March	≥ 4 hours direct sunlight on the ground to 50% of open spaces on 21st March
	Internal daylighting Compliance with minimum daylight standards	BS EN 17037 daylight standard (Minimum 300 lx of natural light over 50% of the space)	Meets all WELL light feature pre-conditions	WELL light feature pre-conditions + daylight simulations undertaken
Overheating	Overheating All buildings to pass overheating criteria	Part O requirements (Overheating Calculations: Simplified Method)	≥80% pass 2050 weather scenario (Dynamic Thermal Modelling: CIBSE TM59 Calculations)	100% pass 2050 weather scenario (Dynamic Thermal Modelling: CIBSE TM59 Calculations)





Community / Schools

Water

Sustainability Performance Assessment

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	Performance measure	Non water-resilient	Towards water-resilience	Water-resilient
Sustainable Drainage	SuDs Sustainable Urban Drainage Systems See glossary for definition.	No SuDs measures provided Provide justification	SuDs measures provided	SuDs measures include 100% above ground attenuation
	Surface water run off Runoff volume	No control measures provided Provide justification	Control runoff to greenfield volume	Control runoff to greenfield volume and no net increase in volume from existing state
Water Use	Potable Water Use Water usage per person / BREEAM criteria	1.5 - 4.5m³/pupil/y (RIBA 2030 outcomes)	≤1.5m³/pupil/y (RIBA 2030 outcomes)	≤0.5m³/pupil/y (RIBA 2030 outcomes)
	Water Collection Water collection or recycling measures	100% provision of water butts	Rainwater harvesting systems	Grey water recycling & harvesting





Community / Schools

Natural Environment

Sustainability Performance Assessment

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	Performance measure	Under-performing	A greener Garden City	Garden City Best Practice
BNG	Biodiversity Net Gain % biodiversity net gain (BNG)	Not Applicable	≥10 BNG	≥20% BNG
Green Infrastructure	Urban Greening Factor Urban Greening Factor	< 0.4 target score	≥ 0.4 target score	Net-zero best practice ≥ 0.5 target score
	Tree Canopy cover % tree canopy cover of amenity and public realm outdoor space	Not aligned with Ebbsfleet Public Realm Strategy: No. Street trees per 50m length	Aligned with Ebbsfleet Public Realm Strategy: No. Street trees per 50m length	Aligned with Ebbsfleet Public Realm Strategy + Tree canopy >20% of the masterplan area
	Green Roof coverage % roofs covered in green roofs. (For Residential Apartment Buildings only)	<5% of roof area	5-20% of roof area	>20% of roof area
	Food Growing Proximity to community growing garden, orchard or allotment.	Community Garden, Allotment or Orchard within 15mins walk of all main entrances	Community Garden, Allotment or Orchard within 5mins walk of all main entrances	Community Garden, Allotment or Orchard provided on site.
	Drought resistance % drought resistant species of trees, shrubs and ornamental planting specification	No Drought resistant planting provided. (Provide justification)	≥80% planting to be drought tolerant	100% planting to be drought tolerant





Community / Schools

Inclusive growth + community development

Performance Assessment

Performance measure	Assessment criteria	Yes	No
Community Engagement	Project has delivered engagement aligned with EDC's guidance on community engagement , and facilitated co-design events early in the design process to up-skill the community on design, and enable them to engage in the co-design of the project.	<input type="checkbox"/>	<input type="checkbox"/>
Community Engagement	Project has utilised a digital engagement platform throughout the design process to provide a portal for all briefing and community engagement activities, and to provide feedback on community proposals and ideas.	<input type="checkbox"/>	<input type="checkbox"/>
Accessibility	Project has included an access consultant to enable best practice accessibility within the project.	<input type="checkbox"/>	<input type="checkbox"/>
Accessibility	For Public Buildings, the project has applied the public building section of the London Legacy Development Corporation's Inclusive Design Standards.	<input type="checkbox"/>	<input type="checkbox"/>
Inclusive Growth and Social Value	Applicants have considered how the project can support the delivery of the Ebbsfleet Inclusive Growth Strategy, and engage with EDC's Inclusive Growth Manager to identify opportunities, and establish commitments during the pre-application process.	<input type="checkbox"/>	<input type="checkbox"/>
Arts and Culture	Design teams has reviewed the Ebbsfleet Public Art Strategy , and integrated the Ebbsfleet public art principles into the project and design process.	<input type="checkbox"/>	<input type="checkbox"/>



Application Assessment Summary

Project Name: _____ Date: _____

Sustainability Themes / Performance Measure	Please select Sustainability Level achieved in each measure		
Carbon & Energy			
Whole life Carbon			
Upfront Carbon			
Energy efficiency : Energy Use Intensity (EUI)			
Passive Design : Space heating			
Renewables			
Energy Management		N/A	
Waste & Materials			
Circular sourcing			
Responsible sourcing			
End of life reusability			
Construction waste			
Offsite Manufactured, MMC, Pre-manufactured			
Health & Wellbeing			
Cycle parking & facilities		N/A	
Car club		N/A	
Transport connections		N/A	
Healthy materials			
External daylight and sunlight			
Internal daylighting			
Overheating			
Water			
Sustainable Urban Drainage Systems (SuDs)			
Surface water run off			
Potable Water use			
Water Collection			
Natural Environment			
Biodiversity Net Gain	N/A		
Urban Greening Factor			
Tree Canopy cover			
Green Roof coverage			
Food growing			
Drought resistance			