

# Creating Sustainable Buildings and Places in North Somerset:

Guidance for energy efficiency, renewable energy use and the transition towards zero carbon development



## Why is the Council updating the SPD?

- 1 The Council declared a **Climate Emergency** in 2019 and has an overarching goal to become carbon neutral by 2030. This ambition is both for emissions associated with the Council's own operations and also those emissions generated within the local authority area.
- 2 The **Climate Emergency Strategic Action Plan** sets out an aim for all new homes to be zero carbon or net carbon plus. In order to achieve this, it is crucial for all new development to achieve the highest possible carbon reduction standards as soon as possible.
- 3 In the same year that the Council adopted the original version of this SPD, the Government released the **Housing Standard Review** and the **Written Ministerial Statement which** withdrew the Code for Sustainable Homes and indicated that local planning authorities would be prevented from setting performance improvements for new residential development higher than those of Building Regulations.
- 4 As a direct result of these government policy statements, the Council provided a statement confirming that it would no longer seek **Code for Sustainable Homes** compliance for new residential

development, apart for legacy cases<sup>1</sup>. This has meant that from the date of its statement, the Council has not required new residential development proposals to comply with performance standards in excess of those set out in Building Regulations. However, clarification on whether local planning authorities can set performance standards higher than Building Regulations, has subsequently been provided through **Planning Practice Guidance**.

- 5 In light of the NPPG clarification, the Council has reviewed its position and **will now require Code for Sustainable Homes Level 4 equivalent improvement in performance standards in all new residential development applications, which will include the conversion of agricultural, industrial and commercial properties to residential use. This will apply to all new applications that are registered after the date that this updated SPD is adopted.**

<sup>1</sup> This applied to residential developments legally contracted to apply a code policy or where planning permission was granted subject to a condition stipulating discharge of a code level, and developers are not appealing the condition or seeking to have it removed or varied.



- 6 Code for Sustainable Homes Level 4 was equivalent to a 19% improvement on the performance standards of Building Regulations 2013 – **Part L1A: Conservation of Fuel and Power for new dwellings**. Guidance on the documentation required to demonstrate compliance with this standard can be found in the checklist in Appendix 1.
- 7 In addition to this requirement, the Council will **continue to require** clause 2 of Policy CS2, which is for new residential development to provide between a minimum of 10% to 15% of the predicted energy use (depending on development size), to be met through renewable and low carbon energy generation – this is detailed in **Section 4**.
- 8 In response to concerns around the BREEAM certification process, the Council will expect non-residential proposals to demonstrate how they meet the BREEAM standards set out in Policy CS2 or their equivalent.
- 9 It should be noted that the requirement for Lifetime Homes standard – Clause 4 of Core Strategy CS2 is no longer required. This is because these requirements have been incorporated into Buildings Regulations – Part M ‘access to and use of buildings.’
- 10 This updated SPD also provides updated references to national and local policy documents and amends information that is no longer relevant or is out of date.
- 11 The proposed changes to the original 2015 document are summarised below:

Section of the updated SPD	Summary of changes
Case study detail	Moved to the end of the document
Executive Summary	Amended to reflect and summarise the content of the updated SPD
Why is the Council updating the SPD?	<p>This provides an outline of the rationale for updating the SPD i.e. clarification on setting energy performance policy higher than building regulations, the Council’s Climate Emergency declaration and other changes in national and local policy since 2015</p> <p>5. Clarified that Code 4 equivalent compliance is for all new residential development applications, including conversions.</p> <p>7. Clarified that the renewable energy requirement is a minimum percentage required standard.</p> <p>8. Clarified that an equivalent standard to BREEAM certification will be permitted.</p>
1 Introduction	Includes detail of the Council’s Climate Emergency declaration 2019 and the need to transition towards zero carbon development



## Section of the updated SPD

## Summary of changes

- 2 Policy context
- Updated references to Climate Change Act – Net Zero amendment in 2019
  - Updated references to the National Planning Policy Framework – 2019 version
  - Added reference to the National Planning Policy Guidance – clarification of council’s ability to set energy performance standards higher than Building Regulations.
  - Added reference to the Councils UK100 pledge
  - Added reference to the NSC Climate Emergency Strategy and Action plan
  - Removed reference to the NS Replacement Local Plan
  - Clearer references to both CS1 – Addressing Climate Change and Carbon Reduction alongside CS2 Delivering Sustainable Design and Construction policy requirements.

