Building for the 21st century -

Stroud District Council planning requirements for sustainable development

March 2019

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Contents

1 Introduction

The revised National Planning Policy Framework (NPPF) published in July 2018 has introduced new provisions relating to building design and energy. Taken together with written ministerial statements and recent clarifications of existing policy, the new policy framework allows local planning authorities to require developers to build homes to higher environmental and energy efficiency standards than building regulations currently require.

This report suggests and recommends a series of environmental enhancements that can be delivered through the planning system. Stroud District Council may wish to consider incorporating new policies within the Stroud District Local Plan Review which can help to deliver these environmental enhancements. This report includes the policy rationale for those enhancements and suggests how they can be delivered in practice.

The following sections of this report cover each key environmental issue. There is a particular focus on enhancements affecting new homes, although the report also includes a short section on opportunities relating to non-domestic buildings.

2 Energy

The key paragraphs in the NPPF relating to energy are paragraphs 151 and 153:

151. To help increase the use and supply of renewable and low carbon energy and heat, plans should:

> a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
> b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
> c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

153. In determining planning applications, local planning authorities should expect new development to:

> a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
> b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

For domestic schemes these requirements provide a new opportunity to develop more energy efficient homes. For example solar photovoltaics (PV) on new roofs are ideal “suitable areas for renewables”. In addition, layout and orientation can also make homes more energy efficient. For example, maximising the use of a south facing aspect to collect solar energy reduces the overall heating demand.

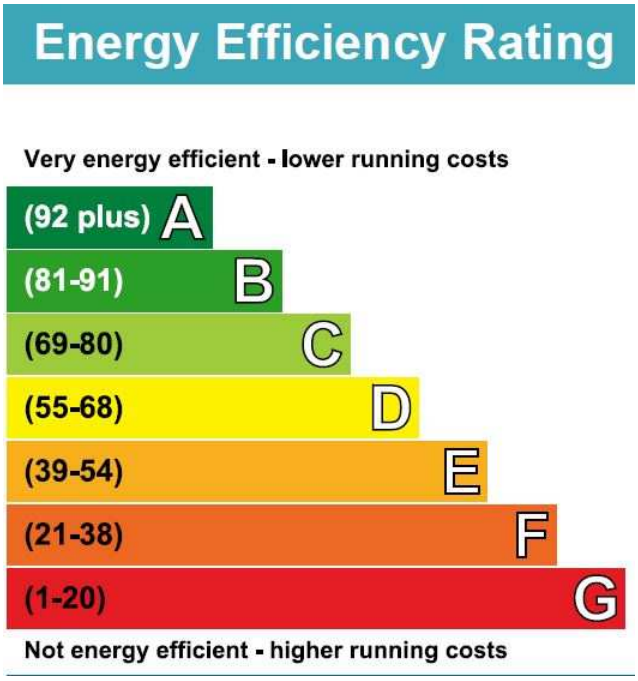
Adding renewables and maximising orientation increase the energy efficiency of homes and this is reflected in the energy efficiency rating. Energy efficiency rating calculations are required to meet Part L of the Building Regulations and energy efficiency rating is required to sell new homes.

For non-domestic situations most of the requirements can be addressed using the BREEAM scheme (see section 12 of this document).

In a series of Written Ministerial Statements, House of Lords statements and Government responses to consultations[1], it has now been confirmed that planning authorities can require house builders to build homes with energy efficiencies up to the equivalent of Code for Sustainable Homes level 4. The full recent history is given in the appendix 1.

Before viewing how some other planning authorities have sought to implement this requirement, an understanding of how energy efficiency is measured for building regulations is required. Part L of the building regulations requires that the Dwelling Emissions Rate (DER), measured in kg CO2/m2/year, is lower than a Target Emissions Rate (TER) in the same units. The DER is calculated as part of the so called SAP methodology which models the energy usage for space heating, water heating and lighting in a dwelling. It takes into account insulation, nature of the heating system, renewables and orientation of the as-built home. The TER is calculated the same way, but for a notional dwelling of the same shape and size, but with minimum insulation and no renewables. Furthermore, the TER is adjusted by a fuel factor which depends on whether or not electric heating is intended to be used.

The SAP methodology (SAP stands for Standard Assessment Procedure) also results in an energy efficiency rating for the home. The rating is between 100 which is a very warm, low cost and low carbon home down to 0. SAP rating below 69 is considered cold, energy inefficient and may put occupiers at risk of fuel poverty. SAP 35 is dangerously cold. The Energy Performance Certificate (EPC) is a letter rating related to the SAP rating:



The numbers in brackets are the SAP ratings and the letters are EPC ratings.

