

Hastings Council

Net Zero Policy – Technical Evidence Base

August 2026

10863-IRB-XX-XX-T-OS-51001

Issue	Description	Date (DD.MM.YY)	Prepared By	Signed Off
01	First Draft	03.07.2026	ZK	YM
02	Final Issue	14.08.2026	ZK	YM/SE

Project Office

Introba Consulting Ltd
150 Holborn
London
EC1N 2NS
+44(0) 20 3697 9300

Project Contact:

Yara Machnouk
Yara.Machnouk@introba.com

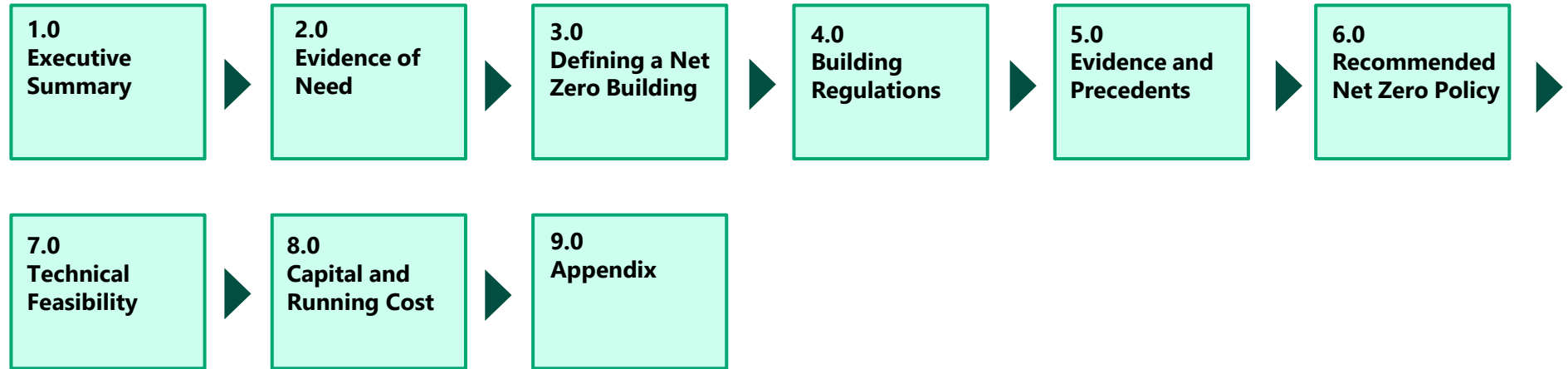
Zeina Krayim
Zeina.krayim@introba.com

Disclaimer

The information contained in this report may contain confidential or legally privileged information. It has been prepared for the sole benefit of our client and can only be relied upon only for its intended use. Introba Consulting Ltd do not confer or purport to confer on any third party, any benefit or any right to rely upon or use any part of this report. Copyright of this document remains with. Introba Consulting Ltd
©Introba 2026
www.introba.com

V2.0

Contents



01 Executive Summary

Executive Summary

Hastings Borough Council commissioned Introba to develop an evidence base to assess the technical feasibility and financial implications of delivering net zero carbon buildings across the borough. The study considers the impact of enhanced building standards for developers, building owners, occupiers and planning authorities and is intended to support a consistent and robust approach to emerging planning policy across Hastings.

This report presents the technical and economic evidence underpinning recommended Net Zero policy requirements for new developments in Hastings. Detailed analysis has been undertaken for five residential typologies: terrace house, detached house, semi-detached house, block of flats (mid-rise), block of flats (high-rise) as well as two non-domestic typologies: office, and light industrial buildings. To establish a robust technical evidence base, predictive energy modelling was undertaken using Passive House Planning Package (PHPP) for residential typologies and CIBSE TM54 for non-domestic typologies. The modelling informed the development and assessment of policy options and performance standards, aligned with net zero operational energy objectives.

The study recommends the adoption of an overarching 'Net Zero Carbon Buildings in operation' policy for both new and existing buildings. The proposed policy is supported by detailed technical and financial evidence and setting standards relating to operational energy demand, space heating performance, energy efficiency, building services, fuel/energy sources, and on-site renewable energy generation. The Policy also promotes the retention and retrofit of existing properties where feasible, recognising the importance of reducing whole-life carbon emissions associated with demolition and redevelopment.

The recommended approach is aligned with local and national climate objectives and provides a clear pathway for reducing operational carbon emissions from the built environment, supporting Hastings Borough Council's wider climate commitments and long-term net zero ambitions.

Capital and operational cost assessments of the building typologies and specifications required to meet the recommended policy standards were undertaken by Currie & Brown. The results of this analysis, including the implications for development viability and building operating costs, are presented in Section 8.

All
developments



Requirement 1.1 **Fossil fuel free**

Fossil fuels, such as oil and natural gas shall not be used to provide space heating, hot water or used for cooking.



Requirement 1.2 **Space heating demand**

*Meeting space heating demand limits for residential and non-residential developments.
Demonstrated using predictive energy modelling.*



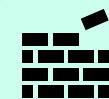
Requirement 1.3 **Energy use intensity (EUI)**

*Meeting energy use intensity (EUI) limits for residential and non-residential developments.
Demonstrated using predictive energy modelling.*



Requirement 1.4 **On-site renewable energy generation**

100% of the annual energy consumption required by buildings shall be generated using on-site renewables, for example through solar PV.



Requirement 1.5 **Lean Building Design**

Promoting lean building design by creating buildings that are efficient in material use, form and design



Requirement 1.6 **Embodied carbon**

Reporting whole life carbon

New Buildings

Existing
Buildings



Requirement 2.1 **Retrofit first**

Presumption against demolition and in favour of the re-use of existing buildings

Non-Technical Summary

Hastings Borough Council commissioned this study to understand how new and existing buildings across the borough can support the transition to net zero carbon, while remaining practical to deliver and affordable to occupy. The work demonstrates that new buildings can be designed to use significantly less energy, provide comfortable and healthy places to live and work, and reduce energy bills for residents and occupiers.

Better buildings that cost less to run

A key finding of the study is that improving the energy performance of new homes can substantially reduce the amount of energy needed for heating. This includes better form factors, insulation, improved windows, reduced heat loss through the building fabric, good levels of airtightness and efficient building services. Across the five types of home assessed, the proposed standards reduce space heating demand by approximately 65–75% compared with the baseline buildings. This means homes that retain heat more effectively and require much less energy to keep warm. In addition to reducing carbon emissions, this translates directly into lower running costs for residents. The analysis indicates estimated annual energy cost savings of between approximately £109 and £364 per home, depending on the type of property.

Understanding the cost of higher standards

Independent capital cost analysis has been undertaken by Currie & Brown for the different building types and the measures required to meet the recommended standards. For the residential typologies assessed, the estimated additional capital cost is approximately 2.3% to 4.8% compared with the baseline specification. For the non-domestic buildings assessed, the estimated additional capital cost is approximately 1.0% for offices and 2.3% for light industrial buildings.

A practical route towards net zero

Overall, the evidence demonstrates that Hastings can require buildings that are more energy efficient, cheaper to run and better prepared for a net zero future.

The recommended policy has been informed by detailed energy modelling and independent cost assessment. This means the proposed standards are based on an understanding of both the performance that buildings can achieve and the financial implications of achieving it.

Domestic	Mid-Rise Block of Flats	High-Rise Block of Flats	Terrace Block	Semi-Detached	Detached House
Space Heating Demand (kWh/m ² /year)	11.5	8.3	13.3	14.8	19.3
Energy Use Intensity (kWh/m ² /year)	29.1	27.6	34.2	33.8	32
Capital Cost Uplift (%)	3.0%	2.3%	4.2%	4.4%	4.8%
Running Cost Saving (£/year)	198	109	172	203	364

Figure 1.2: Domestic net zero results summary for new buildings

Non-Domestic	Office	Industrial Building
Space Heating Demand (kWh/m ² /year)	8.4	10.6
Energy Use Intensity (kWh/m ² /year)	55.7	33.6
Capital Cost Uplift (%)	1.0%	2.3%

Figure 1.3: Non-domestic net zero results summary for new buildings

Disclaimers

Energy modelling

The energy modelling demonstrates that the assessed typologies meet the recommended Net Zero policy requirements. The specifications presented are indicative routes to compliance and do not guarantee achievement of the energy use intensity or space heating demand limits, as performance will also depend on project-specific factors including building form, orientation, glazing, shading and building services. Individual developments will therefore need to demonstrate compliance through project-specific modelling.

Furthermore, the results represent predicted energy performance. Actual energy use may differ due to construction quality, commissioning, occupancy, occupant behaviour, weather and operation of building systems.

Embodied carbon

The recommended embodied carbon requirements have not been modelled or costed as part of this study. The reported capital cost uplifts therefore relate to achieving the operational energy requirements only.

Water efficiency

Water-efficiency measures have not been modelled or costed as part of this study. The measures and associated costs required to achieve the recommended water consumption standard will need to be determined at project level.

Future changes

The evidence reflects the regulatory, technical and cost context at the time of the study. Building Regulations, national policy, energy prices, assessment methodologies and construction costs may change over the Plan period and should be kept under review.

02 Evidence of Need

Hastings Local Plan must comply with national carbon reduction commitments

The climate challenge

There is overwhelming scientific evidence that climate change is occurring and human activities are the primary cause. The [Intergovernmental Panel on Climate Change \(IPCC\) Sixth Assessment Report \(AR6\) Synthesis Report](#), published in 2023, concludes that human influence has unequivocally warmed the atmosphere, ocean and land, resulting in widespread and increasingly severe impacts on people, ecosystems and economies worldwide. The report highlights the urgency of rapid and sustained reductions in greenhouse gas emissions to limit future climate risk.

National commitment

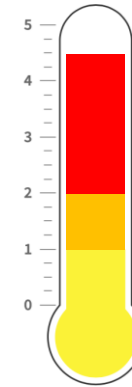
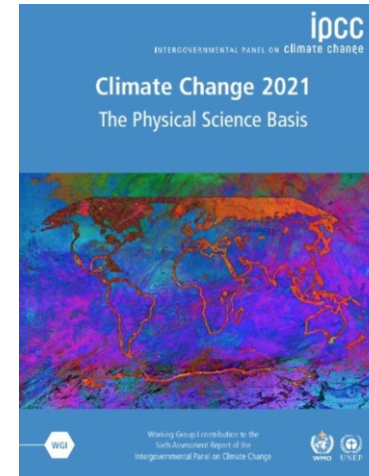
The UK's commitment to tackling climate change is established through the Climate Change Act 2008, as amended in 2019, which places a legal obligation on the UK to achieve Net Zero greenhouse gas emissions by no later than 2050. The Act also requires the Government set legally binding five-year carbon budgets that limit the total amount of greenhouse gases the UK can emit on its pathway to Net Zero.

Carbon budgets are a critical component of the UK's climate framework. Achieving Net Zero is simply not an end goal for 2050; it requires a continual and significant reduction in emissions over time. Success therefore depends as much on the pace and scale of decarbonisation throughout the transition as on the achievement of the final target itself. This approach is supported by the independent Climate Change Committee (CCC), most recently through its advice on the [Seventh Carbon Budget](#), published in 2025.

Achieving net zero carbon

Key measures identified by the CCC include:

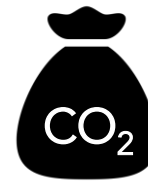
- 100% low carbon electricity by 2050
- **Ultra-efficient new homes and non-domestic buildings**
- **Low carbon heat to all but the most difficult to treat buildings**
- Ambitious programme of retrofit of existing buildings
- Complete electrification of small vehicles
- Large reduction in waste and zero biodegradable waste to landfill
- Significant afforestation and restoration of land, including peatland.



4-5°C the temperature rise we are likely to see if we continue on a **business as usual** path

1.5-2°C The maximum temperature rise above pre-industrial levels the IPCC recommends

1°C The temperature rise already created



380,000 MtCO₂

Estimation of **remaining global carbon budget** (from 2022) for a chance of limiting temperature rises to below 1.5°C. (Source: [Tyndall Centre](#))



9 years

The number of years it would take to **consume our entire global carbon budget** at current global emissions rates for a good chance of limiting temperature rises to below 1.5°C. (Source: [Tyndall Centre](#))

Hasting's Declaration of a Climate Emergency

In 2019, Hastings Borough Council declared a climate emergency and adopted an ambitious aspiration for Hastings to become net zero by 2030, twenty years ahead of the UK Government's legally binding target of achieving net zero emissions by 2050. However, subsequent analysis has shown that achieving net zero across the borough by 2030 was unrealistic given current emissions trajectories and the scale of the challenge. The Council's refreshed Climate Strategy therefore focuses on delivering the maximum achievable reduction in emissions, accelerating climate action wherever possible, and working towards achieving net zero ahead of the national 2050 target, rather than adopting a revised target date that cannot be robustly evidenced.

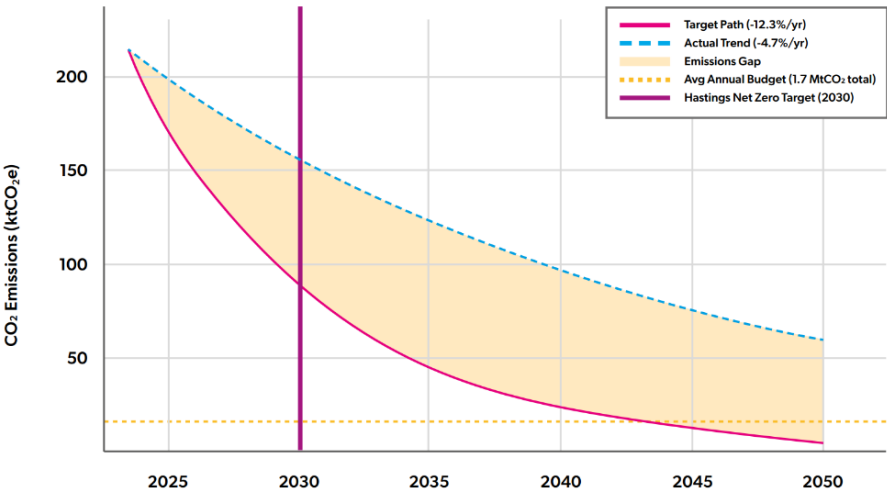
Carbon budgets

Carbon budgets are limits on greenhouse gas emissions that help guide the transition to net zero. For Hastings, this means operating within a steadily decreasing allowance of carbon dioxide equivalent (CO₂e) emissions over time. Based on 2023 emission levels of 0.22 million tonnes of CO₂e (MtCO₂e), current emissions reductions are not occurring quickly enough to remain within the borough's remaining carbon budget. This highlights the need for ambitious but realistic local action to accelerate emissions reductions and support the transition towards net zero as early as possible.

Current planning policy in Hastings needs to be strengthened to align with the remaining carbon budgets

Buildings are the largest sources of carbon emissions in Hastings and improving their energy performance is vital to tackling climate change, cutting costs, and improving health and wellbeing. Planning policy should therefore be strengthened to promote the design and construction of new homes that are climate-resilient, energy efficient, and aligned with net zero ambitions. This should include encouraging the use of the most sustainable materials, low carbon technologies and high energy-efficiency standards available.

Hastings Carbon Budget Trajectory (2023-2050)



This chart shows how Hastings' carbon emissions need to fall between now and 2050 to stay within our fair carbon budget and meet our climate commitments. The gold line represents the rapid reductions required, while the blue line shows our current, much slower rate of decline. The shaded gap highlights the extra emissions we would produce if we continue on our current path. It also shows that reaching our local ambition of net zero by 2030 will require a major acceleration in action.

Figure 2.1: Extract from [Hastings Borough Council Climate Strategy \(2026\)](#): Hastings Carbon Budget Trajectory between 2023-2050

Hastings sector greenhouse gas emissions 2018 (baseline) to 2023 (kt CO₂e)

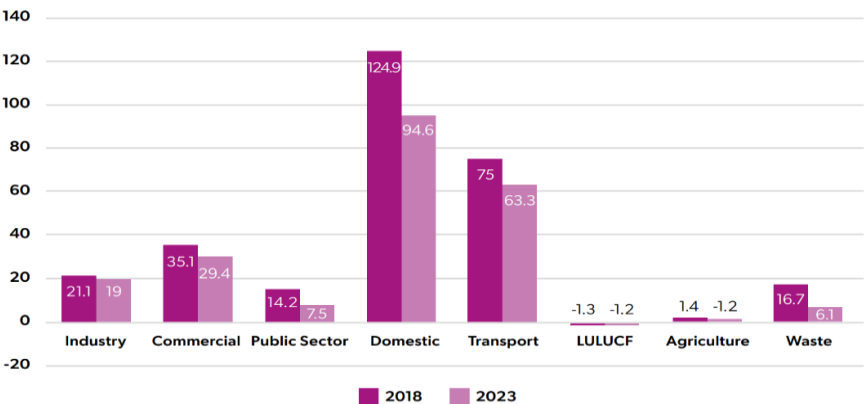


Figure 2.2: Extract from [Hastings Borough Council Climate Strategy \(2026\)](#): Hastings sector greenhouse gas emissions comparison between 2018 and 2023

Why Housing is the Priority for Net Zero in Hastings

Housing is the largest source of emissions in Hastings

According to the latest local-level emission statistics from the Department for Energy Security and Net Zero (DESNZ), published in June 2026, domestic housing is responsible for 95.5 ktCO₂e of greenhouse gas emissions, accounting for 44.7% of all emissions in Hastings, which is more than twice the UK average (around 20%). Reducing emissions from existing and new homes is therefore essential to achieving the Council's Net Zero ambitions.