## Section of the updated SPD

## Summary of changes

- 3 Sustainable Design Principles – Code for sustainable Homes
- Added explicit reference to Code for Sustainable Homes requirement.
  - Added clarification in implementation of Code 4 equivalent standards
  - Amended sections to make clearer references to CS1 policy requirements including to energy use, waste management, water use, sustainable and active travel.
  - Paragraph 3.7: re-worded detail on the energy hierarchy
  - Paragraph 3.10: reworded detail on embodied energy and whole life cost of buildings
  - Paragraph 3.14: removed examples of passive design measures
  - Paragraph 3.16: added wording, where possible the orientation of a building should be within 30 degrees from south
  - Paragraph 3.23 re-worded to emphasise importance water efficiency ahead of water re-use
  - Paragraph 3.26 added wording emphasising the importance of water quality



Section of the updated SPD	Summary of changes
	<ul style="list-style-type: none"> <li>Paragraph 3.29 - 3.36 added more detail on the Active Travel Strategy</li> <li>Paragraph 3.37 added wording on Land Use Ecology to emphasise importance of natural regeneration</li> </ul>
4 Renewable and Low Carbon Energy	<ul style="list-style-type: none"> <li>Paras 4.8 and 4.9 Details the solar and wind SPD's will be reviewed in light of the councils Climate Emergency Declaration.</li> <li>Removed paragraphs detailing, issues to consider for various technologies</li> <li>Included reference to the Renewable Energy Resource Assessment Study, available Spring 2021</li> </ul>
5 BREEAM requirements	<ul style="list-style-type: none"> <li>Added in detail regarding when BREEAM standards cannot be met</li> </ul>
6 Sustainable Drainage Systems	<ul style="list-style-type: none"> <li>Updated references to adopted guidance</li> <li>Added that Wessex Water adopt and maintain SuDS which meet the required standards</li> </ul>

Section of the updated SPD	Summary of changes
7 Climate change adaption measures	<ul style="list-style-type: none"> <li>Added reference to the CS1 policy requirement and the requirement for developers to demonstrate through the sustainability/energy statement, how climate resilience has been considered as part of the design.</li> <li>Added reference to the CS1 and also the CS9 policy requirement relating to Green Infrastructure. Included reference to the GI strategy which is in development and to Rewilding.</li> <li>Revised the details for measures to avoid overheating</li> </ul>
8 The Future Homes Standard and future zero carbon policy	<ul style="list-style-type: none"> <li>Included specific reference to the Future Homes Standards consultation and governments response to this, published in January 2021</li> <li>Detail on the transition to Zero Carbon buildings</li> <li>Reference to the West of England Cost of Zero carbon study</li> </ul>



Section of the updated SPD	Summary of changes
9 Retrofitting energy efficiency, renewable and low carbon technologies	<ul style="list-style-type: none"> <li>Added reference to solar panels and electric vehicle charge points under permitted development</li> <li>Added detail relating to external wall insulation and the requirements for planning permission if in a conservation area or an AONB.</li> <li>Amended detail about solar panels in Conservation areas</li> <li>Added reference to the Historic England guidance on whole building approach to energy efficiency in historic buildings</li> </ul>
10 Viability Assessments	<p>Amended last sentence of the principle of viability.</p> <p>Where a lack of viability is demonstrated, the Council will take this into account in its decision making. <del>and will seek to ensure that the policy requirements do not act as a barrier to otherwise acceptable development from coming forward.</del></p>
11 Planning application	No detail changed

Section of the updated SPD	Summary of changes
12 Monitoring and Review	Link provided to the Annual Monitoring Report
<b>Appendix 1:</b> checklist	<ul style="list-style-type: none"> <li>Moved from Section 2 of the SPD version 2015</li> <li>The checklist has been updated with clearer references to both CS1 and CS2 policy requirements. Developers are asked to check the appropriate boxes to demonstrate compliance.</li> <li>Added wording to reflect that all residential development requirements will also apply to conversions</li> </ul>
<b>Appendix 2:</b> documentation to submit to demonstrate compliance with CSH level 4 equivalent energy standard.	Added examples SAP compliance reports



Section of the updated SPD	Summary of changes
<b>Appendix 3:</b> documentation to submit to demonstrate BREEAM energy performance compliance	Added BRUKL summary report for non-residential buildings
<b>Glossary</b>	No changes made
<b>Case study detail</b>	Moved from the beginning of the document

The original document can be viewed on the [North Somerset Council](#) website.