Ipswich Borough and Brighton and Hove City Councils have successfully interpreted the new rules as 19% improvement of TER over DER[2] in their adopted policies. Furthermore, other authorities (Stockton on Tees Borough, Cherwell District and South Lakes District) have interpreted the new NPPF as allowing re-introduction of the Merton Rule where a % of energy demand for a building must come from renewable sources.

This report recommends a slightly different approach to fulfilling both higher energy efficiency requirements and a switch to low carbon energy policy as set out in paragraphs 151 and 153 of the NPPF. The recommendation is that there should be a requirement on house builders to achieve a specific SAP[3] rating

[1] Documented in pages 9-10 of Driving sustainability in new homes: a resource for local authorities VERSION 1.2: Sept 2018, UKBGC, UKGBC Playbook

[2] Target Emissions Rate (TER) and Dwelling Emissions Rate (DER) are figures required by current building regulations, with DER being required to be better than TER, so even 0.1% better passes Part L.

[3] A SAP rating is a measure of the cost of fuel for running a home. 100 is very low cost and anything less than 69 is very costly and puts occupiers at risk of fuel poverty.

equivalent to Code for Sustainable Homes (CSH) level 4. This is based on the reasons listed and expanded upon below:

- DER/TER approach can lead to perversions
- The DER/TER calculations will change with the new building regulations due soon
- SAP is more widely used after a home is built
- SAP represents fuel cost to the occupier for the home
- A SAP rating can be specified which is equivalent to level 4 of the CSH
- A SAP rating can be specified which corresponds to levels required by the Climate Change Act 2008
- A SAP rating is technology neutral

2.1 DER/TER approach can lead to perversions

The root cause of the potential perversions lies in the calculations for the TER which is a notional dwelling built to the same size and shape as the actual building being assessed, but with minimum insulation standards.

Perversion 1 - the target is essentially relaxed if electric heating is used - this can lead to situations where, for example, heat pumps are installed that lead to very good % improvement of DER over TER, but actual CO2 emissions can be equivalent to or even higher than if the home was built with gas heating and excellent insulation.

Perversion 2 - the target is CO2 based which can lead some developers to install wood pellet boilers. These are classified as low carbon, but do cause local NOX emissions and are costly for occupiers to run

Perversion 3 - flats with a single aspect are typically already very low CO2 emissions because there is very little exposed fabric from which heat can escape. Builders must sometimes go through extraordinary lengths to achieve DER/TER reduction even though the flat is essentially low carbon anyway.

2.2 The DER/TER calculations will change with the new building regulations due soon

There is a new SAP version (SAP 2016) which is expected to be used soon although no date has been announced. The SAP methodology calculates the DER and TER which in turn uses a kg CO2/kWh conversion. The latest CO2 kg per unit of electricity is far lower than previous versions of SAP and will impact on the 19% DER/TER improvement. Its comparability with CSH level 4 is unknown.

2.3 SAP is more widely used after a home is built

DER/TER is only used for building regulations and has no relevance anywhere else. The SAP rating is widely used for other purposes e.g. buying or renting a home, the Minimum Energy Efficiency Standards (MEES) regulations for private rented sector, fuel poverty strategy and is used as a kpi in social housing organisations.

2.4 SAP represents fuel cost to the occupier for the home

The SAP rating represents the costs of space heating, water heating and lighting in a home. Wherever the costs are low (i.e. a high SAP) the CO2 emissions are low. However, the same cannot be said for the reverse situation. When the CO2 is low, costs are not always low, the main example being wood pellets burners.

2.5 A SAP rating can be specified which is equivalent to level 4 of the Code for Sustainable Homes

The author of this report found that homes built to CSH level 4 had EPC certificates where the SAP rating was 86 or above. (See appendix 2 for more detail). In the technical guidance for the Code for Sustainable Homes, Level 4 applied to a DER/TER of between 25% and 100% improvement of DER/TER. Greater than 100% was equivalent to level 5. % improvements near to 100% approach the level of PassivHaus, which in this author's experience corresponds to SAP ratings of around 94. (See appendix 2 for more detail). In other words any SAP rating between 86 and 94 could be argued to be equivalent to Code 4.