Fuel poverty

The Government's [latest sub-regional fuel poverty statistics](#) indicate that 10–11% of households in Hastings are living in fuel poverty under the Low Income Low Energy Efficiency (LILEE) measure, equivalent to approximately 4,000–4,500 households. This is above both the England average (9.9%) and the South East average (8.2%), reflecting the borough's combination of relatively high levels of deprivation and an ageing housing stock. Many of Hastings' older homes have poor energy efficiency, resulting in higher heating costs and increased vulnerability to rising energy prices. Improving the energy performance of residential properties through retrofit and low-carbon heating measures has the potential to reduce household energy bills, improve thermal comfort and health outcomes, and help alleviate fuel poverty while simultaneously reducing carbon emissions. Addressing the energy efficiency of the housing stock is therefore a key component of achieving both the Council's climate objectives and wider social and economic priorities.

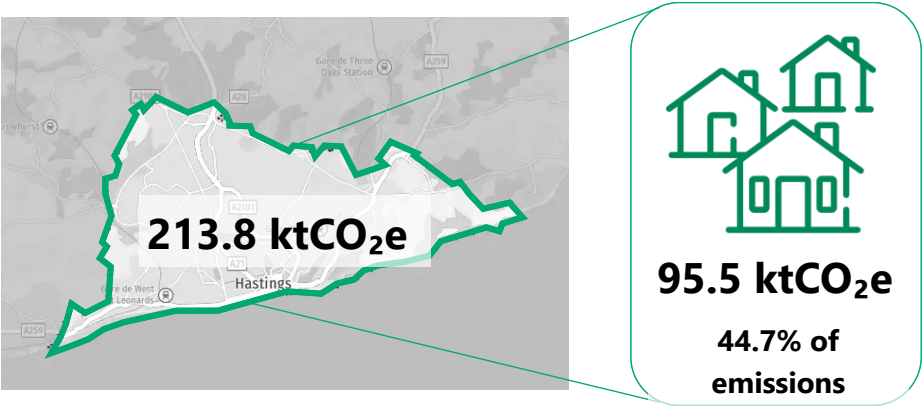


Figure 2.3: Hastings total carbon emissions vs domestic housing emissions

EPC Rating	Properties	% of Stock
A	140	0.30%
B	2,971	6.70%
C	16,528	37.50%
D	17,656	40.10%
E	5,383	12.20%
F	1,069	2.40%
G	313	0.70%

Figure 2.4: Hastings housing stock energy performance statistics

New buildings can be part of the solution

New buildings are currently adding to the problem

Operational carbon emissions associated with new buildings (that meet current building regulations) are still very significant. They are not energy efficient enough, they continue to use fossil fuels for heating and hot water, and likely generate very small amounts of renewable energy, if any. In summary, they keep contributing to the problem of climate change and are not compliant with international, national and local carbon reduction and Net Zero commitments. They keep on using far too much of the local carbon budgets and that is not sustainable.

They create a future retrofit burden

Because current new-build standards are not yet aligned with net-zero, even buildings being constructed today are expected to require [retrofit](#) before 2050 to support the transition to net zero.

The role of new buildings

There are three factors contributing to fuel poverty: energy prices (set by the market/energy suppliers), household income and the dwelling's energy demand. The latter is the only criterion which can be positively influenced through the planning process by including specific policy requirements regarding energy efficiency for new buildings in local plans.

New buildings designed and built, today, with available and affordable skills, techniques and technologies can be compliant with these national climate change commitments, and part of the solution to deliver net zero. They would help reduce energy use in a sustainable way, which would mechanically reduce energy costs. They are referred to as Net Zero Carbon buildings. Their definition and key features are detailed further in the next section of this report.



"New homes should deliver ultra-high levels of energy efficiency as soon as possible and by 2025 at the latest, consistent with a space heat demand of 15-20 kWh/m²/yr. Designing in these features from the start is around one-fifth of the cost of retrofitting to the same quality and standard."

Figure 2.5: Extract from UK Housing: Fit for the Future? Committee on Climate Change, 2019

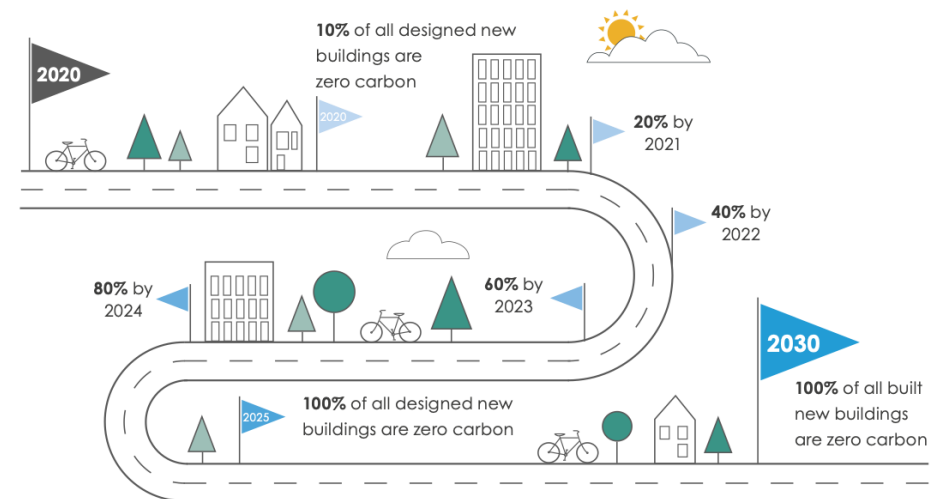


Figure 2.6: [Roadmap to Zero Carbon homes](#) from the LETI Climate Emergency Design Guide: How new buildings can meet UK climate change targets

Water Efficiency and Stress

The South-East faces increasing water stress

The South-East is classified as an area of serious water stress, where climate change, population growth and environmental protection requirements are placing increasing pressure on limited water resources. The National Planning Policy Framework requires planning policies to take account of water scarcity and improve resilience to climate change.

Growing demand

The Environment Agency estimates that the South-East will require an additional 2.5 billion litres of water every day by 2050 unless demand is reduced through improved efficiency and other measures.

How does this apply to Hastings?

Hastings is an area that is both subject to serious water stress (as classified by the EA) and susceptible to sewer flooding in localised areas during periods of heavy rainfall. Increasing the water efficiency of dwellings through measures such as rainwater and greywater capture and recycling through SuDS, and reducing consumption through other measures to limit the amount used allows for a reduction of impact on local water demand and increases available sewer capacity during these periods of heavy rainfall.

Why a water consumption target is needed

A local water efficiency target will ensure that new development contributes to the long-term sustainable management of water resources. By reducing household water consumption, the policy will help address regional water scarcity, reduce pressure on water supply and wastewater infrastructure, support climate resilience, and align development with national planning policy and Southern Water's long-term water resource strategy.

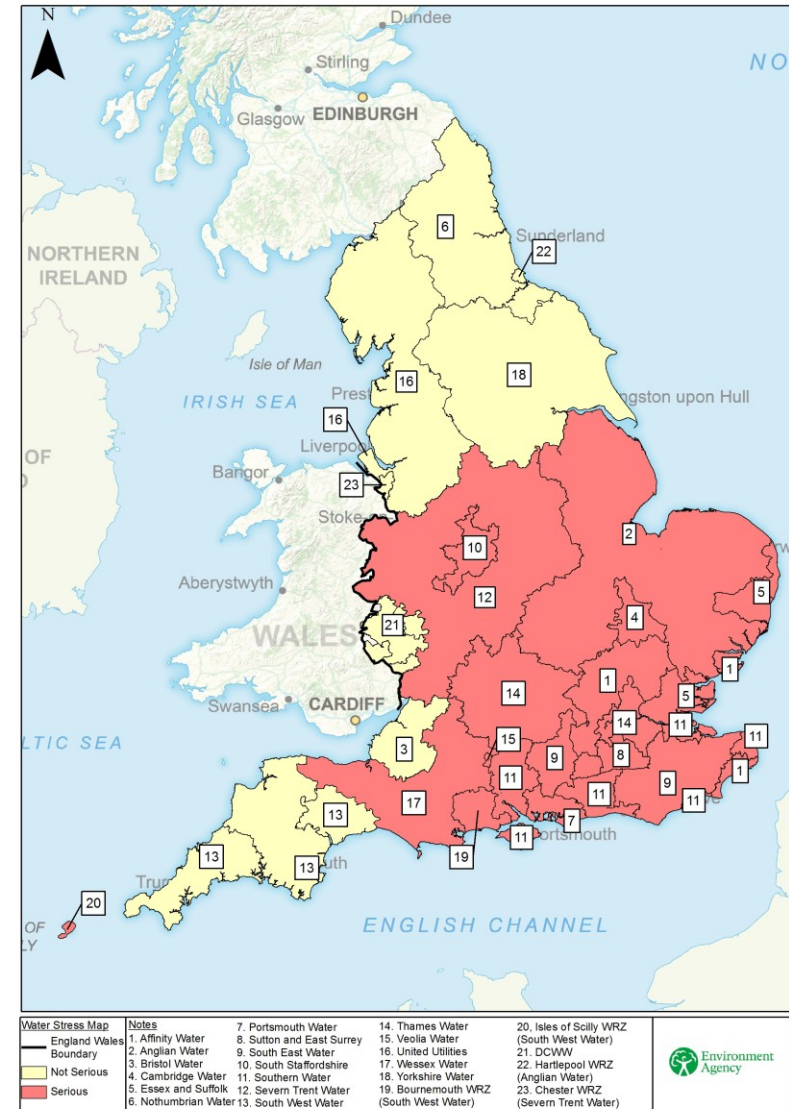


Figure 2.7: Map showing results of water stress classification according to the [2021 Environment Agency final classification](#).

Water Efficiency and Stress – What Others are Doing

Figure 2.8 provides a comparison table of residential water consumption requirements across neighbouring and relevant local authorities. It demonstrates a clear direction of travel towards increasingly ambitious water efficiency standards for new development. While the current optional Building Regulations Part G standard is 110 litres/person/day, a number of authorities are seeking to go further. The Greater London Authority has an adopted requirement of 105 litres/person/day for new residential developments, Eastbourne is proposing the same level through its emerging Local Plan, and Lewes is encouraging new development to achieve 90 litres/person/day, where this can be demonstrated to be feasible.

Southern Water consultation

Southern Water is working towards an average household consumption of 100 litres per person per day by 2040 and encourages new developments to meet or exceed this standard through water-efficient design. Its more recent [Draft Drought Plan 2027 consultation](#) highlights the potential severity of these pressures, identifying personal consumption of 50–80 litres/person/day during severe drought conditions as a demand-management measure ahead of emergency restrictions. These drought figures are not proposed standards for new development, but demonstrate the importance of designing new homes to be resilient to a future in which water availability may become increasingly constrained.

Hastings water efficiency requirement

Against this context, a Hastings requirement of 100 litres/person/day would represent an ambitious but evidence-led step beyond current minimum standards. It would align with Southern Water's longer-term demand reduction ambitions and the direction of emerging national standards, while remaining within the range of performance already being considered through planning policy elsewhere. Designing water efficiency into new homes from the outset can reduce pressure on local water supplies, lower household water consumption and associated energy costs, and improve the long-term resilience of new development.

Local authority / area	Residential water consumption requirement	Status / notes
Lewes District Council	90 L/person/day encouraged; 110 L/person/day maximum	Draft Policy W3 encourages 90 L/person/day, with evidence required where this cannot be achieved; in those circumstances the development must achieve ≤110 L/person/day. The adopted plan currently requires ≤110 L/person/day.
Eastbourne Borough Council	105 L/person/day	The 2026 Draft Local Plan Policy CR6 requires all new residential development to achieve ≤105 L/person/day. It also requires consideration of rainwater and greywater reuse.
Ashford Borough Council	110 L/person/day	Local Plan monitoring identifies 110 L/person/day as the residential water-efficiency requirement.
Folkestone & Hythe District Council	110 L/person/day	Policy SS8 requires new dwellings to achieve a maximum of 110 L/person/day and says proposals should maximise water efficiency/reuse and seek to significantly exceed this standard.
Greater London Authority – London Plan 2021	105 L/person/day	Adopted Policy SI 5. Residential development must achieve mains water consumption of 105 L/person/day or less. The policy also promotes smart metering, water saving and recycling.

Figure 2.8: Summary table of residential water consumption requirements across other councils local to Hastings.

125 L/p/d	→	Current Building Regulations standard
110 L/p/d	→	Current optional Part G standard
105 L/p/d	→	Government's proposed future national standard
100 L/p/d	→	Proposed future optional standard and Southern Water Target 100 ambition
80 L/p/d	→	Southern Water severe-drought demand-reduction campaign level
50-80 L/p/d	→	Full range Southern Water identifies ahead of emergency drought restrictions



Figure 2.9: Summary of different water consumption requirements

03 Defining a Net Zero Building

Defining a Net Zero Carbon Building in Hastings

A Net Zero Carbon Building in Hastings is defined as:

1 – Fabric First Approach – Space Heating Demand Limit

The building reduces the need for heating by achieving an ultra-low level of space heating demand through good form, orientation and high-performance building fabric.

2- Low Level of Total Energy Use – Energy Use Intensity Limit

The building reduces the amount of energy used by complying with a total energy use limit which account for regulated and unregulated energy.

3 – Fossil Fuel Free

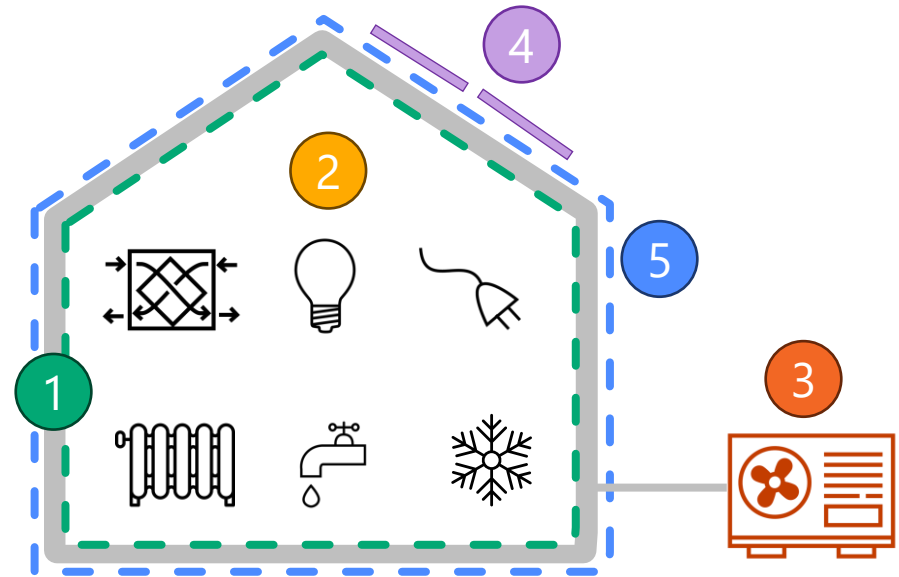
The building must use a low carbon heating system and must not connect to the gas network or, more generally, use fossil fuels on-site.

4 - Renewable Energy Generation Target

The building should seek to generate as much renewable energy as possible, with the effort of seeking a balance between annual energy use and renewable generation.

5- Embodied Carbon

The building should minimise embodied carbon emissions by taking into consideration lean building design and material impact throughout their lifecycle.



6- Retrofit First

In the case of existing buildings, developments prioritise retrofit over re-build, thoroughly exploring the potential for retaining and retrofitting existing buildings.

04 Building Regulations

Building Regulations | Part L 2026 Volume 1: Dwellings

Part L 2026 was published in March 2026 and comes into force for most projects from 24 March 2027 (with later implementation for higher-risk buildings). It supports the Future Homes Standard (FHS) and Future Buildings Standard (FBS), aiming to deliver buildings that are zero-carbon ready through significantly lower operational energy demand, low-carbon heating and on-site renewable electricity generation.

Compliance criteria with Building Regulations Part L 2026

The list below summarises the key compliance criteria set by Part L 2026 for Volumes 1 and 2:

- **Primary energy rate** – Where a dwelling/building is erected, the dwelling/building primary energy rate (DPER)/(BPER) must not exceed the target primary energy rate (TPER). The primary energy use relates to how much energy is required by the new home. It is then converted (using primary energy factors) into primary energy. This is reported as kWh/m² year.
- **Carbon emission rate** – Where a dwelling/building is erected, the dwelling/building emission rate (DER)/(BER) must not exceed the target emission rate (TER).
- **Fabric energy efficiency rate** – Where a dwelling is erected, the dwelling fabric energy efficiency rate (DFEE) must not exceed the target fabric energy efficiency rate (TFEE). This metric only applies to dwellings.
- **Renewable electricity generation** (new requirement) – where a building is erected which is or contains one or more dwellings, a system for on-site renewable electricity generation must be installed. This metric only applies to dwellings.



