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SHAPING A SUSTAINABLE FUTURE

UK Building Regulations Updates

Approved Documents:

Part F, L, O, and S

What has changed and how will this impact your project?

Contents

Changes to Building Regulations

Part F, L, O & S

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What are Building Regulations?

Why are they important?

The UK Building Regulations are a set of standards to be adhered to by those involved in the design, construction, and alterations to every new and existing building in the United Kingdom.

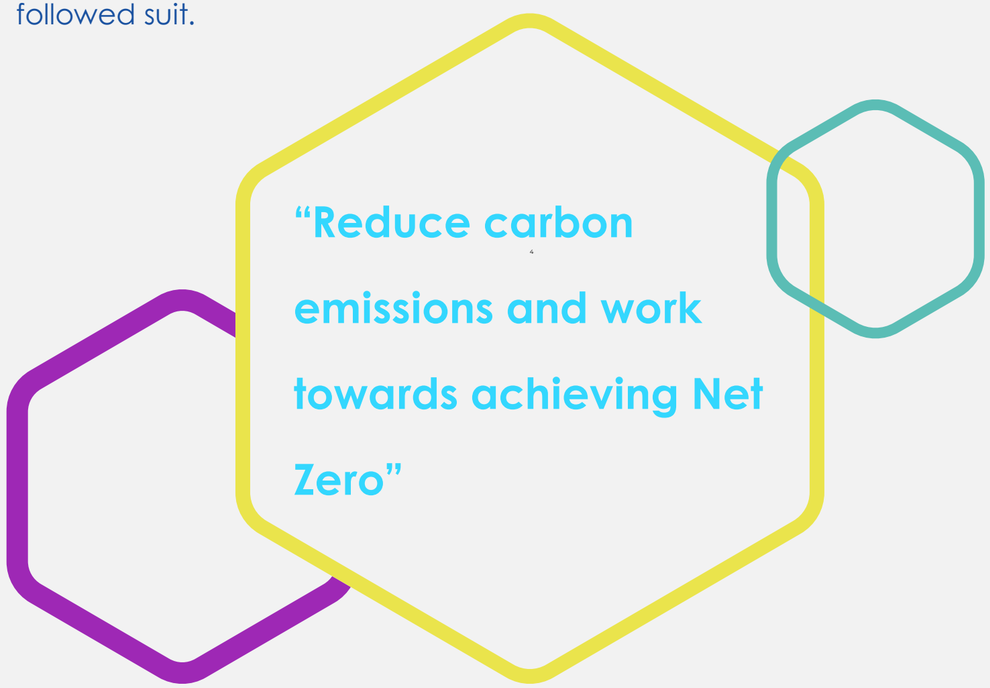
These standards are regularly revised and updated to ensure that all buildings are regulated, in the key areas of concen, and performance standards align with UK Government goals and objectives.

Ensure that all buildings are regulated in the key areas of concern, and performance standards align with UK Government goals.

Why the changes?

Increasing awareness of the impact of climate change (and the realisation of the changes required to our lifestyle and industry required to tackle this challenge) has led to the necessity for the world to work together to reduce carbon . In line with this, the UK government has set the bold target of achieving Net Zero Carbon emissions by 2050.

Many sectors have made, or are currently planning adaptations to their practices and standards to achieve this target, and with buildings being one of the biggest single contributors to heightened carbon emissions, the building industry has followed suit.



Approximately 40% of carbon emissions in the UK are produced from buildings. This is due to the UK having the oldest, and poorest performing, housing in Europe, with only 15% of UK housing being built post 1990.

In efforts to achieve the UK government’s emission’s target, several changes have been, and will continue to be made to the UK Building Regulations, with the aim of gradually reducing the emissions and energy use associated with building operation. These changes align with the general strategy implemented by the government for reducing carbon emissions and increasing energy efficiency in newly constructed residential and non-residential buildings.

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What are the key aims?

The most recent changes apply specifically to Approved Documents F and L, with new documentation released for Building Regulations Part O (Overheating) and S (Electric Vehicle Charging), all of which came into force on the 15th of June 2022. Te revised transitional agreements on the latest changes have prevented buildings being constructed to older regulations unless ‘significant work’ had been completed 1 year from the implementation date. Therefore, the instances of sites being currently constructed to the older version of the regulations is minimal

This document outlines the key changes that have been made to Building Regulations, the reasons behind these changes, as well as the key interaction and links between all parts.

