Southampton City Council Energy Guidance for New Developments 2021-2025

Adopted Core Strategy Policy CS20 states "All development must be low carbon, with a view to carbon neutrality where appropriate." Developers should demonstrate how their proposal will achieve this through adopting the sequential approach which looks to first minimising energy demand as much as possible. In addition, since the adoption of the Core Strategy, Southampton City Council has declared a climate emergency and has adopted the Green City Charter and Strategy which looks to Carbon Neutrality by 2030. In order to meet both national and local climate change targets all new buildings must operate at net zero carbon by 2030 and all buildings (i.e including existing) must operate at net zero carbon by 2050. Carbon Neutrality is not going to be achieved by 2030 if new developments which are being designed and approved now are not of the highest possible standards.

The Government are allowing us to set energy efficiency targets which go beyond Building Regulations, in The Government's Response to the Future Standards Consultation (Jan 2021, chapter 2) they stated *"We acknowledged the need to clarify Local Planning Authorities' role in setting energy efficiency requirements for new homes that go beyond the minimum standards set through the Building Regulations. The new planning reforms will clarify the longer-term role of local planning authorities in determining local energy efficiency standards. To provide some certainty in the immediate term, we will not amend the Planning and Energy Act 2008, which means that local authorities will retain powers to set local energy efficiency standards for new homes."*

The fabric first approach needs to be pushed, as whilst electricity will become less carbon intensive the focus needs to be on reducing energy demand in the first place as renewable energy capacity is a critical issue (i.e. the UK only has a certain capacity to deliver renewable electricity, so the demand for electricity needs to be reduced as much as possible). Fuel poverty is another important issue why energy demand needs to be reduced rather than just relying on the decarbonisation of the electricity network.

Because of the reasons set out above it is appropriate for new developments to look to meet the CS20 policy requirement of being low carbon, with a view to carbon neutrality and demonstrate a true maximization of energy efficiency measures in the building design. The table below provides an appropriate benchmark for developments to meet this requirement.

This guidance focuses mainly on operational energy, although embodied energy and performance evaluation are important factors which will be included in the emerging local plan. The guidance is based on extensive research by the respected organisations LETI (London Energy Transformation Initiative) and GHA (Good Homes Alliance) – of which SCC is a member. The guidance has also been developed in reference to The Future Homes Standard consultation (the revisions to the Building Regulations remain under consultation and are expected to be introduced in full by 2025).

Minimum energy related design performance requirements to be read in conjunction with https://www.leti.london/cedg

Minimum performance requirements	Development type		Design stage aims, additional considerations and comments
	Small scale/ low rise housing	Medium & large housing (4 or more storeys)	
Heating and hot water generation	Fossil fuel free	Fossil fuel free	(1) Maximise the use of renewable heat generation (2) Check adequacy of local electrical supply capacity
Space heating demand	15 kWh/m².yr	15 kWh/m².yr	(1) Maximum 10 W/m² peak heat loss (including ventilation) (2) Maximum dead leg of 1 litre for hot water pipework
Fabric U-values (W/m2.K)			
Walls	0.13 - 0.15	0.13 - 0.15	
Floor	0.08 - 0.10	0.08 - 0.10	
Roof	0.10 - 0.12	0.10 - 0.12	
Exposed ceilings/ floors	0.13 - 0.18	0.13 - 0.18	
Windows	0.80 (triple glazing)	1.00 (triple glazing)	
Doors	1.00	1.00	
Efficiency measures			
Air tightness	<1 m³/hr.m²@50pa	<1 m³/hr.m²@50pa	

Thermal bridging	0.04 (y-value)	0.04 (y-value)	
G-value of glass	0.6 - 0.5	0.6 - 0.5	
MVHR (required)	90% (efficiency) ≤2m duct length (from unit to external wall)	90% (efficiency) ≤2m duct length (from unit to external wall)	
Window areas guide (% of wall area)			
North	10-15%	10-20%	(1) Balance daylight and overheating risk assessment/ modelling (2) Include external shading - to suit Overheating risk assessment/ modelling (3) Include openable windows and cross ventilation - refer also to Overheating risk assessment/ modelling
East	10-15%	10-15%	
South	20-25%	20-25%	
West	10-15%	10-15%	
Form factor	1.7 - 2.5	<0.8 - 1.5	(1) Form factor is the ratio of external surface area (i.e. the parts of the building exposed to outdoor conditions) to the internal floor area
Renewables	Maximise renewables so that 100% of annual energy requirement is generated on-site	Maximise renewables so that 70% of the roof favourable for solar is covered	(1) On-site renewable electrical generation is to bring all residual regulated emissions to zero (2) Provision of solar PV to all remaining available and suitable roof spaces to be considered by a design stage option appraisal, feasibility and cost benefit study (3) DNO approvals required
Recommended (optional LETI requirements)			
Energy Use Intensity (EUI)*	35 kWh/m².yr for domestic. For non-domestic buildings a minimum DEC B (40) rating should be achieved and/or an EUI		(1) Energy Use Intensity in GIA, excluding renewable energy contribution

	equal or less than: 70 kWh/m2/yr (NLA), 65 kWh/m2/yr for schools, 55 kWh/m2/yr (GIA) for commercial offices	
Embodied	Reduce embodied carbon by 40% or to <500 kgCO2/m² (area in GIA)	(1) Focus on reducing embodied carbon for the largest uses
Demand response	Refer to LETI guidance https://www.leti.london/cedg	
Data disclosure and metering	Refer to LETI guidance https://www.leti.london/cedg	(1) Data and performance to be detailed in end of project BPE report

* The Energy Use Intensity (EUI) is an annual measure of the total energy consumed in a building. It is a good indicator for building performance as the metric is solely dependent on how the building performs in-use; rather than carbon emissions, which also reflect the carbon intensity of the grid. EUI is a metric that can be estimated at the design stage and very easily monitored in-use as energy bills are based on kWh of energy used by the building. This metric can be used to compare buildings of a similar type, to understand how well the building performs in-use. It includes all of the energy consumed in the building, such as regulated energy (heating, hot water, cooling, ventilation, and lighting) and unregulated energy (plug loads and equipment e.g. kitchen white goods, ICT/AV equipment). It does not include charging of electric vehicles. EUI can be expressed in GIA (Gross Internal Area) or NLA (Net Lettable Area). In this document the EUIs are expressed in GIA unless specified. EUI should replace carbon emission reductions as the primary metric used in policy, regulations, and design decisions.

Comments

If you have any comments on this document, please email greencity@southampton.gov.uk

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Design for and achieve the **energy use intensity** (EUI) targets:

- 35 kWh/m².yr — Residential
- 55 kWh/m².yr — Offices
- 65 kWh/m².yr — Schools

2

Design for and achieve the **space heating demand** target:

- 15 kWh/m².yr — All building types

3

Maximise **renewable energy generation** on-site:

Small scale resi: Generate 100% of annual energy requirement on-site

Medium and large scale resi: Cover 70% of roof area

Offices: Generate the annual energy requirement for at least two floors of the development on-site

Schools: Cover 70% of the roof area