Part L 2026 – Conservation of fuel and power – [Volume 1](#)/[Volume 2](#)

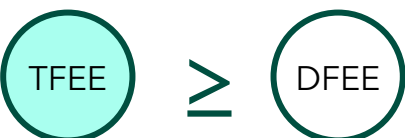
1 – Primary energy rate (kWh/m²)



2 – Carbon emission rate (kgCO₂/m²)



3 – Fabric energy efficiency rate (kWh/m²/year) – Dwellings only



4 – Renewable electricity generation (kWh/m²/year) – Dwellings only

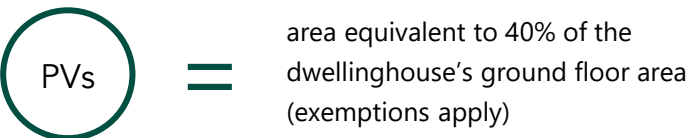


Figure 4.1: Summary of key criteria for buildings compliance with Building Regulations

Review of current local planning policy in Hastings

Hastings Borough Council's extant Local Plan is composed of the Hastings Planning Strategy, adopted in February 2014 and the Development Management Plan, adopted in 2015. These are supplemented by the Waste and Minerals Plan, adopted 2013 (revised 2024) and the Waste and Minerals site plan, adopted 2017. Together these set the framework for growth across the borough to 2028.

The Planning Strategy addresses climate change primarily through its Sustainable Communities policies, including Policy SC1 (Overall Strategy for Managing Change in a Sustainable Way), SC3 (Promoting Sustainable and Green Design), SC4 (Working Towards Zero Carbon Development) and SC5 (District Heating Networks and Combined Heat and Power Systems). These policies apply an energy hierarchy, prioritising energy efficiency ahead of renewable generation, and commit the Council to reducing carbon emissions in line with the Climate Change Act 2008.

The Waste and Minerals Plan sets out the overarching strategy for waste and the minerals across the plan area through four main overarching policies, WMP1, WMP2, WMP3a-e and WMP4. These seek to move waste up the waste hierarchy, so that it is prevented, reused, recycled and recovered ahead of safe disposal as a last resort, and to maintain a steady supply of minerals by favouring secondary and recycled aggregates and sustainable transport, with primary extraction treated as the least preferred option. Policy RM0 (Sustainable Use of Aggregates), introduced through the 2024 revisions, reinforces this by requiring aggregate use to be minimised and recycled and secondary materials to be prioritised. Both strands sit within wider objectives on climate change mitigation and adaptation and on protecting the environment, communities and human health.

While these policies were forward-looking when adopted, they no longer provide an effective basis for delivering net zero development. They were written to work alongside national standards that have since been withdrawn, such as the Code for Sustainable Homes and the original zero carbon homes policy, and they rely on Building Regulations compliance rather than any measurable, in-use energy target. The Strategy also predates the borough's 2019 declaration of a climate emergency. **As a result, the adopted policies neither reflect current climate ambitions nor give applicants and officers the clarity needed to secure genuinely low energy buildings.**

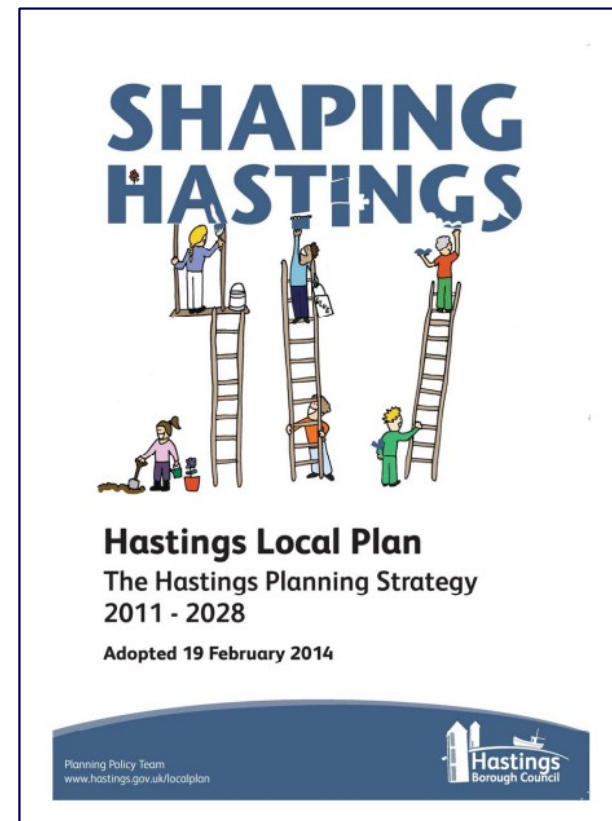


Figure 4.2: Hastings Borough Council's extant Local Plan

Hastings Council Regulation 18 Draft Local Plan – 1/2

In February 2026, Hastings Borough Council published its Draft Local Plan Preferred Options (Regulation 18), which sets out how the borough will grow and change over the next eighteen years and addresses the need for more homes alongside the urgency of tackling climate change.

To support the goal of reducing carbon emissions, the draft proposes Policy SP5, Policy SP6 and Policy SC3, which together provide an overall framework for zero carbon development that mitigates and adapts to the effects of climate change both now and in the future. Of these, Policy SC3 is the most directly relevant to the delivery of low energy buildings. It requires a Sustainability Statement to accompany all proposals and sets numerical limits on space heating demand and total energy consumption, alongside a Passivhaus Classic standard for new homes, BREEAM Excellent for non-residential schemes over 1,000 sqm, upfront embodied carbon caps and a maximum water use of 100 litres per person per day.

The ambition behind Policies SP5, SP6 and SC3 is welcome, and Policy SC3 in particular went well beyond the broad principles of the adopted 2014 policies. It is important, however, to be clear about the status of the standards it contains. At the point of Regulation 18 publication those standards had not been locally set and justified in the sense national policy requires. They had not been derived from a Hastings-specific technical evidence base, nor had they been costed and tested through the Council's Whole Plan Viability Assessment alongside the Plan's other requirements, including affordable housing and infrastructure contributions. They were included in the draft Plan to signal a policy direction and to invite comment on it, on the understanding that the evidence needed to fix and justify the standards would follow.

Policy SC3: Sustainable Design and Construction

All proposals should be supported by a Sustainability Statement demonstrating the scheme has complied with Policy requirements where feasible and viable relating to climate change and which sets out:

- a. How the proposal seeks to avoid, reduce or mitigate being a net contributor to Climate Change in terms of reducing carbon or other greenhouse gas emissions;
- b. How new residential development shall be constructed to 'Passivhaus Classic' standard or other demonstrably equivalent or higher standard;
 - i. All new non-residential development exceeding 1,000 sqm gross internal floor area shall meet BREEAM 'Excellent' standard or other demonstrably equivalent or higher standard.
 - ii. Exceptions to the standards set out above will be considered by the Council where a justification can be made on technical, Policy-based or viability grounds. The minimum standard the Council will accept for non-residential development is BREEAM 'Very Good'.
- c. How the design, layout and orientation for a new development seeks to maximise solar gain and minimise cold wind winter heat loss and how the form of the development increases efficiency to stay warmer in colder conditions and stay cooler in warm conditions to reduce overheating.
- d. How the scheme has incorporated features to mitigate, be resilient to and adapt to future effects of climate change by demonstrating:
 - i. That the maximum energy usage in new residential development for space heating and total energy usage would not exceed the following:
 - 30kwh/m2/annum for space heating
 - 40kwh/m2/annum for total energy consumption
 - ii. That the maximum energy usage new non-residential development for space heating and total energy usage would not exceed the following:

- 30 kwh/m2/annum for space heating
- 70 kwh/m2/annum for total energy consumption

Council will require as-built performance monitoring to be taken on schemes of 100 dwellings or more. This will require all schemes to submit as-built performance information at completion stage, prior to first occupation and for 10% of all new dwellings to provide in-use monitoring data for the first 5 years of occupation to demonstrate that it meets the required energy standards and where the scheme does not, propose an alternative way to achieve the required energy efficiency standard.

both residential and non-residential development should rate at least the same amount of renewable energy (kwh) on site as their demand over the course of a year.

If it is not possible to generate sufficient renewable energy on-site as evidenced by a technical or viability justification, a scheme should seek to generate sufficient renewable energy off-site within the Borough or within 5 miles of the boundary;

If this cannot be achieved, then the scheme should seek to connect to a low or zero-carbon district energy and/or heating network;

- iii. If none of these can be achieved, the scheme will need to make a financial contribution to the Council's Carbon Offset Fund.
- g. How, as part of seeking to reduce the contribution of new development towards climate change, the development will seek to reduce the amount of embodied carbon in the construction materials used. The sustainability statement should demonstrate that:
 - i. All new development proposals proposing demolition of existing buildings will need to provide a justification setting out clear reasons that the repair, refurbishment, re-use or re-purpose of buildings cannot be accommodated.
 - ii. Wherever possible proposals should maximise the recycling of materials on site or the use of recycled materials to minimise avoidable waste.

Figure 4.2: Hastings proposed Net Zero policy from the Draft New Local Plan – Regulation 18 consultation

Hastings Council Regulation 18 Draft Local Plan – 2/2

Because Policy SC3 applies its requirements where feasible and viable, and allows exceptions on technical, policy-based and viability grounds, standards that are not underpinned by a tested viability position are open to being negotiated down scheme by scheme. Applicants would be able to argue that a lower standard is all that can be achieved without the Council holding the evidence to demonstrate otherwise.

Development could therefore comply with the Policy while still delivering buildings that perform significantly below the level required to support the borough's climate ambitions, and the standards themselves would be difficult to defend at examination.

Therefore the Hastings Local Plan, now needs to establish through a Hastings-specific evidence base the level at which operational energy limits should be set, and expressing them explicitly as Energy Use Intensity (kWh/m²/year) alongside a separate space heating demand limit; specifying the methodology by which predicted operational performance must be demonstrated, such as CIBSE TM54 or PHPP; confirming the priority of a fabric-first approach ahead of renewable energy generation; and costing the resulting package so that it can be tested through the Whole Plan Viability Assessment.

Standards arrived at in this way would carry the well-reasoned and robustly costed rationale that national policy expects and would convert the direction signalled at Regulation 18 into requirements capable of being applied with confidence and defended at examination.

Strategic Policy 5 (SP5): Meeting the Challenge of Climate Change

Proposals must contribute to the council's aim to make Hastings carbon neutral ahead of the UK target of 2050. Development will be supported where it can be demonstrated that it would not contribute towards climate change and that it incorporates adequate adaptation and mitigation measures to ensure future resilience. The council will expect that development proposals will:

1. Be designed to ensure that they are not net contributors to climate change.
2. Site all components of the scheme effectively to achieve maximum benefits and mitigate and adapt to the negative effects of climate change.
3. Incorporate measures to limit energy usage to minimise carbon emissions, following the energy hierarchy.
4. For new residential development, seek to meet Passivhaus Standards Premium or an agreed alternative of equivalent or better standard.
5. For new employment development, seek to meet BREEAM 'Excellent' or an agreed alternative of equivalent or better standard.
6. Incorporate measures to reduce water usage and reuse water, including recycling measures.
7. Proposals should limit embodied carbon throughout the development process, promoting the circular economy.
8. Proposals for conversions and extensions should seek to address 1-7 above as far as is practicable.

Renewable and Low Carbon Technologies

Take a positive approach to proposals for new development that includes renewable energy generation, zero carbon heating infrastructure.

1. Seek to ensure that the annualised energy demands of new development is met through onsite renewable energy and storage.
2. Support proposals for decentralised energy generation and distribution and community led initiatives, subject to minimising environmental impacts.
3. Explore the use of Local Development Orders in appropriate locations to simplify and expedite the planning process for Low and Zero Carbon technologies such as roof mounted solar panels and air source heat pumps.
4. Support proposals for the development of area-wide low carbon heating solutions in locations where mixed heat load and other factors make this feasible, where negative impacts can be mitigated or avoided and where energy affordability for occupiers can be demonstrated.
5. Take a positive approach to the enhancement of existing energy infrastructure to increase network capacity and to facilitate the adoption of emerging Low and Zero Carbon technologies.

Figure 4.2: Hastings proposed Net Zero policy from the Draft New Local Plan – Regulation 18 consultation

Issues with the current Part L planning metric (% improvement over Part L)

A metric which cannot be measured post-completion

Current planning policy measures compliance against a hypothetical notional building, which matches the proposed building's size, shape, orientation, and, to some extent, glazing proportions. This fictional benchmark is used solely for Building Regulations compliance.

As performance is expressed as a percentage improvement over the notional building, it is a relative metric that cannot be directly verified once the building is occupied. This limits meaningful comparison between buildings and makes post-construction performance verification and feedback more challenging.

A more efficient building form is not incentivised

Reducing heat loss, minimising thermal junctions, and optimising building orientation and façades for winter solar gains are fundamental principles of energy-efficient design. However, because the notional building mirrors the proposed building's form, these design improvements are largely excluded from performance comparisons. As a result, inefficient building forms are not penalised, allowing them to achieve similar compliance outcomes to well-designed buildings despite their inherently poorer performance.

Additional issues with changing carbon and primary energy factors

Furthermore, current performance targets in Part L rely on carbon emission factors and primary energy factors that introduce additional complexity. For example, the carbon factor for electricity has changed very significantly over the last 10 years and will continue to change over the next 10 years. This in itself has an impact on the % improvement over Part L which could be misleading.

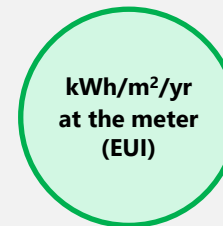
The exclusion of unregulated energy

Current planning policy only takes into account regulated carbon emissions and does not require any reduction in 'unregulated' energy use, which in some building types can account for [50%](#) of total energy use. Therefore, 100% carbon emission reduction over Part L does not mean that the building will meet net zero operational carbon.

Due to the points above, it is necessary for new local planning policy to fill the gap left by Building Regulations and be used as a mechanism for the delivery of net zero carbon buildings in operation to achieve local and national climate change commitments.



- ✗ Is not a 'physical' metric
- ✗ Is a concept only experts can understand
- ✗ Cannot be checked during operation
- ✗ Cannot be used to 'close the loop' and improve the system over time
- ✗ Does not reward good design e.g. form



- ✓ Is a 'physical' metric which can be measured
- ✓ Can be understood by all professionals, and most consumers
- ✓ Can be checked against in-use data
- ✓ Can be checked to improve Standard Assessment Procedure (SAP) prediction of energy use over time

Figure 4.3: The relative metric used by current planning policy (i.e. % improvement over Part L) has a number of unintended consequences which hinder the continuous improvement of building design, consumer trust and performance outcomes.

Why the use of predictive energy modelling is necessary over Part L compliance

Part L modelling

Part L energy assessment methodologies (e.g., SAP for domestic buildings and NCM for non-domestic buildings) are currently used to evidence the energy and carbon efforts for all planning applications and demonstrate their compliance with Part L of the Building Regulations.

SAP (Standard Assessment Procedure) is used for residential buildings through the associated SAP software and the NCM (National Calculation Methodology) for non-domestic buildings through SBEM (Simplified Building Energy Model) and Dynamic Simulation Modelling (DSM) tools.

However, it is important to note that these Part L energy assessment methodologies were developed only to check compliance with Building Regulations. They were never meant to perform some of the functions that would be required to deliver Net Zero carbon buildings, and most importantly the prediction of future energy use.

There is now a consensus in the industry, including leading organisations across the UK built environment sector such as CIBSE, UKGBC, RIBA, the Better Building Partnership and the Greater London Authority, that a different and better type of energy modelling is now required if Net Zero Carbon buildings are to be delivered.

Why predictive energy use is necessary

The accuracy of energy modelling is important to ensure it provides a reasonable indication of real-world performance. While behaviours may vary once a building is occupied, energy modelling can be used to reliably establish predicted energy use and therefore drive suitable design and construction decisions.

- Domestic Buildings – the PHPP methodology and tool has been shown to predict energy use much more accurately than the current version of SAP.
- Non-Domestic Buildings – predictive energy modelling following the [CIBSE TM54](#) methodology predicts all the end uses of a building. This can be undertaken using IESVE, TAS and PHPP energy modelling packages.

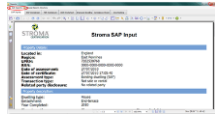
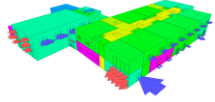
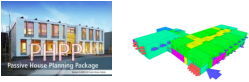
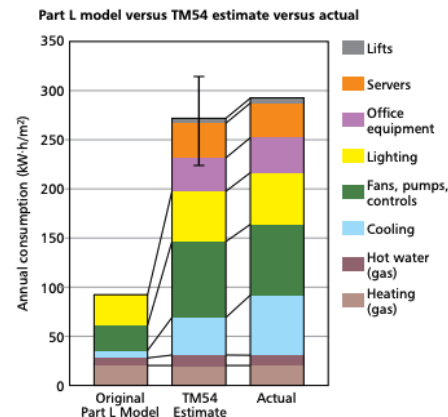
	Part L modelling	Predicted energy use modelling
Domestic	 SAP (Part L1A)	 PHPP
Non-domestic	 NCM (Part L2A)	 PHPP or DSM (TM54)

Figure 4.4: There is a significant difference between Part L modelling currently used to demonstrate compliance with planning policy and predicted energy use modelling.



In the UK, energy models are used at the design stage to compare design options and to check compliance with Building Regulations. **These energy models are not intended as predictions of energy use, but are sometimes mistakenly used as such.**

In some other countries, total energy use at the design stage is estimated through voluntary standards. For example, the Australian NABERS (a building rating system) encourages the estimation of energy use at the design stage and provides guidance for designers/modellers.