2.6 A SAP rating can be specified which corresponds to levels required by the Climate Change Act 2008

The Climate Change Act requires an 80% reduction of CO2 emissions compared to 1990 levels. No Government guidance has been given on what that actually means for homes, but research carried out by Sustainable Homes[4] indicates that a SAP rating of 86 corresponds to an 80% reduction. As referred to above, SAP 86 is also equivalent to CSH level 4.

2.7 A SAP rating is technology neutral

Setting a SAP rating allows builders to design and build homes however they see fit, as long as they meet the required performance target. In this case there seems no need for any kind of Merton rule specifying % renewables, as the builder may choose to achieve the SAP rating and hence a reduction in carbon without the need for renewables.

2.8 Build costs

There is little exact and recent information on actual build costs for various ranges of energy efficient homes. The evidence that does exist relating to costs is:

- 2015 PassivHaus Trust research[5] - 20-25% above building regulations at the time
- 2013 David Langdon study CSH level 4 around 2% above building regulations at the time
- 2018 Case study submitted by Optimal Retrofit PassivHaus consultant at time of research for this work indicated that a PassivHaus may be built anywhere between 0 - 15% above the costs of an equivalent building regulations house
- 2018 initial view from SD21 consultancy was that a Dorset-based RP commissioned a study and found that off-site PassivHaus build was 15% cheaper than building regulations
- The most recent new build completions in the South West have been coming in the B range of the EPC (between SAP 81 and 90) suggesting that average building regulations compliant homes were around SAP 83 on average[6]

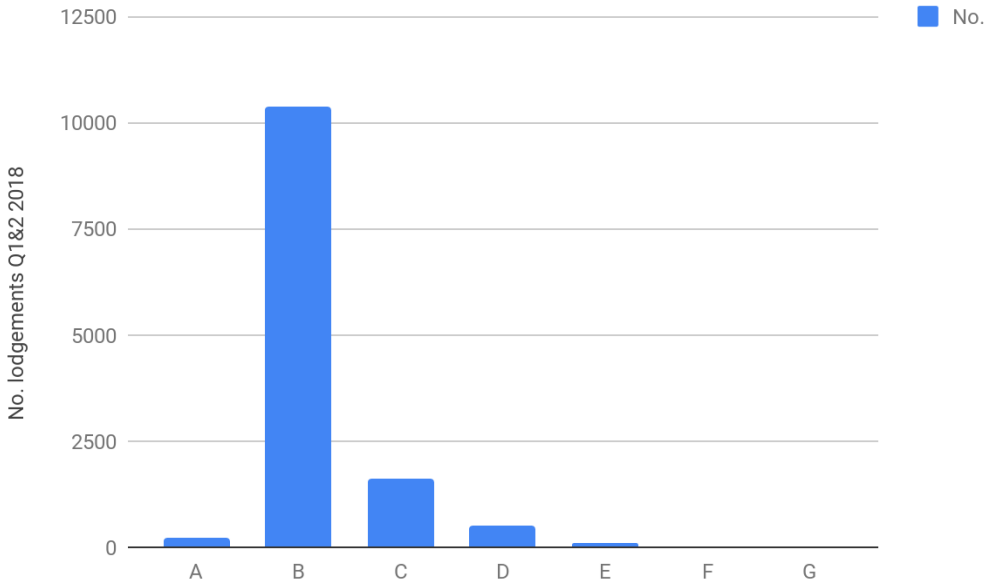
It is clear that the costs of obtaining higher energy standards are reducing and the fact that new builds now are achieving an average of SAP 83 indicates that this is cost effective at this point in time. A stimulus to require

[4] The Review: Safe as houses, 2016, Sustainable Homes, https://www.sustainablehomes.co.uk/research-project/the-review-safe-as-houses/

[5] Passivhaus Capital Cost Research Project, 2015

[6] https://www.gov.uk/government/statistical-data-sets/live-tables-on-energy-performance-of-buildings-certificates

even higher energy standards could drive costs down even further.



2.9 Conclusion on energy

From the data obtained it is clear that requiring a SAP ratings as opposed to a more stringent DER/TER improvement, is a reasonable and flexible way forward. It aligns with other regulations and strategies, means lower costs to occupiers, and does not create perversions for builders.

As will be explored in the Post-Occupancy Evaluation there is a performance gap between what is designed and the energy performance of what actually gets built. In addition, the Local Enterprise Partnership has ambitions to have all new buildings as zero-carbon.[7]

In view of these factors, it is recommended that a SAP rating of 86 (~PassivHaus and therefore equivalent to CSH level 4) should be established as a requirement for all newbuild homes in the District.