- Reduce carbon emissions of residential and non-commercial buildings
- Improve means of ventilation, whilst limiting heat losses
- Increase the conservation of fuel and power
- Limit the potential of overheating in new builds
- Standardise infrastructure for the charging of electric vehicles

Key interactions between

Part L, F, O

Heat loss/emissions, ventilation, and overheating are highly linked with one another and, in a building context interact with each other constantly.

The updated regulations aim to achieve a careful balance through the provision of high levels of ventilation and therefore air quality, and low levels of heat loss, all whilst mitigating the ever increasing risk of overheating.

the ventilation systems employed on a development are now dependent on the air permeability proposed. This is to ensure each dwelling is supplied with the correct volume of fresh, outside air at all times. This now also impacts the overheating strategy of the site.

There is therefore more interplay between the differing regulations than perhaps there has been before.

"Buildings will need to be developed to be 'Zero Carbon ready'

The bigger picture

It has been over a decade since the last update to Building Regulations, with the last update being made in April 2013. As such, the industry has become comfortable in construction techniques, with methods to comply with the regulations now standardised. The latset update cut emissions of domestic properties by ~31% over 2013 regulations standards and, with these latest changes only being interim, further changes are coming down the line in quick succession. Consultation has been completed on the Future Homes Standard and this is coming into effect in 2025 - pushing the performance requirements further.

The Zero-Carbon Timeline

April 2006 – Full revision to Building Regulations with a -19% reduction in emissions

April 2010 – SAP and SBEM mandatory for compliance of Part L, not just an option.

April 2013 – Amendment to Building Regulations with a further -6% reduction in emissions.

April 2016 – net zero

June 2022 – Commitment for all new houses to be Net Zero cancelled by 2014 Housing Standards Review

Spring 2023 – Interim changes to Building Regulations come into effect. Further 31% emissions reduction.

2025 – Technical consultation of proposed specification for Future Homes Standard

2030 – FHS regulations come into effect via further changes to regulations. No gas appliances? Zero Carbon Ready?

Further changes resulting in zero emissions buildings? – net zero

With the information we do have, the Future homes Standard consists of a set of minimum performance standards referring to both design elements and technology.

U-values - especially for glazing -and air permeability are notable changes, with significant improvements in the performance standards proposed all round. The inclusion of electric only heating is also a key change, relying on the decarbonisation of the National Grid for future emissions savings.

The Future Homes Standards requirements are due to become a requirement of new building residential buildings from 2025 onwards.

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Approved document F

Means of ventilation

There are many key changes to be noted in Approved Document Part F. Firstly, it is important to note that Part F has now been split into two separate documents, namely:

- Volume 1: Dwellings
- Volume 2: Buildings other than Dwellings.

Volume 1 is to be consulted in relation to self-contained units, and Volume 2 is to be consulted in relation to rooms used for residential purposes and buildings that contain only rooms for residential purposes, for example student accommodation and care homes.

The main purpose of the Part F updates is to improve ventilation and avoid overheating in all new residential buildings to ensure that residents are safe, as well as reduce the risk of airborne viruses within new non-residential buildings.

“Ensure that residents are safe, as well as reduce the risk of airborne viruses”

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Main updates to Part F

1. Significant increase in minimum whole dwelling ‘trickle’ ventilation rates

2. Introduction of new terminology: less and highly airtight dwellings

3. Defines certain ventilation systems only suitable for highly airtight dwellings

4. Shared communal rooms – which may apply to multi-dwelling residential schemes – may require either natural ventilation openings equal to at least one fiftieth of the floor area, or if provided by mechanical means provides at least 0.5 l/s/ m2 (corridors or lift lobbies defined as shared communal areas)

5. Mechanical ventilation system must be commissioned in accordance with an approved procedure6. Relaxation of noise criteria in non-noise sensitive areas

7. Access provisions to fans can’t be disruptive to finishes

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Part F Volume 1

Dwellings

The updated guidance document highlights system-specific guidance which includes the following three systems:

1. Natural ventilation i.e., intermittent extract with background ventilators suitable for less airtight dwellings

2. Continuous operating mechanical extract suitable for all dwellings

3. Mechanical Ventilation with Heat Recovery (MVHR) suitable for all dwellings

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Types of ventilation systems

A once common arrangement included natural ventilation from trickle vents provided in windows with the use of intermittent extract fans in the wet rooms. This is now only suitable for less airtight dwellings, which are defined as those with a design air permeability of >5m3/ (h.m2) or as-built air permeability higher than 3m3/(h·m2) at 50Pa.