Figure 4.5: Extracts of CIBSE Technical Memorandum 54 (TM54): Evaluating operational energy performance of buildings at the design stage

The difference between Part L and predictive energy modelling

Compliance is not performance

Part L compliance modelling is designed to demonstrate that a building satisfies Building Regulations. It uses a standardised methodology, fixed assumptions and regulated energy uses to enable consistent comparison between buildings. While this is essential for obtaining planning and building control approval, it is not intended to predict actual operational energy consumption.

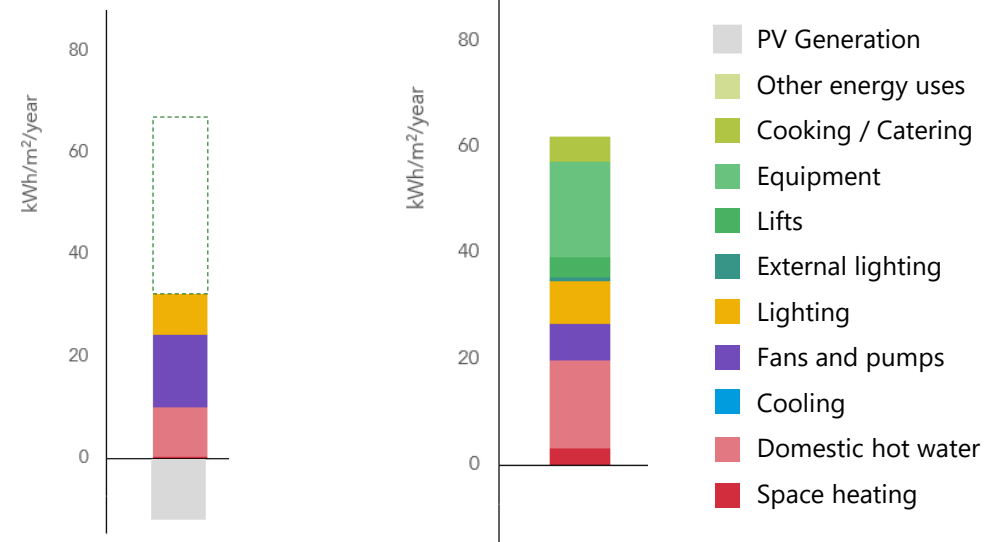
Predictive energy modelling, using methodologies such as CIBSE TM54 or PHPP (Passive House Planning Package), takes a fundamentally different approach. These methods seek to estimate how the building will perform once occupied by considering realistic occupancy patterns, equipment loads and operational behaviour.

Why this matters

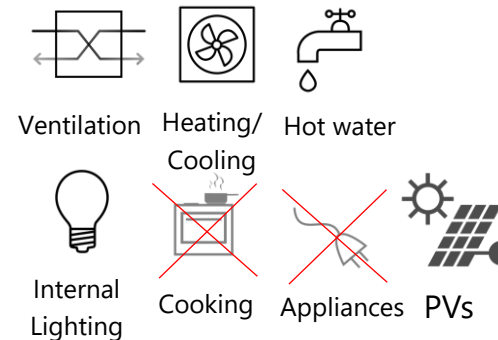
A building that comfortably passes Part L can still consume significantly more energy in operation than its compliance model suggests. Predictive energy modelling helps designers and clients to:

- Understand likely operational energy use
- Reduce the performance gap between design and operation
- Evaluate design options using realistic assumptions
- Inform Net Zero Carbon strategies

For low-energy and Net Zero projects, predictive modelling provides a far more reliable basis for design decisions than compliance modelling alone.



Part L Compliance Modelling (for office building)



TM54/PHPP Predictive Energy Modelling (for office building)

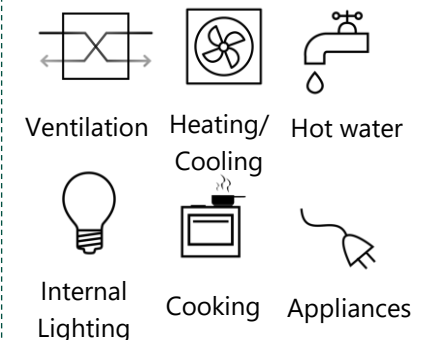


Figure 4.6: Energy uses assessed by a compliance energy model vs predictive energy model

05 Evidence and Precedents

Primary Legislation for Local Energy Efficiency Requirements

The ability of local planning authorities to establish policies that seek higher standards of energy and carbon performance than those required by national Building Regulations is underpinned by primary legislation. Two provisions are particularly relevant:

1. Section 1(1)(c) of the Planning and Energy Act 2008

Provides a statutory basis for local planning authorities to include policies within their development plans that impose reasonable requirements for development to comply with **energy efficiency standards that exceed the energy requirements of Building Regulations**.

This provision is important because it establishes, in primary legislation, that Building Regulations do not necessarily represent a ceiling on the energy performance that may be sought through the planning system. Subject to the requirements being reasonable and supported by appropriate evidence, the Act provides a legislative basis for local planning policy to establish higher energy efficiency standards.

2. Section 19(1A) of the Planning and Compulsory Purchase Act 2004.

Requires development plan documents, taken as a whole, to include policies designed to secure that the development and use of land contribute to both the **mitigation of, and adaptation to, climate change**.

Implications for the policy evidence base

The primary legislation therefore provides a strong foundation for considering enhanced energy performance requirements through planning policy. Section 19(1A) establishes the statutory role of development plans in contributing to climate change mitigation and adaptation, while Section 1(1)(c) expressly enables reasonable planning requirements for energy efficiency standards exceeding Building Regulations.

Energy policies	
(1)	A local planning authority in England may in their [F1 local plan and any [F2 supplementary plan and] a minerals and waste planning authority may in their minerals and waste plan and any supplementary plan.] F3 ... include policies imposing reasonable requirements for—
(a)	a proportion of energy used in development in their area to be energy from renewable sources in the locality of the development;
(b)	a proportion of energy used in development in their area to be low carbon energy from sources in the locality of the development;
(c)	development in their area to comply with energy efficiency standards that exceed the energy requirements of building regulations.

Figure 5.1 – Extract from [Planning and Energy Act 2008](#)

[F1 19 Preparation of local development documents	
(1)	[F2 Development plan documents] must be prepared in accordance with the local development scheme.
[F3 (1A)]	Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change.
[F4 (1B)]	Each local planning authority must identify the strategic priorities for the development and use of land in the authority's area.
(1C)	Policies to address those priorities must be set out in the local planning authority's development plan documents (taken as a whole).

Figure 5.2 – Extract from [Planning and Compulsory Purchase Act 2004](#)

Why the 2023 Written Ministerial Statement should not represent a barrier to the proposed policies

The 2023 Written Ministerial Statement

A Written Ministerial Statement (WMS) was made on 13th December 2023 by the Parliamentary Under Secretary of State for Levelling Up, Housing and Communities. A key extract of the statement is:

*Any planning policies that propose local energy efficiency standards for buildings that go beyond current or planned buildings regulation should be rejected at examination **if they do not have a well-reasoned and robustly costed rationale** that ensures:*

- That development remains viable, and the impact on housing supply and affordability is considered in accordance with the National Planning Policy Framework.*
- The additional requirement is expressed as a percentage uplift of a dwelling's Target Emissions Rate (TER) calculated using a specified version of the Standard Assessment Procedure (SAP).*

Reaction to the 2023 WMS

It was confirmed through the courts in *R (Rights: Community: Action Ltd) v Secretary of State* [2024] EWHC 1693 (Admin) [2025] PTSR 135 (Lieven J) and on appeal [2025] EWCA Civ 990; [2026] PTSR 864 (25 July 2025), that the WMS does not override or remove the statutory power under Section 1 of the Planning and Energy Act (2008). At various intervals throughout this legal process, Essex County Council have published the written legal advice provided to them by Estelle Dehon KC. The written advice concludes that the WMS should not prevent local authorities from exercising their statutory powers and duties.

A growing coalition of local authorities (including Bath & North East Somerset, Cornwall and the Central Lincolnshire authorities), supported by the Town and Country Planning Association (TCPA), UK Green Building Council, Passivhaus Trust, LETI and other industry organisations, has argued that local planning authorities should retain the ability to set operational energy performance standards beyond the minimum requirements of Building Regulations, with the legal advice explaining that 'Section 19(1A) of the Planning and Compulsory Purchase Act 2004 imposes a general requirement that **development plan documents** must, taken as a whole, "include policies designed to secure that **the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change**". These authorities recognise that compliance with Part L alone is insufficient to deliver genuinely net zero buildings, and have adopted, or are seeking to adopt, policies based on measurable energy metrics such as Energy Use Intensity (EUI) and space heating demand.

Policies must still satisfy the tests of soundness, including the requirement that the approach is justified and viable.

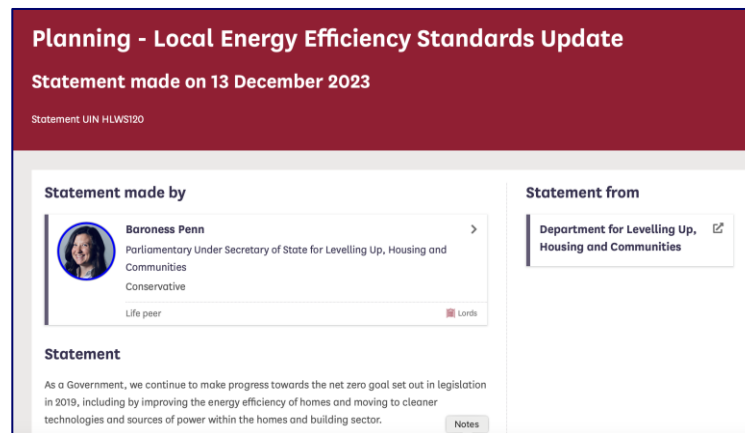


Figure 5.3 – The 2023 Written Ministerial Statement on Planning – Local Energy Efficiency Standards Update can be found at <https://questions-statements.parliament.uk/written-statements/detail/2023-12-13/hlws120>

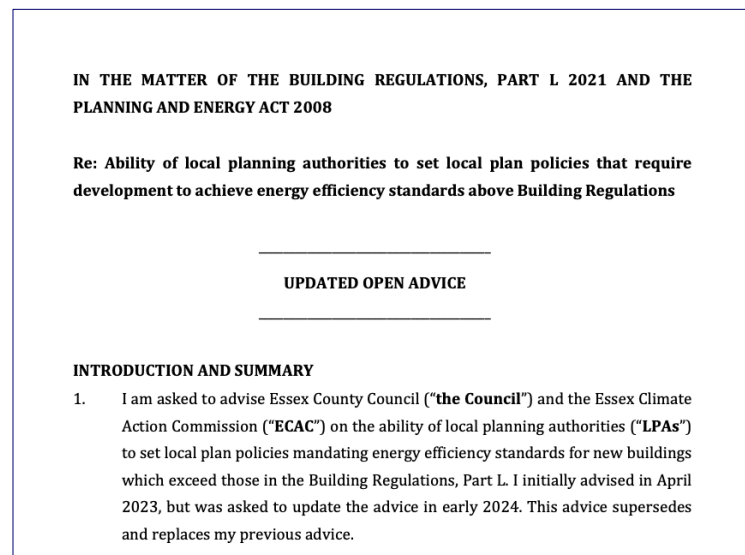


Figure 5.4 – Written legal advice provided to Essex County Council

Proposed reforms to the National Planning Policy Framework (NPPF)

The Draft NPPF 2025

The Government's draft National Planning Policy Framework (NPPF), published for consultation in [December 2025](#), proposes a change to the way local planning authorities can set technical standards through Local Plans. Primarily "*Policy PM13: Setting Standards*", which seeks to restrict the use of locally derived standards and create greater consistency between local planning policy and Building Regulations.

Draft Policy PM13 makes clear that local standards should not duplicate or exceed matters already addressed through Building Regulations, with only limited exceptions. These exceptions include water efficiency standards, where local authorities may apply tighter requirements in areas designated as being under serious water stress. As these proposals formed part of a consultation draft document, they do not currently form national planning policy. It should also be noted that there is the potential for this policy to come forward with amendments subject to the outcomes of the public consultation period.

A potential shift in local planning policy:

The proposals therefore represent a significant shift in national planning policy. It should be noted both in the context of the Essex County Council Open Legal Advice and the guidance provided in the [Manual to the Building Regulations](#), that "nothing in the Building Regulations or an approved document prevents... from adopting higher standards". Approved Document L itself provides additional clarity that the measures therein represent an 'at minimum' position.

The Manual to the Building Regulations establishes through its wording of F20 and F21 allowing that Local Planning Authorities "may impose requirements that may exceed the minimum standards", and that they "may include", but are not limited to, accessible housing and water efficiency (as repeated in consultation draft NPPF 2025 PM13 1b), and that they must appear as conditions in the relevant planning consent with building control informed.

Many local authorities have already adopted locally evidenced net zero policies requiring higher standards of operational energy performance or carbon emissions in advance of any new National Policy position. The draft NPPF is more restrictive in its intent than the WMS and 2024 NPPF, although the current wording could be argued to leave some element of flexibility in place, especially when considered in conjunction with the Build Regulations and associated guidance.

Overall, the draft NPPF proposes a revised approach to the setting of locally derived technical standards. However, as national planning policy rather than primary legislation, PM13 should be considered alongside the existing statutory and regulatory framework, including the Planning and Energy Act 2008, Building Act 1984, Building Regulations and relevant provisions of the Deregulation Act 2015. Within this context, there appears to remain scope for locally evidenced standards where these are appropriately justified, consistent with primary legislation and, where secured by condition, capable of meeting the '[six tests](#)'. Given the current relationship between the draft policy and the existing legislative and building control framework, local authorities should keep their position under review as the NPPF progresses and any associated legislative or regulatory changes are brought forward.

PM13: Setting standards

1. Quantitative standards set through development plan policies should be limited to infrastructure provision, affordable housing requirements¹⁸, parking and design and placemaking, and where this will provide clarity and a high degree of certainty about the requirements that relevant development proposals are expected to meet. Such standards should:
 - a. Be justified, drawing upon relevant evidence of local characteristics and needs, while utilising or adapting relevant national standards where it is appropriate to do so (such as in relation to green infrastructure). Evidence in support of standards should be proportionate, in accordance with policy PM8, especially where relevant national standards already exist;
 - b. Not cover matters which are already addressed by Building Regulations, other than in relation to:
 - i. accessibility standards, for which local standards in relation to requirement M4(2) (accessible and adaptable dwellings) and/or M4(3) (wheelchair user dwellings) of the Building Regulations should be set in line with policy HO5; or
 - ii. water efficiency, for which it may be appropriate to apply the tighter Building Regulations optional requirement where justified, or exceptionally a more stringent local standard in areas of serious water stress.
 - c. Not cover matters relating to the construction or internal layout of buildings unless they are to implement the nationally described space standard.

Figure 5.5 – Extract from *The Government's draft National Planning Policy Framework (NPPF)*, published for consultation in December 2025

Optional requirements

- F20** Local planning authorities may impose planning requirements that may exceed the minimum standards required by the [Building Regulations](#). These may include the following cases:
- a. accessible housing (Requirements M4(2) and M4(3) of [Schedule 1](#) to the [Building Regulations](#))
 - b. water efficiency ([Regulation 36](#)).
- F21** Such planning requirements will appear as conditions in the relevant planning consent. Enforcement of such options is part of the planning process. However, it is important that the [building control body](#) is made aware of such planning conditions.

Figure 5.6 – Extract from *The Manual to the Building Regulations*

Policy Review | Uttlesford Council

Uttlesford District Council adopted its new [Local Plan \(2021–2041\)](#) in March 2026, following a successful [Examination in Public](#). The plan sets out a long-term vision and planning framework for how the district will grow to 2041, including the delivery of high-quality homes, employment opportunities and the infrastructure needed to support sustainable communities.

A key outcome of the Examination was the Planning Inspectors' endorsement of Space Heating Demand (SHD) and Energy Use Intensity (EUI) metrics as a justified, sound and effective basis for delivering net zero operational carbon development. Importantly, the Inspectors supported these performance-based metrics even though they go beyond the Target Emission Rate (TER)-based approach referenced in the 2023 Written Ministerial Statement (WMS).

"137. While undoubtedly an ambitious approach, the requirements in Core Policy 22 would help design buildings in ways that contribute to significant reductions in greenhouse gas emissions, which is consistent with the approach to mitigating and adapting to climate change in the Framework. Given the above conclusions we find that there is a justified rationale for the approach taken in Core Policy 22. Although the use of alternative metrics to TER means that it departs from the WMS, that departure is justified by the evidence presented to us and the objectives of the Plan in addressing climate change."

This is particularly significant given the current national policy context. The draft National Planning Policy Framework (through proposed paragraph PM13) signals a move towards limiting local authorities' ability to set their own operational energy performance standards, instead directing such requirements to national Building Regulations.

The Inspectors also recognised that:

- EUI and SHD provide more appropriate metrics for achieving net zero operational carbon than TER-based measures.
- Performance-based energy standards can be justified where supported by robust local evidence.
- Enhanced energy performance standards do not undermine development viability when supported by a transparent evidence base.

The Uttlesford outcome provides an important precedent for local planning authorities currently reviewing climate policies or preparing new Local Plans, demonstrating that well-evidenced, performance-based net zero policies remain capable of being found sound, despite an increasingly restrictive national policy direction.