3 Water

No extra requirements are recommended on water efficiency for new homes. This is because:

- Current Part G of the Building Regulations requires 125 litres per person per day (lpd) which is below the recommended, science based water efficiency as derived by the Environment Agency[8] of 130 lpd
- Water efficiency for Severn Trent (the most frequent domestic supplier in the area) is already low at 133 lpd[9].

[7] Gloucestershire Energy Strategy, 2019, GFirst LEP, page 11, https://www.gfirstlep.com/downloads/2019/gloucestershire-energy-strategy-2019.pdf
[8] Water for people and the environment, EA, 2009, https://webarchive.nationalarchives.gov.uk/20140328091448/http://www.environment-agency.gov.uk/research/library/publications/40731.aspx
[9] https://discoverwater.co.uk/amount-we-use

4 Overheating

Overheating is a major problem especially in airtight new builds[10]. Paragraph 149 of the revised NPPF (July 2018) states:

"Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures."

No specific overheating risk assessment is dictated, but there are a few available:

- SAP appendix P - generally not considered very robust because, despite this being in place in building regulations since 2006, it has still led to overheating homes. It does not take into account future temperature increases in the UK.
- Home Quality Mark (HQM) - this is BRE's successor to the Code for Sustainable Homes. It contains a more robust overheating risk assessment process that includes future climate change.
- PassivHaus Planning Package - overheating risk reduction is an inherent part of PassivHaus design and is considered robust
- CIBSE TM59 - widely considered a robust dynamic simulation model and used successfully for buildings such as care homes. Rarely used in a domestic situation due to cost.

It is recommended that the HQM overheating risk assessment is the most appropriate, as this is 3rd party verified, is a reasonable cost and, as will be seen throughout this document, HQM assessments can tackle many of the environmental issues identified in the NPPF.

HQM will be referenced a number of times in this document. There are a number of key points to raise on this as the HQM scheme is owned and run by private company BRE.

1. BRE have wording that they would like local authorities to use that signposts developers to use HQM. The wording is centred around a reference in NPPF, paragraph 130 which requires: "Local planning authorities should also seek to ensure that the quality of approved development is not materially diminished between permission and completion, as a result of changes being made to the permitted scheme"

   In essence BRE maintains that the HQM scheme is the way to ensure that the quality of approved developments will be diminished. This is achieved through minimum standards set in the HQM scheme. For example, BRE have a minimum standard in the energy section of HQM which aligns with the "code 4 equivalent interpretation". Whether or not this wording successfully allows local authorities to require HQM has yet to be tested with the Planning Inspectorate.

2. It must be made very clear that using sub-sections of the HQM scheme as suggested in this document in no way results in a formal "star rating" against HQM and no developer should claim a HQM star rating this without carrying out a formal HQM assessment in accordance with the BRe scheme.

5 Ecology

Clause 175d of the NPPF states

"development whose primary objective is to conserve or enhance biodiversity should be supported; while

[10] Overheating in Homes - The Big Picture, Zero Carbon Hub, 2015, http://www.zerocarbonhub.org/sites/default/files/resources/reports/OverheatingTheBigPicture-ExecSummary-Screen.pdf

opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."

In addition the NPPF encourages the use of green infrastructure to manage flooding (see later). As well as increasing biodiversity and reducing flooding, green spaces are known to be good for enhancing health and wellbeing.

Turning ecology into a specifiable measurable requirement is problematic. Initiatives such as biodiversity off-setting and natural capital accounting are emerging but are not yet suitable for domestic new build. Defra's biodiversity net gain metric is currently under consultation and it is hoped to be implemented in 2019, but no firm dates have been given. It should be noted from Stroud District Council's point of view this is an interesting development. It is being proposed that developers who cannot demonstrate net biodiversity gain, must pay into a fund that is used for communal biodiversity development.

In the absence of any other standard, it is recommended that the clauses in HQM are used. Specifying 2 credits under "03 Routes of rigour (follow 3A or 3B): Liaison, implementation, and data" under Clause 2.3 Ecological Change and Enhancement will achieve enhancement without significant cost to a builder. This would typically means engaging the services of an ecologist to determine appropriate action on site e.g. referencing any requirements in a local Biodiversity Action Plan or planting schemes with ecological valuable.