Although the new regulations still permit the use of such a system, new Part L is encouraging highly airtight dwellings with air infiltration values having a strong impact on the buildings modelled performance. Therefore the energy calculations performed under Part L will most likely show that a continuous operating mechanical ventilation system, ideally with the use of mechanical supply air to bedroom and living room via a heat recovery system, will considerably reduce CO2 emissions and aid compliance.

MVHR system ventilation rates

The following points are important to note in relation to Mechanical Ventilation with Heat Recovery (MVHR) system ventilation rates, according to the updated document:

- Minimum High ‘Boost’ Rate remain unchanged
- Whole dwelling ‘Trickle’ ventilation rates increase by approximately 30%

Heat recovery system, will considerably reduce CO2 emissions and aid compliance

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Noise limits

The following points are important to note in relation to noise limits, according to the updated document:

- Mechanical fan units should be sized so that the normal background ‘trickle’ rate is not overly noisy

There are no requirements stipulated to undertake noise testing, however, the noise conditions should not exceed the following under normal ‘trickle’ conditions, which are:

- 30dB L Aeq.T/NR35 in bedrooms & living rooms (same as previous document)
- 45dB L Aeq.T/NR40 in kitchens & bathrooms (previously 35dB)

Mechanical fan access

The following points are important to note in relation to access to mechanical fan units, according to the updated document:

- Reasonable access should be provided for maintaining ventilation systems
- Access should be provided to replace filters, fans, and coils
- Access points should be provided for cleaning ductwork
- Access should be provided for the general maintenance of the plant

Pollutant limits

Designs should minimise intake of air pollutants if:

- Pollutant levels exceed limits in table 2.1, determined though air quality assessment
- Dwellings located near significant local pollution, for example, road traffic, combustion plant, and exhausts from other buildings

"Designs should minimise intake of air pollutants"

Purge ventilation

Purge ventilation requirements remain unchanged and are summarised as follows:

- Purge ventilation is the intermittent removal of high concentrations of pollutants and water vapour and should be capable of extracting four air changes per hour per habitable room (bedroom & kitchen/living room) directly to outside

- Can be provided through one of the following:

    - Openings
    - Windows/doors or mechanical extract ventilation or potentially
    - A combination of both methods to provide a hybrid solution

Commissioning procedure

Contractors and commissioning engineers are no longer permitted to provide their own format of checklists to demonstrate commissioning procedures.

A set completion checklist and commissioning sheet has now been provided and is required to demonstrate compliance, which includes:

- Details of system, fan & installation/commissioning engineer
- Dwelling details, floor area, visual checklist & noise observations
- Commissioning equipment details & balanced flow rates

Part F Volume 2

Buildings other than dwellings

Ventilation for car parks

Ventilation of covered car parks remains unchanged with the requirements summarised as follows:

- Natural ventilation via openings of 1/20th of the floor area with 25% equivalent area on two opposing walls
- Mechanical ventilation systems to have permanent natural openings of 1/40th of floor area + supply/extract at a minimum of 3 Air Changes per Hour, and 6 Air Changes per Hour if the car park is a basement
- Where cars queue, there is a local rate of 10 Air Changes per Hour. This applies to commercial buildings such as shopping malls and does not apply to residential buildings such as apartment blocks

Ventilation of covered car parks remains unchanged

Approved Document L

Conservation of fuel and power

Part L plays the essential role in paving the way towards reduced emissions through the setting of performance, consumption and emissions standards.

It is thought that the 2025 future homes standard will be incorporated into Building Regulations too, with incremental changes proposed to put continual downward pressure on emissions.

Part L requires approximately a 31% decrease in CO2 emissions for dwellings and 27% for commercial buildings when compared to the previous version of the regulations.

Part L turns focus particularly towards adopting a fabric first approach, as well as the move towards low-carbon heating technologies such as Heat Pumps.

Carbon emissions

There has been a steady decline in carbon emissions associated with grid supplied electricity over the last 15 years.

There has been a notable decrease in the carbon emissions calculated during building modelling following the release of provisional SAP10 with a figure of 233kgCO2/kWh and this has further decreased with the finalisation of the Building Regulations standards implementation in 2001, with 136 kgCO2/kWh now used for consumed electricity.