The updated Supplementary Planning Document was consulted on between 12 February until the 26 March 2021. All comments received have been considered and any changes incorporated into this revised version. The detail of this will be outlined in a consultation report published on the Council website.







# CONTENTS

Draft for Consultation	2	Energy use	23
Why is the Council updating the SPD?	2	Core Strategy CS1 policy requirement:	23
Contents	7	Use the energy Hierarchy	23
Executive Summary	9	Consider embodied energy and whole life cost of buildings	24
1. Introduction	12	Material Use:	25
2. Policy context	15	Siting and orientation	25
The EU Renewable Energy Directive (2018/2001/EU) (2018)	15	Waste management	26
National Policy	15	Core Strategy CS1 Policy requirement:	26
The Climate Change Act	15	Water use	27
Planning and Compulsory Purchase Act 2004	16	Core Strategy CS1 policy requirement:	27
The National Planning Policy Framework (2019)	16	Reducing surface water run-off	27
National Planning Practice Guidance (2019)	17	Sustainable and active Travel	29
Local Policy:	18	Core Strategy CS1 Policy requirement:	29
Climate Emergency Strategy and Action Plan	18	Land use ecology	29
Core Strategy Policy CS1: Addressing Climate Change and Carbon Reduction (2017):	19	4. Renewable and Low Carbon Energy Generation	30
Core Strategy Policy CS2: Delivering Sustainable Design and Construction (2017)	20	Core Strategy CS2 policy requirement:	30
3. Sustainable Design Principles – Code for Sustainable Homes	22	Which renewable and low carbon technologies are most suitable?	31
Core Strategy CS2 policy requirement:	22	5. BREEAM assessments	33
Clarification on implementation of Code for Sustainable Homes	22	Core Strategy CS2 policy requirement:	33
Sustainable construction principles to be demonstrated	23	When BREEAM requirements cannot be met	34
Design for health and wellbeing	23	6. Sustainable Drainage Systems	35
		Core Strategy CS2 policy requirement:	35
		Principles for effective SuDS	37
		Integrated design	37