6 Cycle storage

Convenient cycle storage encourages cycle use. Clause 104d of the NPPF states:

"provide for high quality walking and cycling networks and supporting facilities such as cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);"

HQM has a good specification for secure and convenient cycle storage. It is recommended that housebuilders are required to gain 3 credits under the " 02 Cycle Storage" in section 1.2 Sustainable Transport Options. This typically involves providing cycle storage to homes that is secure, sheltered and with easy access to a public highway. This aligns with Gloucestershire Local Transport plan CD1111[11], withing para 5.4 of "Policies to promote a greener healthier Gloucestershire" which states "Minimum covered and secure cycle parking facilities will be required for all new developments in accordance with national and local standards."

Cycle routes -HQM has a specification for connecting new homes that help with the Local Authority Cycle Plans. Gloucestershire Transport Plan, PD 2[12] - Cycle - "LTP PD 2.3 Integration with new developments GCC will liaise with Local Planning Authorities and developers to ensure connectivity between new developments and existing infrastructure and to ensure that realistic opportunities for travel choice are taken up within and between new developments." No clear examples of what this means in practice, but it would be reasonable to expect cycle storage provision and, for larger developments, new cycle path connecting to the existing cycle network.

Electric Vehicle Points - Clause 110e of the NPPF states that development should "be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations." HQM does have a specification for this so it would be possible to specify this. The Energy Savings Trust has estimated that to install an EV point will cost ~£1000. [13]

[11] https://www.gloucestershire.gov.uk/media/15065/cd1111-gloucestershire-local-transport-plan-2011-2026-ltp3.pdf
[12] https://www.gloucestershire.gov.uk/media/2223/9-pd-2-cycle-nov-2017.pdf
[13] http://www.energysavingtrust.org.uk/scotland/grants-loans/domestic-charge-point-funding

7 Internal waste recycling

There is no clear sanction in the NPPF for the provision of internal recycling bins. However, in the general description is does want planning authorities to achieve sustainable development, part of which is "minimising waste". National Planning Policy for Waste (October 2014) states that "positive planning plays a pivotal role in delivering this country's waste ambitions through... ensuring the design and layout of new residential and commercial development and other infrastructure...complements sustainable waste management, including the provision of appropriate storage and segregation facilities to facilitate high quality collections of waste." (Clause 1) WRAP data suggests that internal recycling bins do encourage more recycling and hence avoid waste to landfill.

It is therefore recommended that the provision of internal recycling bins should be required. A good specification for these is given in HQM, section 7.3 Recyclable Waste and it is recommended that builders achieve 8 credits.

8 Sustainably sourced materials

The NPPF states, in relation to the responsible sourcing of housebuilding materials, that planning policies should:

"so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously;" (Clause 204b).

Housebuilders using sustainably sourced materials would contribute to this requirement. HQM has a specification on Environmental Impact of Materials which may be useful. Should Stroud District wish to apply this specification it is 6.2 Environmental Impact of Materials. In broad terms, the requirement is for developers to calculate the volume of each type of material used in the development, categorise each material into types (e.g. concrete, timber etc), obtain "responsible sourcing" certification from suppliers, categorise the degree of rigour of the "responsible sourcing" certification (e.g. does it covers complete production of the material or only part of the process), input this data into a bespoke HQM calculator tool, then finally obtain a "responsible sourcing" score.

9 Flooding

Clause 150 of NPPF states that new development should be planned for in ways that:

"avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and"

HQM has a good specification for reducing flood risk. It is recommended that Stroud District require housebuilders to achieve a minimum of 17 credits in section 3.1 Flooding of HQM. In broad terms, this ensures that homes are either a) built in low flood risk areas or b) if built in medium or high risk the development is made resilient or resistant by, for example, ensuring that the ground level of habitable rooms is at least 600mm above design flood level. A flood risk assessment with recommendations must be carried out taking into account future flood risks.

10 Post Occupancy Evaluation (POE)

The difference between the designed environmental performance of a home and it's actual performance can vary widely[14]. This can result in higher than designed CO2 emissions and costs for occupiers. An ideal way to tackle this "performance gap" issue is to carry our POE.

The UK Green Building Council (UKGBC) believes there is no legal limitation on requiring this because "it is designed to encourage the following of appropriate processes and cannot be considered a technical standard or performance requirement given that evidence of a developer's own internal processes is included as an option."[15]

It is recommended that Stroud District Council require builders to carry out POE. HQM has a good specification for this in Section 11.4 Post Occupancy Evaluation. For example, after one year of occupancy the developer should arrange for energy and electric bills to be collected, along with other occupier feedback. This is then analysed and compared with design energy and water use. The feedback is used to inform future building design.