The New Targets

Part L has outlined new targets that will need to be adhered to moving forward. It is important to note that:

- The Building Emission Rate (BER) or Dwelling Emission Rate (DER) must be better, or less than, the set Target Emission Rate (TER) - BER or DER < TER
- The Dwelling Fabric Energy Efficiency must be better or less than the set Target Fabric Energy Efficiency (TFEE), which was introduced in 2013. This applies to dwellings only.
- A third target has now been introduced in the 2021 regulations, which is the Target Primary Energy Rate (TPER), which stipulates that the Building Primary Energy Rate (BPER) or Dwelling Primary Energy Rate (DPER) must be better, or less than, the Target Primary Energy Rate (TPER). This gives a huge benefit to heat pumps due to Coefficient of Performance (COP).
- In a heat pump system, you may expect a COP of 3 i.e., for every one unit of electricity supplied to the heat pump, the heat generated for use will be 3 (300% efficient). If you compare this is to gas boiler systems, which are typically 90% efficient or direct electric heating at 100% efficient, you can see that performance and emissions are significantly improved through the use of a heat pump.

The New Targets

There are new elemental targets limiting U-Values and air tightness as summarised below.

For dwellings

Limiting (worst case) Performance Values

	Building Regulations 2013	Building Regulations 2021
Floors	0.25	0.18
Walls	0.30	0.26
Roof	0.20	0.16
Doors	2.00	1.6
Windows	2.00	1.6
Air permeability	10	8

For commercial buildings

Limiting (worst case) Performance Values

	Building Regulations 2013	Building Regulations 2021
Floors	0.25	0.18
Walls	0.35	0.26
Roof	0.25	0.18/0.16 (P/F)
Vehicle/Large doors	1.50	1.30
Pedestrian doors	2.20 (3.5 HU)	1.60 (3.0 high use)
Windows	2.20	1.60
Air permeability	10	8

"There are new elemental targets limiting U-Values and air tightness"

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The New Targets

The energy used by showers in dwellings is now requested in the Part L energy model. Quantity and efficiency of lighting in dwellings must now also be defined.

Emissions factors for district heating networks can now be refined to reflect the specifics of the system being connected to.

It is important to note that any proposed building modelled under Part L must out perform the notional building created in the modelling software. Therefore, even if you design to the aforementioned limiting values, your building may still fail to comply.

This is because the notional building automatically built within the Part L energy model assumes the parameters outlined below (The Notional Specification).

This is not to say you must follow these parameters. If your building utilises higher values or different strategies, then additional measures may need to be made elsewhere to compensate.

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Notional Specification - Dwellings

Element	U-Value
Floors	0.13
Walls	0.18
Party walls	0.00
Roof	0.11
Windows and roof lights	1.20
External doors	1.00

Element	Performance
Air permeability	5.0
Thermal bridging	Low Y value
Ventilation	Intermittent extract
Lighting	80 Lm/W
Heating and DHW	Gas. 89.5%. Zoned
Heat recovery	WWHRS on all showers
Showers	Max. 81/m on mains shower
PV	PV 40% of building footprint

0.20

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Notional Specification - Commercial

Element	U-Value
Floors	0.15
Walls	0.18
Roof lights	2.10
Roofs	0.15
Windows	1.40
External doors (large/high use)	1.30/1.90

Element	Performance
Air permeability	3/5 (side/top lit activities)
Thermal bridging	Default non-repeating thermal bridging is increasing from 10% to 25% of rated element U-Value
Ventilation	Intermittent extract
Lighting	95 Lm/W
Heating and DHW	Gas. 86%, HP:264%, DE:134%
Glazing	G-Value: 29% (down from 40%), LT: 60% (down from 73%)
Hot water	Secondary circulation loop and hot water storage is now accounted for
PV	PV allocated based on algorithm accounting for foundation area, conditioned area and number of floors.

Prior to the release of the revised Building regulations, significant research was undertaken to investigate the reasons for the persistent performance gap - the difference between the modelled and actual performance of buildings - which has been well recognised since the introduction of SAP to model buildings at the turn of the century.

The Performance Gap is the difference between the modelled and actual performance of a building.