Core Policy 22 Net Zero Operational Carbon Development

Part A. New build development (residential and non-residential)

All new buildings (of one or more new dwellings or 100m² or more non-residential floor space) must be designed and built to be Net Zero Carbon in operation. They must be ultra-low energy buildings, fossil fuel free, and generate renewable energy on-site to at least equal annual energy use.

To achieve this, these new buildings are required to comply with requirements 1 to 5 as set out below (to be demonstrated through an Energy Assessment, which for major applications must be a full energy strategy utilising accurate methods for operational energy use prediction, and for minor applications²¹ must use either those same methods or the 'net zero spreadsheet' from **Essex Design Guide**).

Requirement 1: Space heating demand

- all new residential buildings (apart from bungalows) and all non-residential buildings must achieve a space heating demand of 15 kWh/m² GIA/yr or less, and
- all new bungalows must achieve a space heating demand of 20 kWh/m² GIA/yr or less.

(Unless the reason for exceeding this target is specifically due to high unregulated energy use for equipment such as refrigeration of data centres that are unavoidable due to the proposed use of the finished scheme, in which case follow the approach for 'other new build' below).

- for other new build residential and non-residential buildings, that are not covered by a. and b. above, applicants should report their total energy use intensity but are not required to comply with a certain limit. These are however encouraged to demonstrate having made efforts towards complying with EUI limits being developed by the UK Net Zero Carbon Building Standard initiative.

Requirement 4: On-site renewable energy generation

Renewable energy must be generated on-site for all new developments (1 or more new dwellings or 100m² or more non-residential floorspace) at a level consistent with either (i) or (ii) below:

- the amount of energy generated in a year should match or exceed the predicted annual energy use of the building, i.e. Renewable energy generation (kWh/m²/yr) ≥ predicted annual energy use (kWh/m²/yr)*, or
- the amount of energy generated in a year is:
 - at least 80 kWh/m² building footprint per annum for all building types; and
 - at least 120 kWh/m² building footprint per annum for industrial buildings.

Requirement 2: Fossil fuel free

- no new developments shall be connected to the gas grid, and
- fossil fuels must not be used on-site to provide space heating, domestic hot water or cooking, and
- space heating and domestic hot water must be provided through low carbon fuels.

Requirement 3: Energy Use Intensity (EUI) limits

- residential (Use classes C3 and C4): All new build dwellings (1 dwelling or more) must achieve an Energy Use Intensity (EUI) of no more than 35 kWh/m² GIA/yr
- on larger sites in exceptional circumstances this may be met as a site-wide residential average (weighted by floor area), provided that no single dwelling has an EUI of >60kWh/m²/yr
- non-residential: The following new build non-residential buildings must achieve an Energy Use Intensity (EUI) of no more than the following where technically feasible by building type or nearest equivalent
 - Offices - 70 kWh/m² GIA/yr
 - Schools - 65 kWh/m² GIA/yr
 - Light Industrial - 35 kWh/m² GIA/yr

Requirement 5: As-built performance confirmation and in-use monitoring

- in addition to the energy performance predictions made at design/application stage, all developments must resubmit as-built information at completion and prior to occupation
 - major applications should submit a recalculation of energy performance predictive modelling using as-built specifications (see **Table 9.1**)
 - minor applications should reconfirm the specifications to which the development has been built, taking into account any changes to fabric and systems compared to the specifications noted at design/application stage.
- in-use energy monitoring for the first 5 years of operation is required on a minimum of 10% of dwellings for development proposals of 100 dwellings or more, or a 10% representative sample of premises for development of 10,000m² (gross internal area) or more.

Alternative routes to meeting policy requirements

Proposals that are built and certified to the Passivhaus Classic or higher Passivhaus standard are deemed to have met Requirements 1 and 3. Requirements 2, 4 and 5 must still be met to achieve policy compliance.

Policy Review | Bath and Northeast Somerset

Bath and North East Somerset Council adopted their new policy in the Local Plan Partial Update in January 2023, becoming the first council in England to successfully adopt an energy-based net zero housing policy as part of its commitment to tackling the climate emergency.

"The new housing development policy will ensure the energy use of any proposed development is measured and meets a specified target — setting a limit on the total energy use and demand for space heating. It will also require sufficient on-site renewable energy generation to match the total energy consumption of the buildings — ensuring the development is 100% self-sufficient.

The council will also impose net zero operational carbon standards for new major non-residential development.

The policy is the first new housing policy to be net-zero aligned based on 2030 trajectories of industry-leading organisations such as the London Energy Transformation Initiative (LETI), the Royal Institute of British Architects (RIBA) and the Chartered Institute of Building Services Engineers (CIBSE)."

Source: BANES Council's website

Policy SCR6 - New Build Residential

New build residential development will be required to meet the standards set out below.

New build residential development will aim to achieve zero operational emissions by reducing heat and power demand then supplying all energy demand through onsite renewables. Through the submission of an appropriate energy assessment, having regard to the Sustainable Construction Checklist SPD, proposed new residential development will demonstrate the following:

- Space heating demand less than 30kWh/m²/annum;
- Total energy use less than 40kWh/m²/annum; and
- On site renewable energy generation to match the total energy use, with a preference for roof mounted solar PV
- Connection to a low- or zero-carbon district heating network where available

Relevant extracts of the Planning Inspector's report include the following:

*79. Policy SCR6 is concerned with sustainable construction for new residential buildings, aiming to achieve zero operational emissions by reducing heat and power demand and supplying all energy demand through onsite renewables. The Policy includes **limits on space heating and total energy use**, taking an **energy based approach**, rather than being based upon carbon reduction as per the Building Regulations. The approach taken in the Plan to energy usage applies to **both regulated and non-regulated energy use**, which is a further difference to that taken in the Building Regulations which are concerned only with regulated energy use.*

85. I therefore consider that the relevance of the WMS 2015 to assessing the soundness of the Policy has been reduced significantly. [...] For the reasons set out, that whilst I give the WMS 2015 some weight, any inconsistency with it, given that it has been overtaken by events, does not lead me to conclude that Policy SCR6 is unsound, nor inconsistent with relevant national policies.

86. I am satisfied that the energy efficiency standards set out in Policy SCR6 are justified and that they would not threaten deliverability or viability of housing development

Figure 5.8 – Extract from Bath and Northeast Somerset new local plan

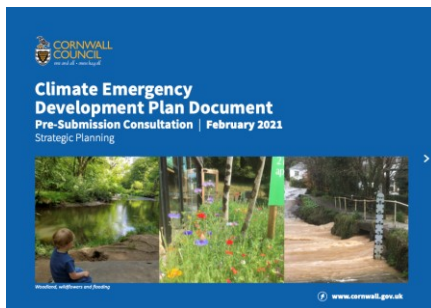
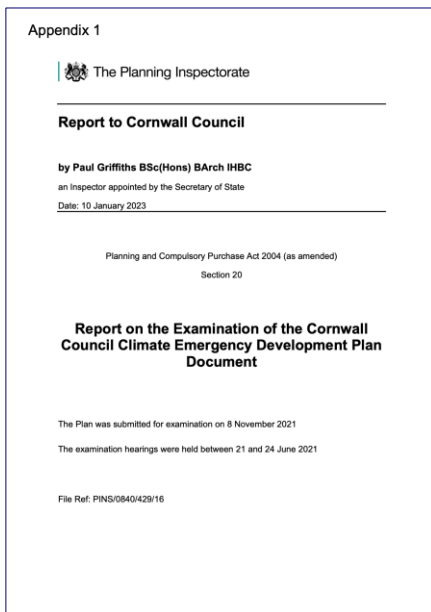


Figure 5.9 – Extract from Cornwall Council Climate Emergency DPD



Policy SEC1 – Sustainable Energy and Construction

Development proposals will be required to demonstrate how they have implemented the principles and requirements set out in the policy below.

2b. New Development – Residential

Residential development proposals will be required to achieve Net Zero Carbon and submit an 'Energy and Carbon Statement' that demonstrates how the proposal will achieve:

- Space heating demand less than 30kWh/m²/annum;
- Total energy use less than 40kWh/m²/annum; and
- On-site renewable generation to match the total energy use, with a preference for roof mounted solar PV.

Where the use of onsite renewables to match total energy consumption is demonstrated to be not technically feasible (for example with apartments) or economically viable, renewable energy generation should be maximised as much as possible; and/or connection to an existing or proposed district energy network; or where this is not possible the residual carbon offset by a contribution to Cornwall Council's offset fund.

Cornwall Council's Climate Emergency DPD has successfully completed the examination process and was adopted in February 2023. Policy SEC1 Sustainable Energy and Construction is being implemented on a phased approach for applications received from 15th June 2023.

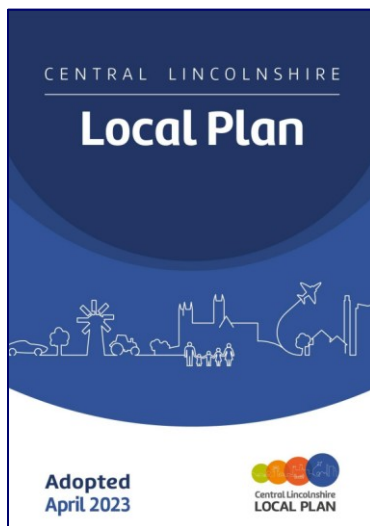
Relevant extracts of the Planning Inspector's report include the following:

172. [...] the Plan requires residential development proposals to achieve net zero carbon with applications to be accompanied by an Energy and Carbon Statement demonstrating how the proposal will achieve: space heating demand of less than 30kWh per square metre per annum; total energy consumption of less than 40kWh per square metre per annum; and on-site renewable energy generation to match the total energy consumption with roof mounted solar PV as a preference. It goes on to say that where meeting onsite energy demands through renewables is not possible on-site technically, or not viable, renewable energy generation on-site should be maximised and/or a connection to an existing or proposed District Heating Network facilitated. If this is not possible, then the residual carbon should be offset through a contribution to Cornwall Council's offset fund.

174. Broadly, as set out above, this approach is soundly based and justified. There is however a need to make some parts of these requirements more transparent given that the policy is aimed at energy use, not carbon emissions. First, given the approach taken the initial part of this policy element needs to say that what is required is an Energy Statement rather than an Energy and Carbon Statement. Second, and linked to that point, it needs to set out that it is the residual energy that must be offset by a contribution rather than the residual carbon. These changes are needed to make the policy effective.

Conclusion

182. With these Main Modifications, my view is that the requirements of Policy SEC1 are acceptable in the light of what the Plan aims to achieve.



The Central Lincolnshire Local Plan was formally adopted in April 2023 and will be used in making decisions on planning applications across the City of Lincoln, North Kesteven District and West Lindsey District areas. The Plan places climate change at its core with a set of policies aimed at making Central Lincolnshire net zero carbon, including in making sure new homes are efficient, attracting renewable energy generation, and ensuring new homes are adaptable to climate change. It includes a policy to deliver net zero carbon buildings based on the energy-based approach similar to Bath and North East Somerset and Cornwall Councils. The policy sets 2 primary requirements:

1. Schemes must generate at least the same amount of renewable electricity on site as the electricity they need to operate.
2. Schemes must reduce energy demand in the first place and target a space heating demand of around **15-20 kWh/m²/year**, with a total energy demand of **35 kWh/m²/year** achieved through a 'fabric first' approach to construction.

Reducing Energy Consumption in New Build

Design Principles for Efficient Buildings – Policy S6

167. Policy S6 is an over-arching design policy and relates to some of the principles which are expanded upon in the policies that follow, such as reducing energy needs and generating energy from renewable sources. Because the policies that follow include caveats and flexibility, **MM4** is needed to ensure internal consistency. It is also required for effectiveness and states that the design expectations should be considered (rather than used) in new development.

Reducing Energy Consumption – Residential Development - Policy S7

168. The Plan is supported by a suite of comprehensive evidence which set the context and background of climate change, identify the need to reduce energy consumption and generate more renewable energy and test ways in which the aims and objectives can be met by development plan policies.²³ In summary, the evidence shows that existing buildings in Central Lincolnshire account for around 43% of all greenhouse gas emissions. Because a Local Plan has a limited influence on retrofitting existing buildings, in order to reach both national and local targets for carbon reductions²⁴, significant reductions in the energy requirements of new buildings are needed now.

169. For new residential development, Policy S7 therefore includes two primary requirements. The first is that schemes must generate at least the same amount of renewable electricity on site as the electricity they need to operate. To help achieve this, the second requirement aims to reduce demand in the first place and targets a space heating demand of around 15-20 kWh/m²/year, with a total energy demand of 35 kWh/m²/year achieved through a 'fabric first' approach to construction. In doing so, Policy S7 seeks to deliver new homes to net zero carbon standards.

Figure 5.10 – Extract from Central Lincolnshire Local Plan

06 Recommended NZ Policy

Policy recommendation | Net Zero Carbon **New Buildings**

Introduction

This section details policy recommendations for Local Plan preparation in Hastings in terms of operational energy and embodied carbon of new buildings. For each policy, a summary justification is provided along with the proposed policy wording.

Net Zero Carbon New Building is the recommended net zero overarching policy, which states that all new buildings must be designed and built to be Net Zero Carbon, to enable Hastings to stay within the challenging remaining carbon budgets.

Recommended overarching policy: Net Zero Carbon New Buildings

Proposed policy wording principles

All new buildings must be designed and built to be Net Zero Carbon. They must be ultra-low energy buildings, be fossil fuel free, generate renewable energy on-site, and report embodied carbon.

All new buildings are required to comply with the following requirements:

- **Requirement 1.1:** Fossil fuel free
- **Requirement 1.2:** Space heating demand
- **Requirement 1.3:** Energy Use Intensity (EUI)
- **Requirement 1.4:** On-site renewable energy generation
- **Requirement 1.5:** Lean Building Design
- **Requirement 1.6:** Embodied Carbon



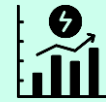
Requirement 1.1 **Fossil fuel free**

Fossil fuels, such as oil and natural gas shall not be used to provide space heating, hot water or used for cooking.



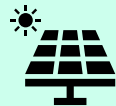
Requirement 1.2 **Space heating demand**

*Meeting space heating demand limits for residential and non-residential developments.
Demonstrated using predictive energy modelling.*



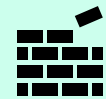
Requirement 1.3 **Energy use intensity (EUI)**

*Meeting energy use intensity (EUI) limits for residential and non-residential developments.
Demonstrated using predictive energy modelling.*



Requirement 1.4 **On-site renewable energy generation**

100% of the annual energy consumption required by buildings shall be generated using on-site renewables, for example through solar PV.



Requirement 1.5 **Lean Building Design**

Promoting lean building design by creating buildings that are efficient in material use, form and design



Requirement 1.6 **Embodied carbon**

Reporting whole life carbon

Policy recommendation | Net Zero Carbon Existing Buildings

Introduction

This section details policy recommendations for Local Plan preparation in Hastings in terms of operational energy and embodied carbon of existing buildings.

Net Zero Carbon Existing Building is the recommended net zero overarching policy, which states that all existing buildings must prioritise retrofit over re-build, thoroughly exploring the potential for refurbishment and improvements in performance.

Recommended overarching policy: Net Zero Carbon Existing Buildings

Proposed policy wording principles

All existing buildings must be decarbonised by being fossil fuel free at the point of use, seek to improve its performance and prioritise retrofit over demolition.

All existing buildings are required to comply with the following requirements:

- **Requirement 1.1:** Fossil fuel free
- **Requirement 2.1:** Retrofit first



Requirement 1.1 **Fossil fuel free**

Fossil fuels, such as oil and natural gas shall not be used on-site to provide space heating, hot water or used for cooking.



Requirement 2.1 **Retrofit first**

Presumption against demolition and in favour of the re-use of existing buildings

Policy recommendation | Requirement 1.1: Fossil fuel free

Applies to

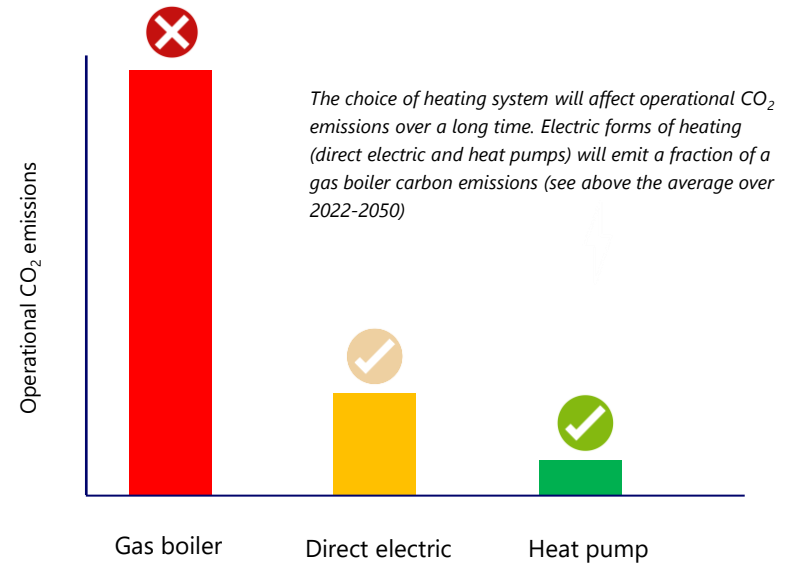
All new and retrofit building applications.

Intention

To achieve Hastings emission reduction targets and remain aligned with national carbon budgets, both new and existing buildings must transition away from fossil fuel based heating systems. The adoption of low-carbon heating is therefore a fundamental of a Net Zero Carbon building.