11 Notes on enforcement

Before a development starts on site the SAP calculations must be submitted for building control approval. This has been identified as the key intervention point for enforcing the sustainability requirements.

Having discussed the possible options with practitioners, the proposed process is:

1. The developer submits SAP building regulations compliance sheets which contains both the expected SAP rating for the home(s) and the overheating risk.
2. If the SAP rating falls below the SAP 86 the building control service notifies the developer that they are not compliant with Stroud District Council's planning policy and that planning enforcement action may be taken.
3. The planning authority is notified of performance and takes appropriate action.

There are other enforcement options to explore:

1. Require builders to carry out an HQM assessment but only for the items mentioned above. The assessment is third party verified by BRE and the final report will demonstrate how each of the criteria have been met without any extra resources required from the planning authority.
2. Require appropriately qualified professionals to carry out an assessment against the criteria above without going via BRE. Costs to builders may be lower because there are no BRE fees, but the assessment may be potentially less rigorous. Again, no planning authority resources would be required for this.
3. Train planning and building control officers to assess the homes against the criteria above. This would require additional resources.

Brighton and Hove City Council require all developers to send them evidence to demonstrate that dwellings have met their 19% TER/DER improvement requirement. They say:

"Post completion, applicants submit evidence to prove this condition [19% improvement] has been met, which is normally in the form of SAP assessments or can be a copy of the BRUKL outputs that are produced for building regulations requirements, but we would require this to be sent in formally under an application to approve discharge of condition (ie and not just passed to us from the Building Control team).

[14] https://www.building.co.uk/communities/new-homes-addressing-the-performance-gap/5061693.article

[15] Documented in page 37 of Driving sustainability in new homes: a resource for local authorities VERSION 1.2: Sept 2018, UKBGC, UKGBC Playbook

I am responsible for providing comments to discharge these conditions, which basically involves me calculating percentages (improvement of DER to TER) to ensure the target has been achieved and providing a comment to our DM team. We don't rely on information to be sent via Building Control. Obviously not all developments use the council's building control team and therefore we couldn't rely on this as a way of gathering information for all developments. There could also be data protection issue potentially?

This does generate a fair amount of work in terms of discharging conditions, so if you are aware of any other methods we'd be happy to hear on an alternative approach!"

12 Non-domestic

Data from BRE suggests that non-domestic buildings that achieve BREEAM ratings also typically achieve greater carbon reductions. The "very good" rating also has minimal over and above costs.

BREEAM rating	Over and above costs	Carbon reduction
Good	n/a	10%
Very good	0.1 - 0.2 %	15%
Excellent	0.4 - 1.8 %	32%
Outstanding	4.8 - 10.1 %	66%

It is recommended that Stroud District Council requires a "very good" rating for non-domestic buildings, with a view to increasing the rating requirement in due course.

13 Existing buildings

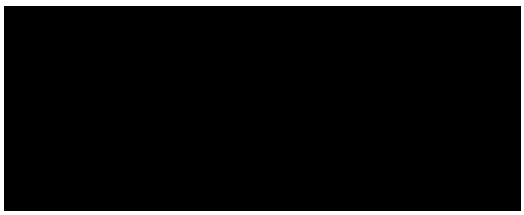
There is nothing of direct relevance in NPPF about improving energy efficiency of existing buildings as this does not normally require planning permission. There may be an opportunity to utilise the Link-to-Energy project more widel. The project is administered by the Severn Wye Energy Agency and is a network of over 100 installers and suppliers that are able to provide all things energy efficient to householders, small businesses and community groups in Gloucestershire, South Gloucestershire and surrounding areas. It could be more effectively promoted to encourage this. It could even be extended to include other environmental things such as water efficiency and eco-landscaping. Depending on other powers available to the council there may be other intervention opportunities, for example from Minimum Energy Efficiency Standards (MEES) regulation. The new Gloucestershire Energy Strategy published by the LEP certainly wants all buildings EPC C or better by 2035, so opportunities should be investigated to deliver on this ambition.

For information, London's GLA has a model that potentially drives energy efficiency works on existing buildings. The GLA's policy is for zero carbon homes in all developments of greater than 10 homes. One of the ways that "zero carbon" can be achieved by developers is to build a "low" carbon home and offset the remaining carbon. The offset carbon is calculated from the emitted carbon from that home over a 30 year period. The developer then pays an amount per tonne (£60 is highlighted in their guidance) into a carbon offset fund held by each London borough. The fund can then be used to finance equivalent carbon reductions in existing buildings.