The Performance Gap

This is usually caused by:

- Occupant Behaviour, i.e., leaving the heating on with the windows open, turning ventilation off, unclear controls
- Defects or poor build quality, i.e., Insulation is not installed correctly or as designed, different heating appliances & controls
- Incorrect modelling

The new regulations have been updated to address each point of the Performance Gap:

Occupant Behaviour:

A Home User Guide is to be handed over to the first occupant. This manual should contain non-technical information on the building services, their operation and maintenance requirements. The document should also contain the EPC, O&M guidance for specific equipment within the home, and photographs of the property during the construction period. Further information on the contents of this document can be found within Approved Document L, Section 9.

Construction and Design

- Accredited Construction Details have now been disbanded due to them being approximately 20 years old with no oversite
- Default Y Value increase from 0.150 to 0.200
- Bridges need to be modelled or use pre-modelled details such as LABC
- Air pressure testing is no longer permitted to typical dwelling types – all units must now be tested individually, and certification provided.

Reporting Requirements

A Building Regulations England Part L (BREL) Compliance Report is now required as an added measure to ensure that the quality and standards of a building are upheld. This should include photographic evidence of every dwelling at key stages of the project*.

- Anyone can take pictures, but these must be made available to the SAP Assessor and Building Inspector before final sign off
- Pictures need to be dated and geo-located
- Pictures should include foundations, ground floor details, wall build-ups and insulation, roofs, openings and window installations, air tightness layers, etc.

“Air pressure testing is no longer permitted to typical dwelling types”

Additional Requirements

There is now a requirement for an energy forecast for non- domestic buildings over 1000m2 (CIBSE TM54 Assessment)
This forecast is expected to be detailed with all metered energy uses and unregulated loads to determine the ‘actual energy use of the building,’ broken down by fuel type.

New wet heating systems should be designed for a flow temperature of 55°C This includes replacement heating systems in existing buildings. This is introduced as a preparation for heat pump retrofits.

Minimum Efficiency Standards for heat pumps and cooling systems in new and existing buildings have also been introduced.

*For further information about Part L, you can download our Part L - Photographic Evidence e-Guide at FuturaBright.co.uk

Additional requirements

Supplementary changes

Heat pumps

Type	Minimum COP (BS EN 14511-2)
All types (except air-to-air with output ≤12kW, absorption and gas-engine) for space heating	2.5
All types (except absorption and gas-engine) for domestic hot water heating	2.5
Absorption	0.5
Gas-engine	1.0

Comfort cooling

Type	Minimum SEER
Split and Multi-Split (Inc. VRV/VRF)	5.0
Water-to-Water Chillers: <400kW 400-1500kW >1500kW	 5.0 6.0 6.5
VapourCompression Cycle Chillers: <400kW >400kW	 4.0 4.5

- All types (except air-to-air with output ≤12kW, absorption and gas-engine) for space heating
- All types (except absorption and gas-engine) for domestic hot water heating

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Approved Document O

Overheating Mitigation

Part O of the Building Regulations specifies standards on overheating in Dwellings, Residential Buildings (where people sleep on the premises), including Student Accommodation.

Key Focus:

Part O is set out to limit unwanted solar gains in summer & provide an adequate means of removing excess heat from indoor environments, therefore reducing health risks associated with overheating.

There are multiple influencing factors, making it difficult to model overheating, such as:

- Solar gains, air changes, internal gains, shading, opening sizes, and wind speeds are all factors to take into consideration

- A comfortable temperature is highly subjective, i.e., what is hot to one person, may be comfortable to others

Why Part O?

- Dwellings have become more insulated, more airtight, and more densely packed.
- The installation of communal heating is more prominent, resulting in additional heat gains
- The rise in single aspect dwellings means no cross ventilation
- With the insulation requirements increasing as part of the amendments to Part L, overheating needed to be addressed too
- For dwellings, these have been historically assessed under SAP (Part L) modelling with a simple calculation

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Routes to compliance

There are two routes to compliance with Part O.

1. Simple Assessment

This assessment type is a manual calculation and is based on window opening sizes and orientation. There are two key criteria in this assessment, namely the opening size, and the free opening area available for ventilation.

Geographical locations of dwellings for this assessment type have been split into high risk and moderate risk areas and have been further divided into buildings with cross-ventilation, or without cross-ventilation. Cross ventilation is defined as having openings possible on opposite facades. Therefore, corner apartments, for example, would not meet this definition.