Proposed requirement wording

- No new or existing developments to be connected to the gas grid.
- Fossil fuels must not be used on-site at the point of use, such as for providing space heating, domestic hot water or cooking.



Planning submission	Description	• Confirmation that no fossil fuels at the point of use have been used on site
	Format	• Energy strategy report
Discharge of condition	Description	• Confirmation that the development has been constructed without any fossil fuels at the point of use, installed on site
	Format	• As-built energy strategy report

Policy recommendation | Requirement 1.2: Space Heating Demand limits

Definition

Space heating demand (SHD) is the amount of heat energy needed to heat a home over a year and is expressed in kWh/m²/yr. It is a measure of the thermal efficiency of the building elements.

Applies to

All new major* building applications.

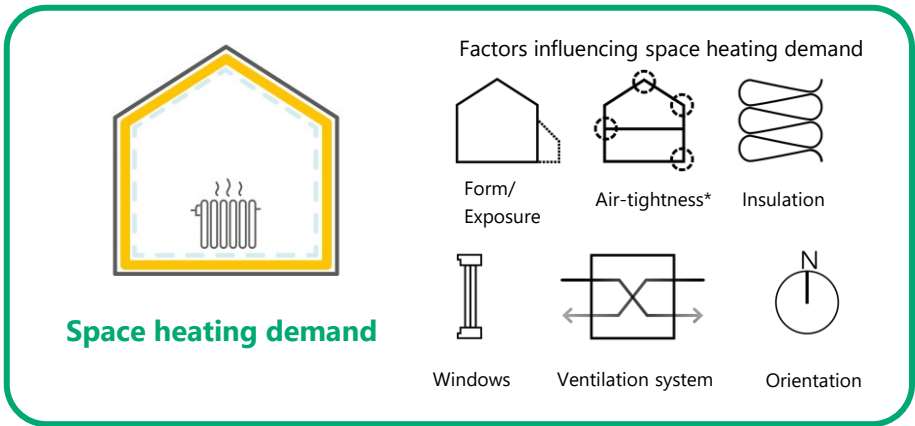
Intention

To encourage a fabric-first approach by reducing the need for heating through good form, orientation and high-performance building fabric. By incentivising measures such as compact building form, appropriate solar orientation, improved insulation, reduced thermal bridging, enhanced airtightness and high-performance glazing, SHD helps deliver buildings that are inherently energy efficient and comfortable, regardless of the heating system installed.

Proposed requirement wording

- All residential flats should achieve a space heating demand of no more than 15 kWh/m²_{GIA}/yr, and single-family homes of no more than 20 kWh/m²_{GIA}/yr.
- All non-domestic buildings should achieve a space heating demand of no more than 15 kWh/m²_{GIA}/yr.

Space heating demand in all buildings should be demonstrated using predictive energy modelling.



Planning submission (RIBA Stage 2-3)	Description	• Space heating demand calculation demonstrated using predictive energy modelling by a suitably qualified professional.
	Format	• Energy strategy report, demonstrating that the limit has been met
Discharge of condition (RIBA Stage 6)	Description	• Confirmation by a suitably qualified professional that the development has been constructed as designed, including any design changes that could affect space heating demand.
	Format	• As-built energy strategy report

* Major residential developments are between 10 or more dwellings or a site area of 0.5 ha or more where the number of dwellings is unknown. Non-residential major development are of floorspace of 1,000 m² or more.

Policy recommendation | Requirement 1.3: Energy Use Intensity limits

Definition

Energy Use Intensity (EUI), is the measure of the total energy consumption of the building over a year (kWh/m²/yr). The EUI of a building covers all energy uses (regulated and unregulated): space heating, domestic hot water, ventilation, lighting, cooking and appliances. EV charging is excluded from the calculation.

Applies to

All new major* building applications and defined types**.

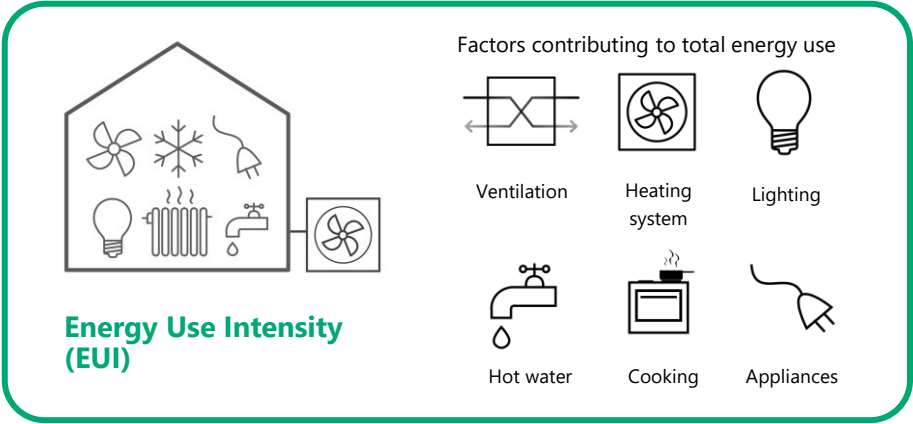
Intention

To encourage efficient building design by reducing overall operational energy demand and comply with the UK's climate change targets. Lower energy use reduces running costs for residents and building users, while the use of a measurable, performance-based metric enables post-construction verification.

Proposed requirement wording

- All dwellings must achieve an Energy Use Intensity (EUI) of no more than 35 kWh/m²_{GIA}/yr
- Non-domestic buildings must achieve an Energy Use Intensity (EUI) of no more than the following by building type or nearest equivalent:
 - Offices - 70 kWh/m²_{GIA}/yr
 - Light Industrial – 35 kWh/m²_{GIA}/yr

EUI in all buildings must be demonstrated using predictive energy modelling.



Planning submission (RIBA Stage 2-3)	Description	• Energy Use Intensity (EUI) calculation demonstrated using predictive energy modelling by a suitably qualified professional.
	Format	• Energy strategy report, demonstrating that the limit has been met
Discharge of condition (RIBA Stage 6)	Description	• Confirmation by a suitably qualified professional that the development has been constructed as designed, including any design changes that could affect energy use intensity.
	Format	• As-built energy strategy report

*Major residential developments are between 10 or more dwellings or a site area of 0.5 ha or more where the number of dwellings is unknown. Non-residential major development are of floorspace of 1,000 m² or more.

** Defined building types are all dwellings, offices and light industrial units.

Policy recommendation | Requirement 1.4: On-site renewable energy generation

Applies to

All new major* building applications.

Intention

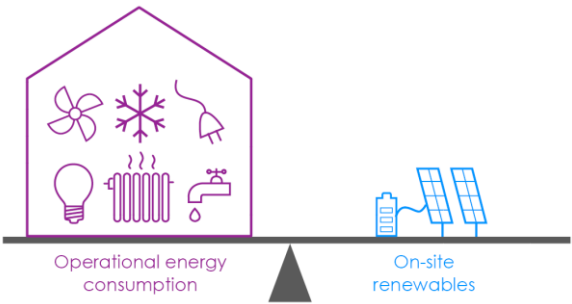
To encourage the integration of renewable and low-carbon energy technologies into new development, reducing reliance on fossil fuels and supporting the transition to a Net Zero energy system. By promoting on-site renewable energy generation where feasible, the policy aims to reduce operational carbon emissions, improve energy resilience, and contribute to a more sustainable and secure local energy supply.

Proposed requirement wording

- Renewable energy must be generated on-site for all new developments.
- The amount of energy generated in a year must match or exceed the predicted annual energy use of the building, i.e. Renewable energy generation (kWh/m²/yr) = or > predicted annual energy use (kWh/m²/yr).

*When this is not technically possible and suitably justified, the applicant should demonstrate that renewable energy has been maximised on site in the energy strategy report.

** Major residential developments are between 10 or more dwellings or a site area of 0.5 ha or more where the number of dwellings is unknown. Non-residential major development are of floorspace of 1,000 m² or more.*



Energy balance

The amount of renewable energy generated in a year should match or exceed the EUI

Planning submission (RIBA Stage 2-3)	Description	• Annual renewable energy generation intensity (kWh/m²/year) and comparison to the EUI of the proposed development. Roof layout drawings should also be provided to demonstrate that renewable energy generation has been maximised
	Format	• Energy strategy report
Discharge of condition (RIBA Stage 6)	Description	• Confirmation that renewable energy generation has been installed as designed, including any design changes that could affect renewable generation yield by a suitably qualified professional.
	Format	• As-built energy strategy report

Policy recommendation | Requirement 1.5: Lean Building Design and Material Efficiency

Applies to

All new building applications and types.

Intention

To encourage applicants to reduce resource use by creating a building that is efficient in its material use, form and design. The design should seek to balance the requirements for meeting net zero operational carbon and low as possible upfront embodied carbon.

Proposed requirement wording

- All new buildings and developments should demonstrate that upfront embodied carbon has been considered and reduced where possible through good design and material efficiency. As part of the planning application applicants must submit a summary of the efforts made to reduce upfront embodied carbon. This includes:
 - A summary of the efforts made to design a lean, low carbon structure and building design. This will take into account efficiency of material use as well as types of material used. Applicants should justify where large volumes of material are proposed to be used due to specific design features (such as basements, podiums, large cantilevers).
 - An elemental analysis of the upfront embodied carbon (kgCO₂e/m²) associated with two external wall options and two structural options. Include justification for the selected wall and structure type.
 - A summary of any steps taken to design for and drive a circular economy in alignment with the waste and minerals plan.

Planning Submission (RIBA Stage 2-3)	Description	• Description of efforts made on the building design, material efficiency and material selection, with form factor of buildings declared, two wall types and two structure types analysed and compared with a declaration of which one was chosen and why.
	Format	• Report and/or mark-up of drawings and diagram.

Policy recommendation | Requirement 1.6: Reporting Whole Life Carbon

Applies to

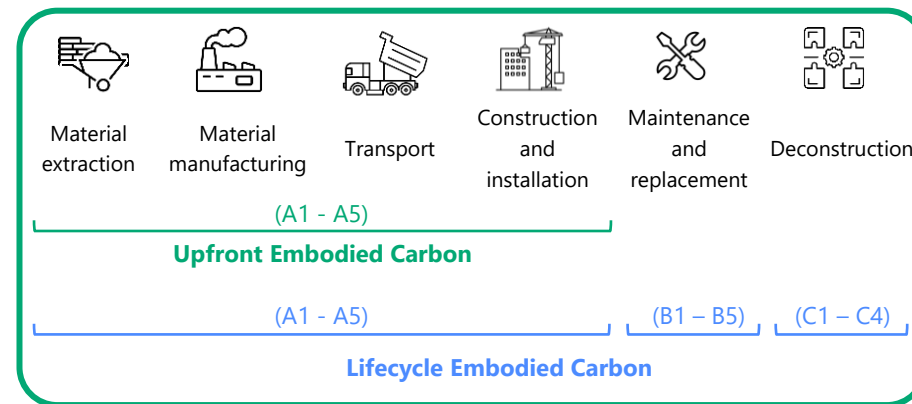
All new large-major* building applications of all types.

Intention

To encourage applicants to measure whole life carbon (WLC) at RIBA stages 2/3 and 6 to demonstrate improvements and help inform future reporting for policy.

Proposed requirement wording

- Large-major new developments should:
 - Calculate and report against life cycle stages A-C (including B6/B7) by a suitably competent built environment professional carried out in line with RICS WLCA PS v2 2023**.
- Large-major new developments should also report on the following by a built environment professional:
 - List the top five materials (i.e. brick, concrete, tile) by weight and by lifecycle embodied carbon emissions (A-C, excluding B6-B7).
 - List the expected replacement cycle lengths for the top five highest embodied carbon materials.
 - To consider how the highest embodied carbon materials will be treated at the end of life, provide circular economy metrics for the top five highest lifecycle embodied carbon materials reported (% recycled content/ designed for re-use/ recycling/ disassembly).



Planning Submission (RIBA Stage 2-3)	Description	• WLC calculation results carried out in line with RICS WLCA PS v2 2023**. • Reporting of top five highest emitting materials by weight and lifecycle embodied carbon, together with circular economy metrics.
	Format	• Use RICS WLCA PS v2 2023** reporting tables for reporting WLC emissions. • Require additional reporting in table format.
Discharge of condition (RIBA Stage 6)	Description	• Confirmation that measures proposed and described pre-planning were followed. Explanation to be provided if they were not, then why not.
	Format	• Re-submission of RICS WLCA PS v2 2023** reporting tables reporting WLC emissions. • Re-submission of additional reporting in table format.

*A minimum of 50 dwellings or a minimum of 5000m² of non-residential floor space.

** or any subsequent version of the standard in force at the time of assessment

Policy recommendation | Requirement 2.1: Retrofit First and Promoting A Circular Economy

Applies to

All retrofit building applications and types.

Intention

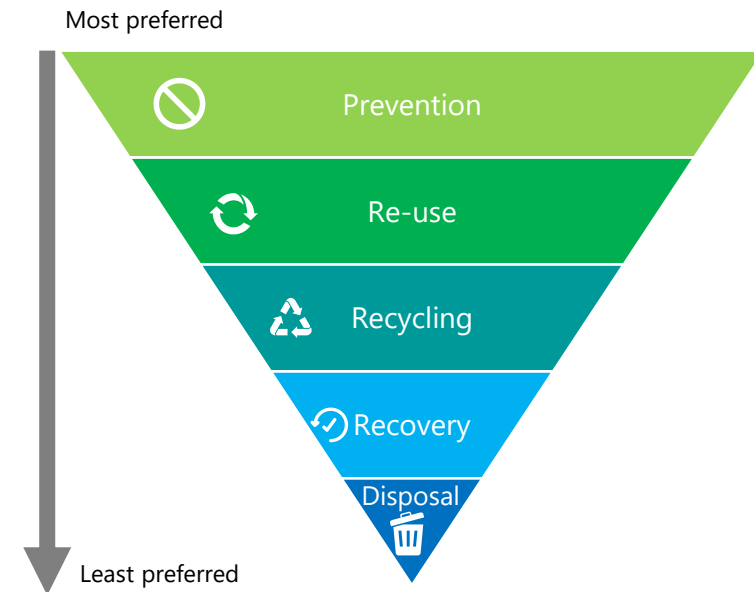
Developments prioritise retrofit over re-build, thoroughly exploring the potential for retaining and retrofitting existing buildings. Where partial or total demolition is proposed, full justification is required.

Proposed requirement wording

- Presumption against demolition and in favour of the re-use of existing buildings unless a full justification for demolition is provided. Justification where partial or total demolition and re-build is sought must include:
 - Explanation as to why the existing building cannot be retained, providing evidence to this effect. This should go beyond saying a building is 'low quality' or 'not fit for purpose' and can include an assessment of:
 - Structural condition - by means of a structural engineers report
 - Contamination (e.g. asbestos)
 - Visual/importance of the architecture in streetscape/location
 - Meeting needs of users – Is there bespoke operational requirements, or compliance with other legislation/regimes which could not be provided through the repurposing, adaptation and/or extension of the existing building(s)?
 - Service life/maintenance of fabric and systems – by means of an architectural and building services report.
 - The purpose of the new building and whether this is a change of use.
 - How much demolition is proposed?
 - Percentage of envelope and structure to be retained?
 - Justification of partial or total demolition by building layer (skin/shell, foundations/structure/frame, building services, and space plan/interior).

- For large-scale new and retrofit developments*, if the existing building on-site is considered for demolition, a material analysis of the existing building should be carried out and include recommendations for re-use of building materials in a pre-demolition audit

Planning Submission (RIBA Stage 2-3)	Description	• Description of retrofit measures and level of building retention on-site. Full justification for total or partial demolition.
	Format	• Report by suitably qualified professional showing level of building retention, retrofit measures, and/or full justification for any demolition.



*A minimum of 50 dwellings or a minimum of 5000m² of non-residential floor space.

07 Technical Feasibility

Predictive Energy Modelling | Overview

Predictive energy modelling using PHPP software was undertaken for the five domestic and two non-domestic typologies, to estimate space heating demand and the total energy use (EUI) for the proposed Net Zero scenario. The fabric and system specifications modelled are listed in Appendix A. The five domestic typologies represent a range of building forms and sizes as dwelling density can have an impact on energy efficiency and renewable energy generation. The typologies selected were based on typical archetypes and what is expected to come forward in Hastings over the next local plan periods.

Residential Typologies

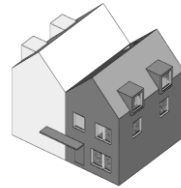
1. Detached House

2 storeys – 1 Unit
142 m²



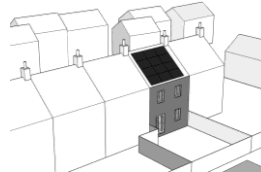
2. Semi-detached house

2 storeys – 1 Unit
93 m²



3. Terrace House

2 storeys – 1 Unit
93 m²



4. Block of Flats – Mid-Rise

8 storeys – 35 Units
93 m²



5. Block of Flats – High-Rise

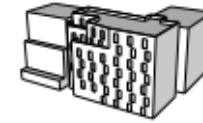
16 storeys – 70 Units
93 m²



Non-Residential Typologies

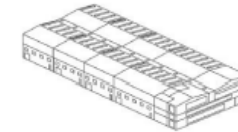
1. Office

7 storeys
4,000 m²



2. Light Industrial

2 storeys
9,000 m²



Predictive Energy Modelling | Space Heating Demand (kWh/m²/year) - Domestic

Requirement 1.2 of the Net Zero policy requires all residential flats to achieve a space heating demand of no more than **15 kWh/m²/year**, and single family homes of no more than **20 kWh/m²/year**

Technical Feasibility

Predictive energy modelling using PHPP software was undertaken for the five domestic typologies, using different fabric and systems specifications, which are listed in Appendix 1.