The GLA has different powers than Stroud District Council which has allowed it to implement this policy. Whether or not similar powers exist within Stroud District Council would be subject of further work, but is certainly not mentioned in the NPPF.

14 Conclusion

The new policies identified in the revised NPPF and interpretations of existing requirements provide opportunities for Stroud District Council to require developers to enhance the environmental and energy performance of new buildings within the district. This report recommends the standards that Stroud District Council may wish to require to deliver against the aspirations of NPPF and contained within the local community.



Sustainability consultant
8/3/19

Lupopia
I am a Chartered Environmentalist and sustainability consultant with over 12 years experience in the construction and housing sector. My relevant experience is:

- I have carried out energy calculations for buildings throughout the UK over the last 10 years
- My Chartered status is with the Institute of Environmental Management and Assessment (IEMA)
- I have carried out and/or overseen POE and energy use monitoring for Care Homes, estate renovations and new build projects
- I have completed several Code for Sustainable Homes assessments
- I am an associate of Sustainable Homes

Appendix 1

Recent history

In early 2015 the Housing Standards Review reported and Government announced the withdrawal of the Code for Sustainable Homes, except for legacy projects. As a result, a number of changes to existing Building Regulations were introduced, along with new technical optional standards on Access, Water and Space. At the time, the policy for all new homes to be 'zero carbon' from 2016 was still in place (despite unresolved issues as to exactly what that entailed).

In a Written Ministerial Statement (WMS)[16] in March 2015, Government stated that 'local planning authorities...should not set...any additional local technical standards or requirements relating to the construction, internal layout or performance of new dwellings.' The exception was energy performance, where the WMS said that LAs would continue to be able to require energy performance standards higher than Building Regulations up to the equivalent of Code for Sustainable Homes Level 4 'until commencement of amendments to the Planning and Energy Act 2008'.

The amendments in question would have removed the ability of LAs to require energy performance standards for new homes that are higher than Building Regulations. It appeared as though they would be enacted at the same time that Government introduced higher energy performance requirements nationally in 2016, through Building Regulations, which according to the WMS were to be "set at a level equivalent to the (outgoing) Code for Sustainable Homes Level 4." However, after the General Election in 2015, Government scrapped the Zero Carbon policy and the planned Building Regulations uplift. However, the powers (to amend the 2008 Act) have not been enacted, and have been superseded by subsequent political announcements.

Additional clarity was provided during the passage of the Neighbourhood Planning Bill through the House of Lords on 6th February 2017. Baroness Parminter asked in relation to carbon reductions: "Can the Minister confirm that the Government will not prevent local councils requiring higher building standards? There is some lack of clarity about whether local authorities can carry on insisting in their local plans on higher standards. Will the Government confirm that they will not prevent local authorities including a requirement for higher building standards?" Lord Bourne replied: "The noble Baroness asked specifically whether local authorities are able to set higher standards than the national ones, and I can confirm that they are able to do just that."

Revision to the NPPF and Clean Growth Strategy

On 24 July 2018 Government issued a revised National Planning Policy Framework (NPPF) following a consultation period. The revised NPPF states (Paragraph 150b): "New development should be planned for in ways that…can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards."

This is consistent with Section 182 of the Planning Act 2008, which puts a legal duty on local authorities to include policies on climate change mitigation and adaptation in Development Plan documents. Crucially, in its summary response to the consultation[17] (see answer to Q33), the Government has clarified its position on local authorities setting higher energy requirements than those currently contained within Part L of the Building Regulations:

"A number of local authority respondents stated the view that the text in the revised Framework restricted their ability to require energy efficiency standards above Building Regulations. To clarify, the Framework does

[16] https://www.gov.uk/government/speeches/planning-update-march-2015

[17] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728498/180724_NPPF_Gov_response.pdf

not prevent local authorities from using their existing powers under the Planning and Energy Act 2008 or other legislation where applicable to set higher ambition. In particular, local authorities are not restricted in their ability to require energy efficiency standards above Building Regulations. The Government remains committed to delivering the clean growth mission to halve the energy usage of new buildings by 2030".