2. Dynamic Assessment

Upon initial review it appears the simplified method to demonstrate compliance is going to be extremely restrictive on window sizes and opening areas and therefore limit architectural freedom on some schemes. An alternative method is to perform a dynamic assessment using a methodology defined by the Chartered Institute of Building Services Engineers (CIBSE) known as TM 59/52 modelling. Specific software packages are able to perform the dynamic simulation modelling and assess CIBSE compliance.

This is considered to provide greater flexibility, with a design led and less prescriptive approach than the simplified method. Overheating assessments will play a key role in defining the form and fenestration of a building so should be considered pre-planning and maintained throughout all stages of design.

"Overheating assessments will play a key role in defining the form of a building"

The overheating strategy must be usable to the resident, and should take into consideration the risks of:

- **Intrusion**
- **Entrapment**
- **Pollution**
- **Falling**
- **Noise**

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Approved Document S

Infrastructure for charging of Electric Vehicles

Approved Document S provides guidance on the installation and location of electric vehicle charging points, or EVCs. This document applies to new residential and non-residential buildings, buildings that incur a change of use to dwellings, residential and non-residential buildings that are undergoing significant renovations, as well as mixed-used buildings, both new and undergoing significant renovations.

Key points in Part S

- All new residential buildings with associated parking must have access to an EVC point.
- Associated parking spaces with access to EVC must be 100%
- Future cable routes need to be metered and can be spatial provision only
- Ducting/conduits/containment need to be provided as part of the base build
- There is a cap of £3,600 as an average EVC install cost. If this is exceeded, then cable routes can be provided in lieu of the physical installation of the EVC and associated cabling.

EVC Technical Requirements

The following requirements are now in place for the installation of an Electric Vehicle Charger:

- Minimum nominal rated output of 7kW (fast charge)
- Universal socket (untethered, i.e., no fixed cable)
- Must indicate the charge status
- Served from dedicated circuit
- Future cable routes need to be metered

Local Policy may dictate the requirement for active/passive provision irrespective of whether it is covered car parking or not. For example, the London Plan requires a minimum of 20% of the parking spaces provided to have an active EVC with passive provision being made for the remaining spaces.

Future Homes Standard (FHS)

From April 2025, all newly built homes must comply with the Future Homes Standard (FHS) to cut operational emissions by over 75% compared to current Building Regulations. If construction aligns with current government targets, there is a potential that 300,000 homes will be required to meet this standard annually.

Why is FHS being introduced?

The FHS is being introduced to provide further reductions in emissions associated with heating and operating a building. This is predominantly through the introduction of improved fabric standards, and the mandating of low carbon, electrical heating appliances.

The assessment will be undertaken within a new energy modelling approach known as the Home Energy Model, which is currently in consultation, and could be the next replacement for SAP as a compliance model.

The FHS' primary aim is to ensure new homes are 'zero-carbon ready', minimising the need for any future retrofits.

Compliance and Notional Building

Similar to current regulations, homes will be assessed against a 'Notional Building' with specific systems and fabric. New homes must match, or exceed these benchmarks to comply. Failure to do so will result in rejection by building control.

UK Building Regulations Updates - **Future Homes Standard**

Fabric and Heating Standards

New homes will require higher fabric standards, with improvements like triple glazing (U-value of 0.80 W/m²K). High-quality construction and precise thermal bridging assessments will be key, especially if fabric targets are to be met. Heating systems must be low-carbon, such as heat pumps, rather than fossil-fuel-based.

The FHS will lower emission rates due to electric-based low-carbon heating, and energy efficiency will be offset by on-site renewables.

Emission Targets

Photovoltaics (PV) have been excluded from the Notional Building, reflecting a fabric-first and low-carbon heating approach.

Further Considerations

The enhanced fabric standard requires more insulation and better glazing, potentially increasing embodied carbon. A Whole Life Carbon Assessment (WLCA) can help monitor the overall environmental impact. Some local authorities now mandate WLCAs for new developments.

Space considerations for low to zero carbon technologies like heat pumps will necessitate early design decisions, particularly in space-constrained developments. Additionally, unregulated energy use isn't detailed in the FHS, but can be captured with TM54 energy modeling.

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Home Energy Model

The UK government is introducing a new methodology called the Home Energy Model, designed to assess the energy performance of homes across the country. This model, announced in December 2023, will potentially replace the current Standard Assessment Procedure (SAP), marking a significant shift in how energy performance is calculated and monitored in the residential sector.