The space heating demand results are shown on *Figure 7.1* with the proposed policy limit.

Conclusion

The modelling demonstrates that the proposed Net Zero Policy Requirement 1.2 is technically feasible across a range of residential typologies. All apartment typologies achieve a space heating demand of less than 15 kWh/m²/year, while all single family home typologies achieve less than 20 kWh/m²/year.

The high-rise apartment block performs particularly well, achieving a space heating demand of 8.3 kWh/m²/year. This is largely attributable to its compact form factor, indicating that this typology can meet the space heating demand target with relative ease and may therefore require less stringent fabric specifications in practice. Similarly, the terraced and semi-detached houses achieve space heating demands of 13.3 kWh/m²/year and 14.8 kWh/m²/year respectively, demonstrating that lower-density housing can also meet the more ambitious 15 kWh/m²/year threshold through appropriate fabric specification and design. Detached houses show the highest heating demand at 19.3 kWh/m²/year, owing to their greater exposed surface area, but still comfortably meet the proposed 20 kWh/m²/year requirement.

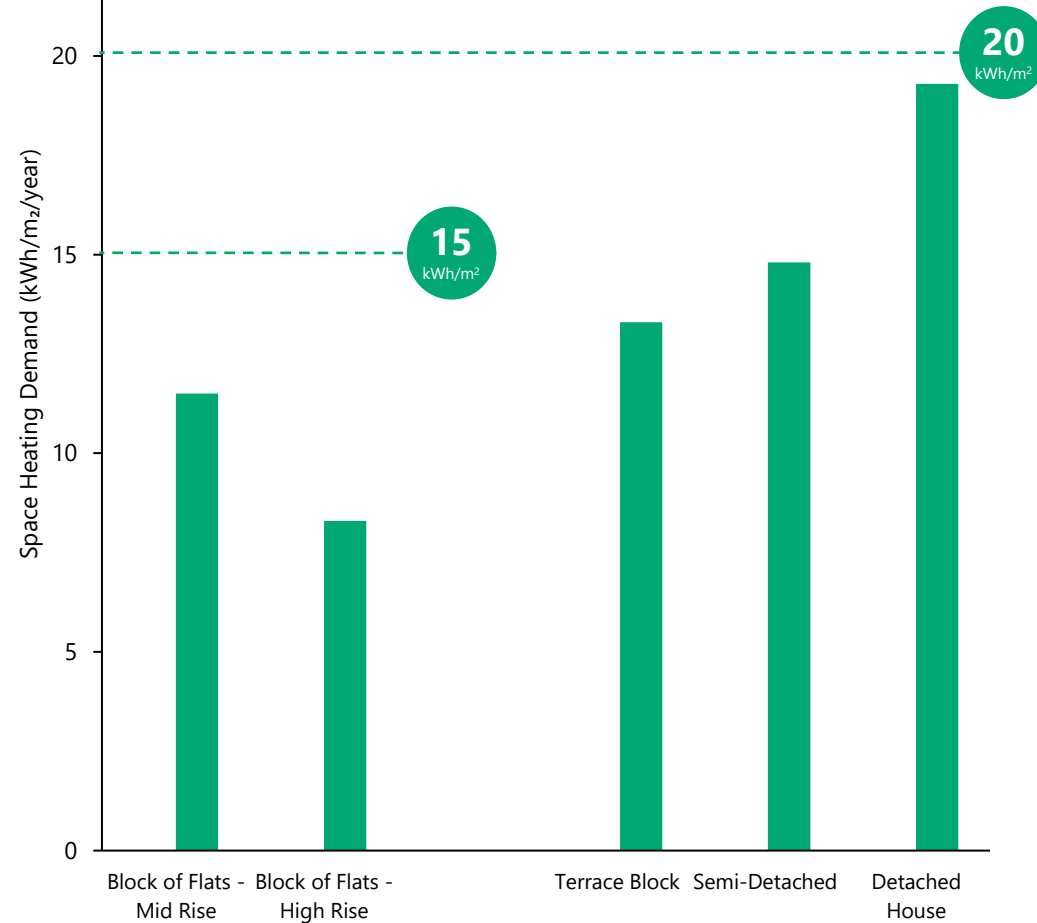


Figure 7.1: Space heating demand results from PHPP modelling of all the domestic typologies

Predictive Energy Modelling | Space Heating Demand (kWh/m²/year) – Non-Domestic

Requirement 1.2 of the Net Zero policy requires all non-domestic buildings to achieve a space heating demand of no more than **15 kWh/m²/year**.

Technical Feasibility

Predictive energy modelling using IESVE software following the CIBSE TM54 methodology was undertaken for the two non-domestic typologies, using different fabric and systems specifications, which are listed in Appendix A.

The space heating demand results are shown on *Figure 7.2* with the proposed policy limit.

Conclusion

The modelling demonstrates that the proposed Net Zero Policy Requirement 1.2 is technically feasible across both non-domestic typologies, as both typologies achieve a space heating demand of less than 15 kWh/m²/year.

Whilst the modelled office and industrial buildings achieve lower heating demands of approximately 8–11 kWh/m²/year, it is not considered appropriate to adopt a more stringent policy requirement. A target of 15 kWh/m²/year therefore represents a robust but proportionate standard. It is sufficiently ambitious to require high levels of fabric performance, airtightness and efficient building services, while remaining applicable across a wide range of non-domestic building typologies. The modelling indicates that well-designed office and industrial buildings can comfortably achieve this threshold, providing confidence that the target is both technically achievable and flexible enough to accommodate the diversity of future commercial development.

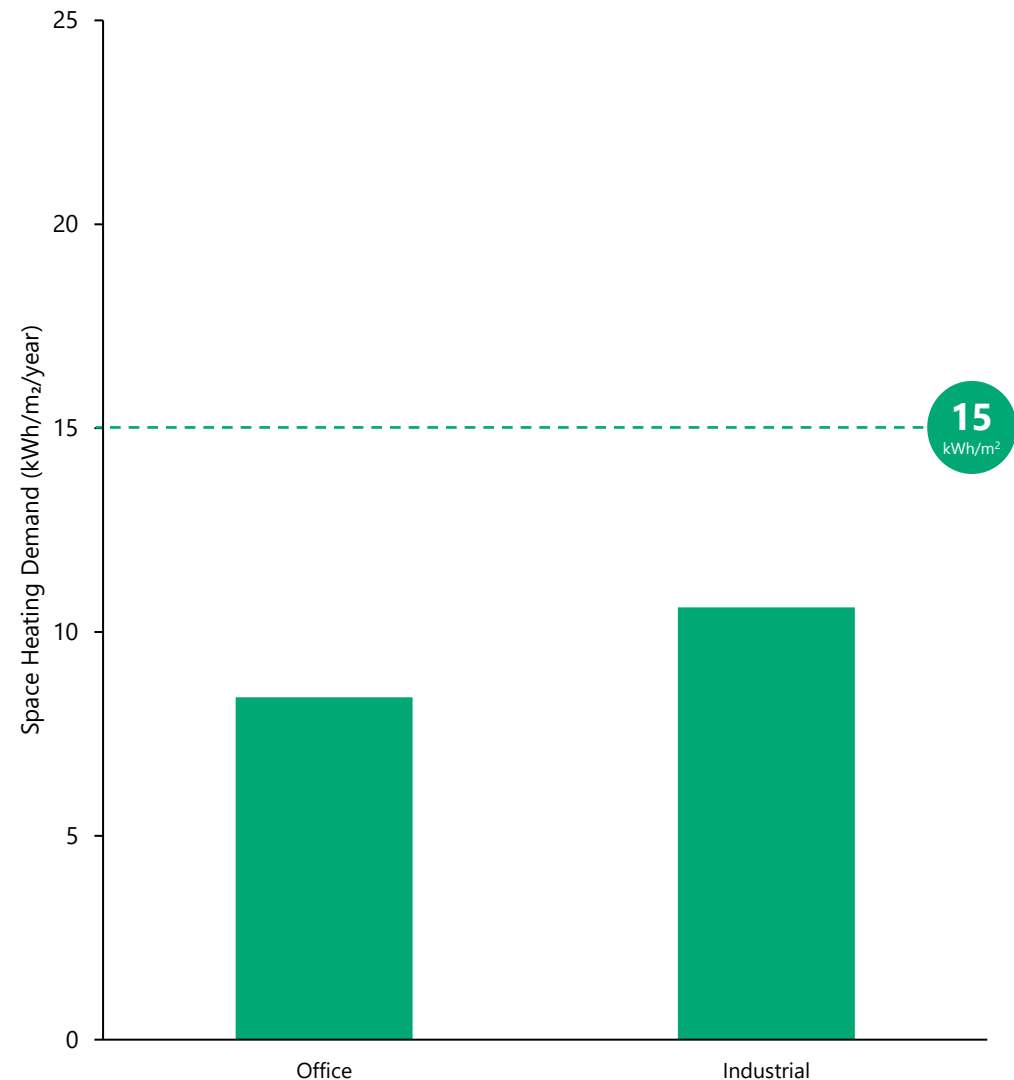


Figure 7.2: Space heating demand results from predictive energy modelling of the non-domestic typologies

Predictive Energy Modelling | Energy Use Intensity (kWh/m²/year) – Domestic

Requirement 1.3 of the Net Zero policy requires all dwellings, to achieve an energy use intensity of no more than **35 kWh/m²/year**.

Technical Feasibility

Predictive energy modelling using PHPP software was undertaken for the five domestic typologies, using different fabric and systems specifications, which are listed in Appendix A.

The energy use intensity results are shown on *Figure 7.3* with the proposed policy limit of 35 kWh/m²/year.

Conclusion

All dwellings achieve an energy use intensity of no more than 35 kWh/m²/year, demonstrating that the proposed Net Zero policy requirement 1.3 is technically feasible.

The small variation in energy use intensity between the residential typologies reflects both the use of standardised PHPP assumptions and the consistency in design specifications. Standardised PHPP assumptions have been used for internal gains to enable a consistent comparison of building performance by minimising the influence of occupant behaviour. Consequently, the remaining variation in EUI is primarily attributable to differences in building form, particularly the surface area-to-volume ratio and associated heat losses. The lower EUI achieved by the apartment blocks reflects their more compact form and reduced external envelope area, whereas the detached, semi-detached and terraced dwellings exhibit marginally higher EUIs due to their greater exposed façade area.

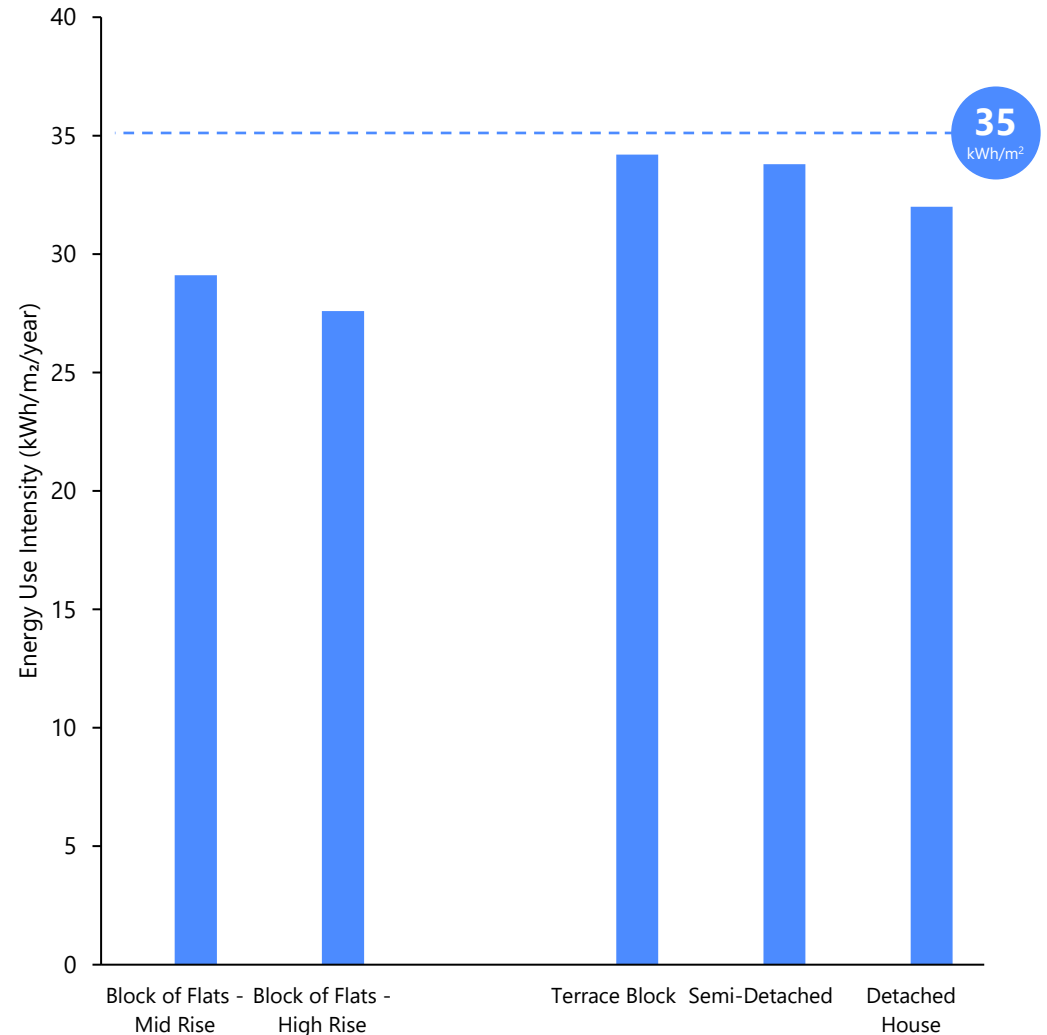


Figure 7.3: Energy use intensity results from PHPP modelling of all the domestic typologies

Predictive Energy Modelling | Energy Use Intensity (kWh/m²/year) – Non-Domestic

Requirement 1.3 of the Net Zero policy requires office typologies to achieve an energy use intensity of no more than **70 kWh/m²/year**, and light industrial unit typologies to achieve an energy use intensity of no more than **35 kWh/m²/year**.

Technical Feasibility

Predictive energy modelling using IESVE software following the CIBSE TM54 methodology was undertaken for the two non-domestic typologies, using different fabric and systems specifications, which are listed in Appendix A.

The energy use intensity results are shown on *Figure 7.4* with the proposed policy limit of 70 and 35 kWh/m²/year for the office and industrial typology respectively.

Conclusion

The non-domestic typologies achieve an energy use intensity of no more than 70 and 35 kWh/m²/year for the office and light industrial unit respectively, demonstrating that the proposed Net Zero policy requirement 1.3 is technically feasible.

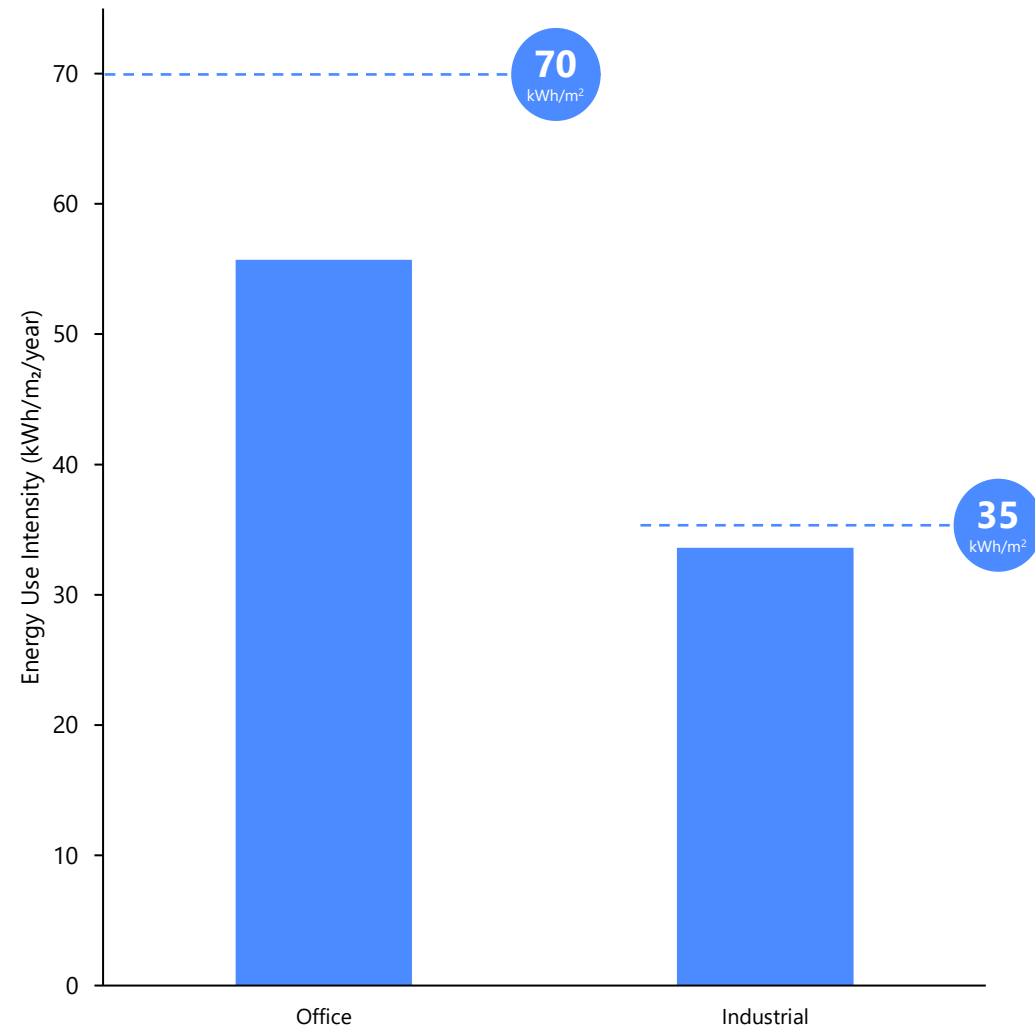


Figure 7.4: Energy use intensity results from predictive energy modelling of the non-domestic typologies

08 Capital and Running Costs

Introduction to Cost Analysis

The next step is to demonstrate whether the policies are financially viable. Capital cost analysis was undertaken by Currie & Brown to benchmark the likely capital cost for the typologies under the modelled specifications for complying with the net zero policy principles individually for each typology.