Appendix 2

Evidence that Code 4 homes are SAP 86 or better

The detail below is taken from SAP calculations for a development in Marsh Gibbon, Buckinghamshire. The detail was captured as part of a Code for Sustainable Homes assessment. All homes achieved Code 4, part of which was to achieve DER/TER improvement for Code 4. The scheme was a mixture of flats and houses.

Plot SAP unique reference number	SAP rating
MGplot1PVSTMVHR	86
MGplot2PVSTMVHR	87
MGplot3PVSTMVHR	88
MGplot4PVSTMVHR	87
MGplot5PVSTMVHR	87
MGplot6PVSTMVHR	88
MGplot7PVSTMVHR	90
MGplot8PVSTMVHR	87

All plots are 86 or better.

Correspondence with an associate from Premier Assessors found that his code 4 assessments were similar to this.

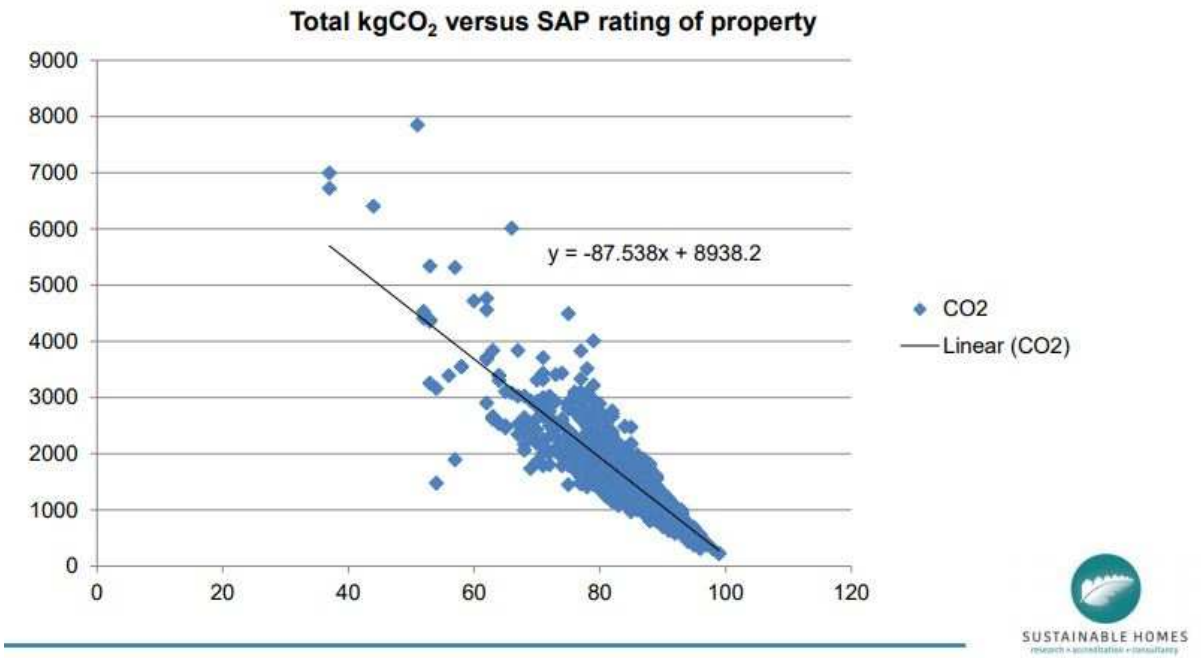
This author has access to SAP assessments for PassivHaus schemes built for Hastoe housing association. These were average of SAP 94.

Rationale for SAP 86 equivalent of 80% reduction in CO2 emissions compared to 1990 levels

There is little formal steer from government about what SAP rating is equivalent to 80% CO2 reduction, i.e. that required by the Climate Change Act 2008. However the "Retrofit for the Future" project, run by the then Technology Strategy Board, which was a government organisation, did give some useful figures.

The report states that a typical 1990 whole house CO2 emission rate for a 80m2 house was 97 kg CO2 / m2. Of this the SAP methodology estimates 78.58 kg CO2 / m2 is due to heating, hot water and lighting (i.e. those emissions regulated by SAP). This is 6.3 tonnes for the 80 m2 home. An 80% reduction of this value is equivalent to 1.3 tonnes per year for an 80m2 home.

The curve below was derived in my former employment as a consultant with Sustainable Homes. It is a plot of CO2 emissions against SAP rating. From this curve it can be seen that SAP 86 is equivalent to 1.3 tonnes CO2 per year, i.e. the 80% reduction target.



SUSTAINABLE HOMES