Why the Change?

SAP has served as the cornerstone of energy performance assessment for domestic buildings in the UK for decades, helping to demonstrate compliance with Building Regulations and generating Energy Performance Certificates (EPCs). However, SAP was originally designed for simpler assessments and has evolved over time, leading to complexity and limitations in addressing modern energy challenges and generating accurate reporting figures for ever-more invested Clients and Local Authorities.

The Home Energy Model is intended to be a more accurate, flexible, and forward-looking tool that supports the government's housing and climate policies. It offers a clean slate, allowing for a more sophisticated approach that aligns with today's technological advancements and energy efficiency goals.

Key differences and improvements

Increased Time Resolution

The Home Energy Model will simulate energy performance at a 30-minute interval throughout the year, compared to SAP's monthly calculations. This increased resolution will improve the accuracy of assessments, particularly in evaluating technologies like heat pumps.

Modular Architecture

Unlike SAP's complex and somewhat rigid structure, the Home Energy Model will feature a modular design. This approach allows for more flexibility, easier updates, and continuous improvement without disrupting the overall system.

Smart Technology Integration

The new model will support the realistic modelling of energy flexibility and smart technologies, such as storage and load-shifting solutions. This capability is crucial as the UK moves towards a more dynamic and responsive energy system.

Open-Source Methodology

Transparency is a core aim, with the Home Energy Model's codebase being made publicly available. This open-source approach will allow for community engagement and scrutiny, ensuring that the methodology evolves in line with industry needs and technological advancements.

Centralised Delivery and Software Provision:

The model will include a centralised, cloud-based energy performance calculator. This allows software providers to create user interfaces around a standardised, government-provided engine, streamlining the assessment process.

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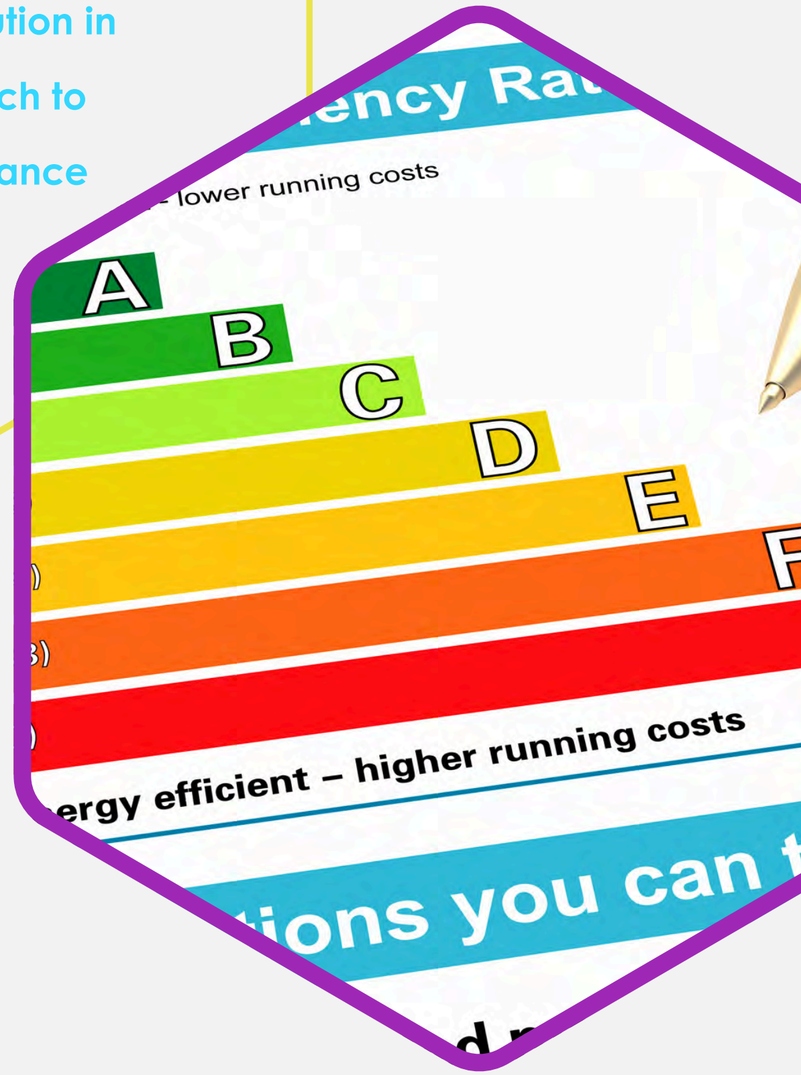
Impact on Energy Performance Certificates (EPCs)

The Home Energy Model represents a significant evolution in the UK's approach to energy performance assessment.