Costing approach

In addition to component level cost data for the areas of the building affected by energy / carbon standards, the cost analysis also includes provision for other cost items that are unchanged by energy performance, for example kitchens, roof tiles, electrical wiring, etc.

The uplift costs associated with meeting the net zero specification in comparison to a building constructed to Future Homes/Building Standard (Part L 2026) were estimated based on Currie & Brown's internal database of project costs sourced from internal databases including extensive data from live projects.

The costs are based on Q2 2026 prices and reflect a Hastings cost base.

Costs were developed for each affected element to identify the variance in price between the baseline and the enhanced specifications. Those elements that are not materially affected by the energy efficiency / low carbon technology options, e.g., substructure, roof coverings, kitchen and bathrooms, etc, were not costed in detail. Instead, these costs were incorporated within the 'balance of construction' cost estimated by reference to a typical whole building construction cost per m² for the building type in question. By combining the detailed component cost data and the allowances for other necessary items, the total build cost is estimated for the Part L 2026 standard and for the net zero carbon option together with an estimate of the percentage change in cost between each specification.

Calculation of the baseline build costs

The assumed baseline build cost for a Part L 2026 policy compliant scenario. This scenario uses the Part L 2026 notional building specification and does not look to surpass demands of current policy. A benchmark £/m² cost is estimated for each building type based on cost data from BCIS from the period 2021-2026 adjusted for the Hastings location and in Q2 2026 prices. Costs for houses were taken as the mean of the cost range for estate housing. Mid-rise flat costs were based on BICS rates for flats 3-5 storeys with High-rise flat costs being based on costs for blocks of 6 or more storeys.

It was assumed that most of the cost data for homes completed from 2022 to Q2 2026 would typically reflect construction to a Part L 2013 standard, to create a baseline consistent with the Part L2021 standard (introduced in June 2022) an additional £48-55 m² was added to the cost of houses and an allowance of £25m² added to the cost of flats. These cost allowances are based on allowances for enhanced fabric specifications, addition of waste-water heat recovery systems and PV panels as required in Part L 2021.

Capital Cost Modelling | Domestic Typologies

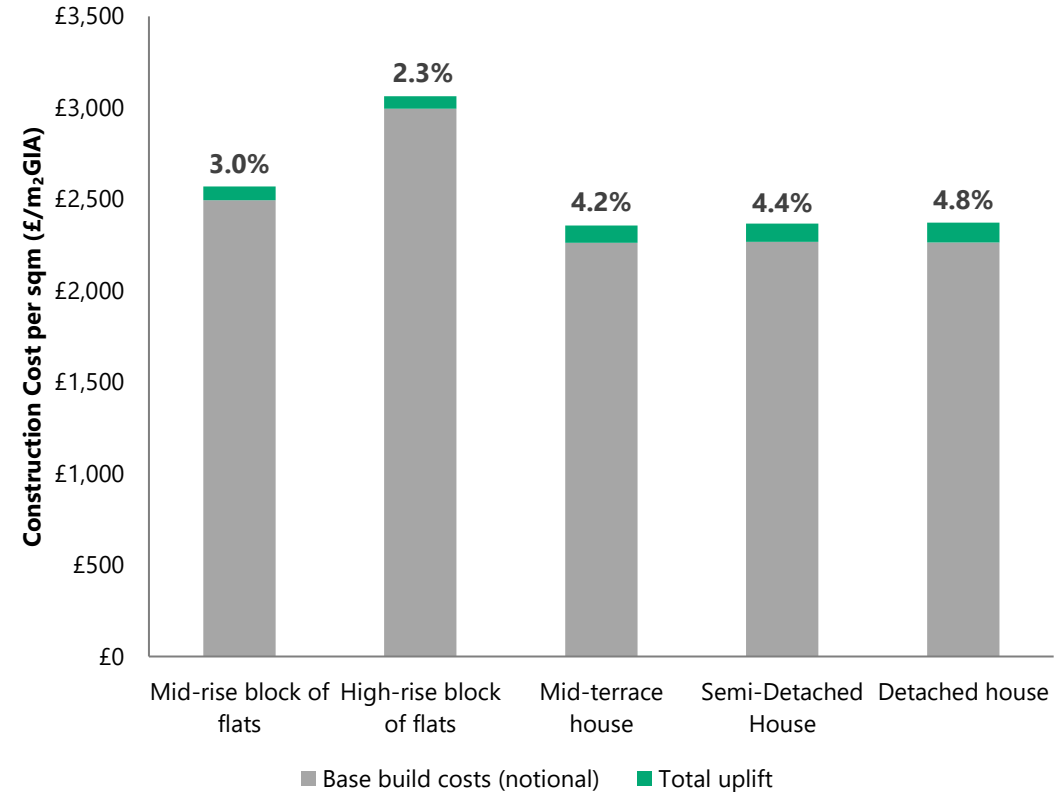
Cost Uplift

To meet the Net Zero policy energy use intensity and space heating demand limits, the total capital cost uplift over Part L 2026 Building Regulations (does not include running cost) ranges between **2.3% -4.8%**.

The graph outlines the total capital cost for the domestic typologies, and the percentage uplift compared to the Baseline building (Part L 2026 Notional Building), further information on the specifications modelled can be found in Appendix A. The table gives the cost uplift breakdown for fabric, systems and PV panels.

Cost uplifts are lower for mid and high rise flats and higher for housing. For housing the majority of the cost uplift is associated with fabric enhancements with relatively little impact on services costs (mainly installation of MVHR systems) and no requirement for additional PV in comparison to the Future Homes Standard.

For flats the additional costs are relatively evenly split between fabric and services costs together with a small increment for a larger PV array compared to that required by the Future Homes Standard. Fabric improvement costs are generally lower for flats due to the reduced external wall area relative to houses and also because the target U-Value for the external wall is 0.15 W/m²K in comparison to 0.12W/m²K for houses.



Cost Uplift per m ² GIA	Block of Flats Mid Rise	Block of Flats High Rise	Mid-Terrace House	Semi-Detached House	Detached House
Fabric	£35	£32	£75	£87	£94
Building Services	£33	£32	£19	£13	£15
Renewables	£8	£4	£0	£0	£0
Total (£/m²)*	£76	£68	£94	£100	£108
Total per home	£7,429	£6,829	£8,742	£9,315	£11,776

* totals do not sum exactly due to rounding

Figure 8.1: Domestic typologies capital cost per square meter and cost uplift % of Net Zero policy over Building Regulations Part L 2026 Notional Building.

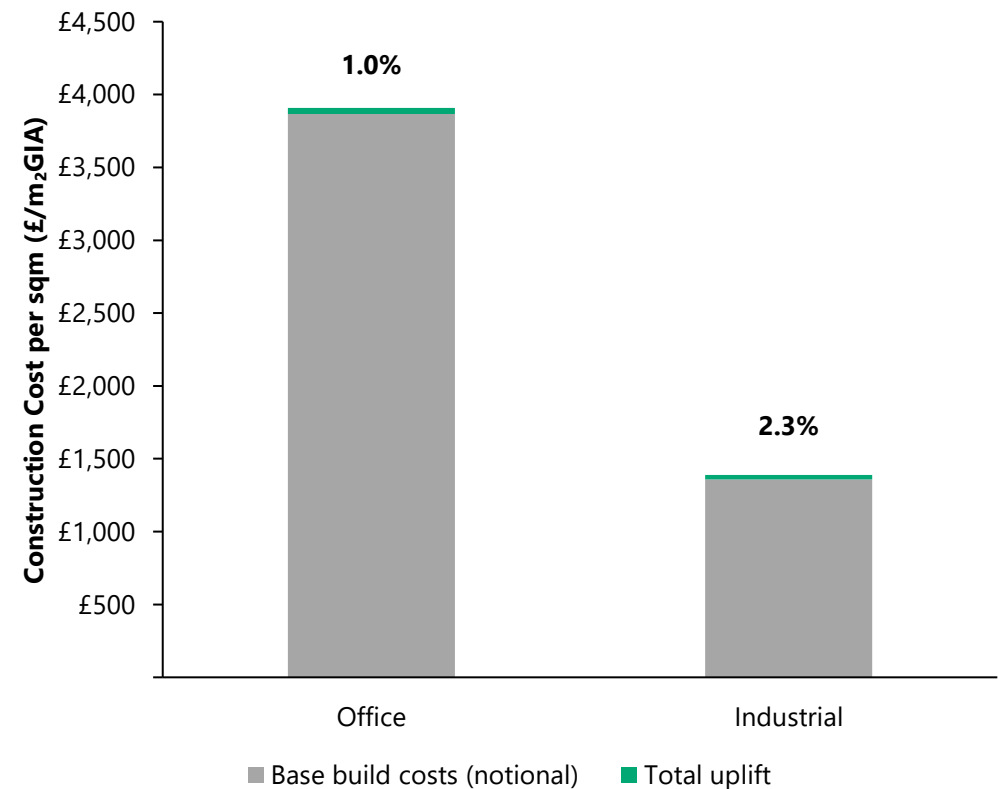
Capital Cost Modelling | Non-Domestic Typologies

Cost Uplift

To meet the Net Zero policy energy use intensity and space heating demand limits, the total capital cost uplift over Part L 2026 Building Regulations (does not include running cost) ranges between **1.0% - 2.3%**.

The graph outlines the total capital cost for the non-domestic typologies, and the percentage uplift compared to the Baseline building (Part L 2026 Notional Building), further information on the specifications modelled can be found in Appendix A. The table gives the cost uplift breakdown for fabric, systems and PV panels.

In absolute terms the cost uplifts are similar at £40 and £31 per m² respectively, however the much higher total build cost of the office means these costs are a smaller proportion of the overall budget. For both non-residential buildings, the cost uplift is almost entirely attributable to fabric enhancements, with a small saving in building services costs resulting from reduced plant sizes enabled by improved thermal efficiency.



Cost Uplift per m ² GIA	Office	Industrial
Fabric	£40	£37
Building Services	-£6	-£7
Renewables	£6	£1
Total (£/m ²)*	£40	£31

Figure 8.2: Non-Domestic typologies capital cost per square meter and cost uplift % of Net Zero policy over Building Regulations Part L 2026 Notional Building.

Running Cost Modelling | Domestic Typologies

The annual running costs for homes built to different specifications were calculated based on the projected energy consumption and levels of renewable energy generation for each home. The self-consumption of energy generated from onsite PV is estimated as the average of three occupancy scenarios as defined by the Microgeneration Certification Scheme. This equates to levels of self-consumption ranging between 12 and 65% depending on scenario and house type.

Unit costs for energy were taken as being equivalent to the current (June 2026) levels of the Energy Price Cap as determined by Ofgem, this equals a unit rate of 25.3p per kWh and a daily standing charge of 54.8p.

Revenue from export of surplus energy to the grid was valued at 10.8p per kWh. Occupancy scenarios defined as: Home all day, In half the day, and Out during the day.

Analysis shows that there is a net saving in running cost for each home type ranging from 16% (High-rise flats) to 52% (Detached house). Relative savings are larger in housing in comparison to flats, largely due to the more significant reduction in EUI for these property types when built to the net zero carbon specification. For example, the adoption of the net zero carbon specification for the detached house results in an EUI saving of over 11kWh per m² whereas for the high rise flats the saving is less than 2kWh per m².

Annual Running costs with PV	Baseline specification	Net Zero Carbon specification	Saving from NZC
Detached	£698	£334	↓£364
Semi-detached	£437	£234	↓£203
Mid-terrace	£532	£360	↓£172
Mid-rise block of flats	£656	£459	↓£198
High-rise block of flats	£662	£553	↓£109

Figure 8.3: Running costs – Tariff set at Price Cap level for June 2026

09 Appendix A

Energy modelling specifications | Domestic

The following table summarises the different fabric and systems specifications modelled for each domestic typology. All specifications represent an improvement over the minimum requirements of the Building Regulations.

Domestic Developments		Unit	Block of Flats Mid Rise	Block of Flats High Rise	Mid-Terrace House	Semi-Detached House	Detached House
Space Heating Demand		kWh/m ² /year	11.5	8.3	13.3	14.8	19.3
Energy Use Intensity		kWh/m ² /year	29.1	27.6	34.2	33.8	32
Form Factor		-	1.24	0.94	2.2	2.71	3.04
Window Proportions	N		29%	31%	31%	1%	9%
	E		31%	34%	0%	20%	10%
	S		20%	23%	22%	8%	28%
	W		36%	39%	0%	18%	16%
PHPP Climate Data Set		-	GB0003a-London Gatwick (closest location according to PHPP climate dataset)				
Fabric	Floor U-value (SAP)	W/m ² K	0.12	0.12	0.1	0.1	0.1
	Floor U-value (PHPP)	W/m ² K	0.162	1.62	0.13	0.114	0.116
	External Wall U-value	W/m ² K	0.15	0.15	0.12	0.12	0.12
	Roof U-value	W/m ² K	0.10	0.10	0.10	0.10	0.10
	Windows average U-value	W/m ² K	1.1	1.1	1	1	1
	Windows G-value	W/m ² K	0.5	0.5	0.5	0.5	0.5
	External doors U-value	W/m ² K	1	1	1	1	1
	Thermal bridging (PHPP)	kWh/m ² /yr	4	4	4	2	1
	Air permeability	m ³ /m ² h	2	2	0.6	0.6	0.6
Systems	MVHR heat recovery efficiency	%	90%	90%	90%	90%	90%
	MVHR specific fan power (SAP)	W/l/s	0.85	0.85	0.85	0.85	0.85
	MVHR specific fan power (PHPP)	Wh/m ³	0.3	0.3	0.3	0.3	0.3
	Average duct length	m	2	2	2	2	2
	External duct insulation	mm	25	25	25	25	25
	Duct insulation conductivity	W/mK	0.04	0.04	0.04	0.04	0.04
	Space heating system	-	Communal ASHP	Communal ASHP	Individual ASHP	Individual ASHP	Individual ASHP
	Space heating efficiency	%	280%	280%	280%	280%	280%
	DHW system	-	Instantaneous through HIU	Instantaneous through HIU	Individual ASHP	Individual ASHP	Individual ASHP
	DHW efficiency	%	260%	260%	260%	260%	260%
	Lighting efficiency	Lm/W	120	120	120	120	120
	Photovoltaics	kWp	63.9	63.9	4.9	7.45	5.6

Energy modelling specifications | Non-Domestic

The following table summarises the different fabric and systems specifications modelled for each non-domestic typology. All specifications represent an improvement over the minimum requirements of the Building Regulations.

Non-Domestic Developments		Unit	Office	Industrial
Space Heating Demand		kWh/m ² /year	8.4	10.6
Energy Use Intensity		kWh/m ² /year	55.7	33.6
PHPP Climate Data Set		-	London Gatwick	
Fabric	Floor U-value	W/m ² K	0.1	0.15
	External Wall U-value	W/m ² K	0.15	0.18
	Roof U-value	W/m ² K	0.1	0.13
	Windows average U-value	W/m ² K	1.1	1.4 - Window 1.6 - Rooflight
	Windows G-value	W/m ² K	0.4	0.4 - Window 0.5 - Rooflight
	External doors U-value	W/m ² K	1.5	1.5 - Pedestrian 1.3 - Vehicle
	Thermal bridging (PHPP)	kWh/m ² /yr	3%	3%
	Air permeability	m ³ /m ² h	2	3
Systems	MVHR heat recovery efficiency	%	90%	80%
	MVHR specific fan power	W/l/s	1.4 (0.3 terminal)	1.4 (0.2 terminal)
	Space heating system	-	FCU fed by VRF	Four pipe chiller
	Space heating efficiency	%	350%	300%
	DHW system	-	DE to toilets 400L hot water store for showers fed by heat pump	DE
	DHW efficiency	%	300%	100%
	Cooling system	-	FCU fed by VRF	Four pipe chiller
	Cooling efficiency	%	EER - 3.5 SEER - 5.0	EER - 3.0 SEER - 4.0
	Lighting efficiency	Lm/W	115	110
	Photovoltaics	kWp	83.1	306.98