Timeline for Implementation

The Home Energy Model is still in development, with the first live version expected to be implemented alongside the Future Homes Standard in 2025. Key milestones include:

- 2024: Publication of government responses to consultations and further development of the model, including the EPC wrapper.
- 2025: Introduction of the model alongside the Future Homes Standard, with a transitional period for industry adoptation.

"Reduce carbon emissions and work towards achieving Net Zero"

Summary

In summary, the following overall changes to the UK Building Regulations are important to note:

Part F: Ventilation

Continuous operating ventilation systems are preferred with Mechanical with Heat Recovery (MVHR) being the best performing in terms of energy reduction and assistance with overcoming overheating. If there is any risk of local traffic around the site it is recommended to perform an Air Quality Assessment at pre-planning stages so impacts can be factored into the overall design. .

Part L: Conservation of Fuel and Power

It is recommended that thermal junctions are modelled in support of the overall SAP compliance model, and the use of default values will not perform poorly. Waste Water Heat Recovery is a worthwhile consideration now to assist in the reduction of hot water demand within the properties.

The need for enhanced documentation at completion will need to be considered at early stages, with a record keeping plan developed to ensure correct images are taken at the right times in support of the BREL reporting requirements and the Home User Guide required for the resident on occupation.

Part O: Overheating

De-risk schemes pre-planning, by undertaking Dynamic Simulation Modelling of overheating to secure compliance prior to elevations and openings requiring to be fixed post-planning.

Retain Energy Consultant services at Concept Stage through to Construction. Test all changes to fabric throughout design stages.

Part S: Electrical Vehicle Charging

If covered parking, define cable routes and spatially plan the distribution of cables to facilitate the future addition. Remember; no builders work allowed.

If uncovered parking is being provided 100% of the spaces will need to be provided with a charge point, but only if the average install cost is less than £3,600.

> **“It is important, now more than ever, to ensure that the built environment is drastically reducing its carbon footprint”**

Conclusion

The updates made to the Building Regulations are an important mile-stone in the move to lower emission buildings, with the Future Homes Standard and Home Energy Model continuing this trend.

These updates must be complied with as of 15th June 2022 and will therefore affect all businesses involved in the building services industry. It is therefore important to familiarise oneself. With the updates being mandatory requirements, these changes impact all businesses involved in the building services and construction industry.

Therefore, a clear understanding of the requirements, in addition to potential future direction of travel is key to success for all involved and to ensure a clear understanding of what these changes mean.

These updates are a significant part of the UK’s journey to reach Net Zero by 2050, and will catapult the country toward a cleaner, greener built environment, through the implementation of phased reductions. Whilst this is in line with government policy, it comes on a background of relevant stagnation in regulatory change for the past decade, therefore a step-change for designers and builders is required to ensure that the industry as a whole is able to keep pace with the forthcoming regulatory changes.

The Futura Bright Team are passionate about assisting our Clients in improving their design standards in line with these regulatory changes. With our team of consultants, we aim to provide honest advise and assistance to our Clients to help navigate the challenging changes ahead.

We also have a distinct advantage in the industry, where we are able to collaborate with an experienced MEP team to bring these sustainable systems to life within your design, fulfilling your needs for the full lifecycle of the project.

How can Futura Bright help?

We work with a wide range of end clients, from Developers, Architects and Planners, to contractors and provide packaged solutions that are unique and tailored to meet each client's needs.

By working closely with our Building Services Engineering team, we are able to appreciate the technical feasibility of proposed systems. We pride ourselves in offering solutions that are not only sustainable, but cost effective and technically viable. Our services cover every stage of a project, from planning applications all the way through to post occupation.

Our Sustainability Team have extensive knowledge of building sustainability measures. From SAP to SBEM, Thermal Bridging to overheating, we are able to develop unique strategies that will achieve planning consent without hassle.

FUTURA BRIGHT

SHAPING A SUSTAINABLE FUTURE

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