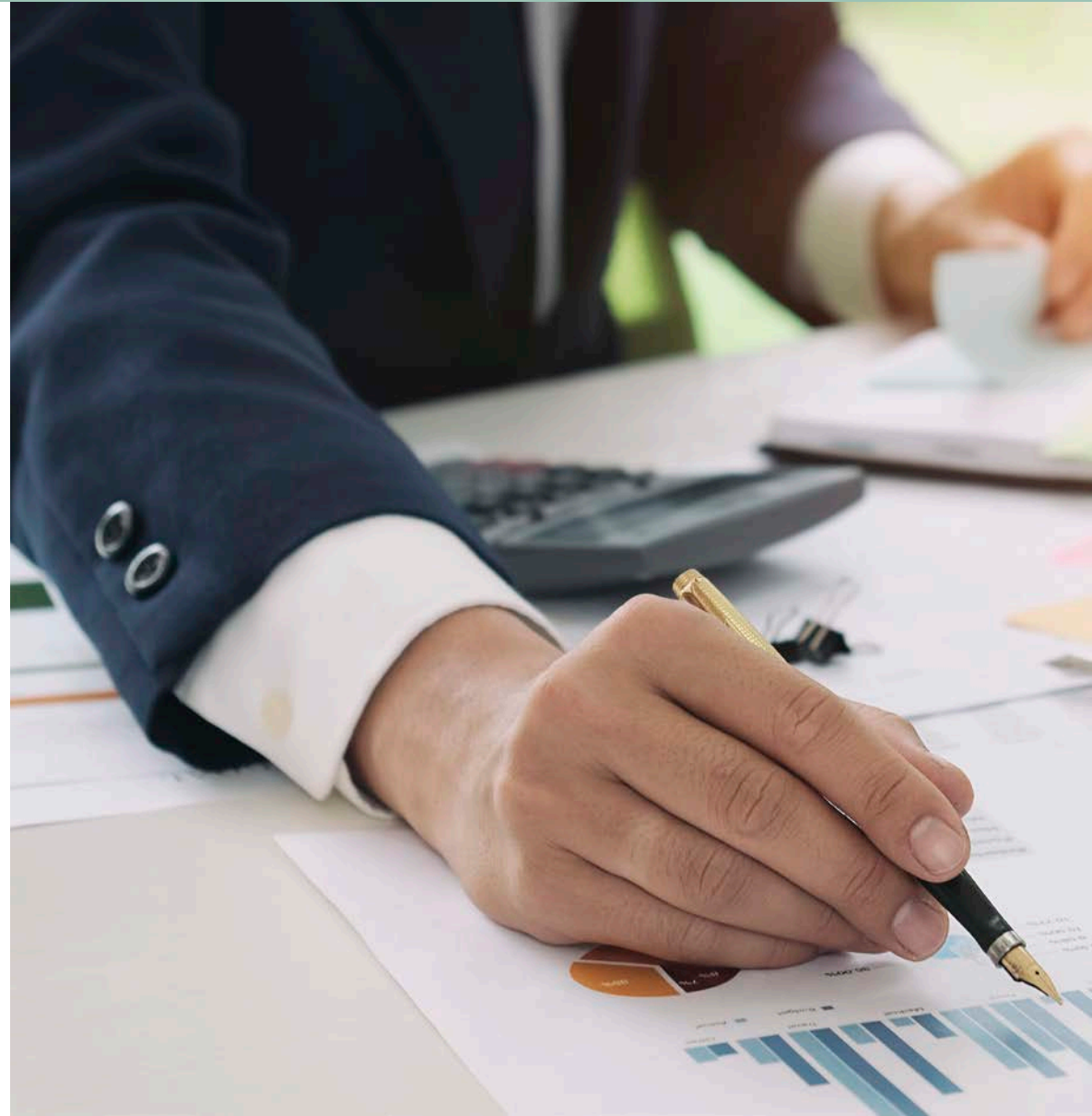


Design for easy maintenance and access	37	Submitting a Planning Application	54
<b>7. Climate change adaptation measures</b>	<b>39</b>	<b>12. Monitoring and Review</b>	<b>55</b>
Core Strategy CS1 policy requirement:	39	<b>AppendICES</b>	<b>57</b>
Flood resilience measures:	39	<b>Appendix 1:</b>	<b>58</b>
Measures to avoid overheating	40	Checklist for achieving required standards for s	58
Measures to minimise the urban heat island effect	40	ustainable buildings and places	65
Measures incorporating green infrastructure and rewilding	41	Sample Calculations	65
Core Strategy CS1 Policy Requirement:	41	<b>Appendix 2</b>	<b>65</b>
<b>8. The Future Homes Standard and future Zero carbon policy</b>	<b>43</b>	Documentation to submit to demonstrate Code for Sustainable	65
Meeting the required energy performance/carbon standard	45	Homes Level 4 equivalent energy performance standard	65
The different approaches to achieve low and zero carbon standards	45	<b>Appendix 3:</b>	<b>66</b>
Costs of building to zero carbon homes standards	46	Documentation to submit to demonstrate BREEAM energy	66
<b>9. Retrofitting energy efficiency, renewable and low carbon technologies</b>	<b>47</b>	performance compliance	66
Permitted development measures under specific circumstances	48	BRUKL summary for non-residential	66
Specific retrofitting measures for traditional/heritage buildings	49	Sample Calculations	66
Retrofit measures likely to be unsuitable for heritage buildings	50	<b>Glossary</b>	<b>67</b>
<b>10. Viability Assessments</b>	<b>51</b>	Key features:	69
When the required percentage of renewable/low carbon energy	52	Key benefits:	69
generation cannot be met	52	Lessons Learnt:	69
When BREEAM requirements cannot be met	52	<b>Sustainable Building Case Study:</b>	<b>69</b>
<b>11. The planning application</b>	<b>53</b>	'Zero Carbon Homes,' equivalent to Code for	69
Pre-application discussions	53	Sustainable Homes Level 6 in Portishead:	69
SuDS applications	53		
Environmental Impact Assessment (EIA)	53		



## Executive Summary

- i The Council has updated the Supplementary Planning Document (SPD) originally adopted in 2015. This is for a number of reasons, including changes in national policy and new and updated local policy. This includes the Climate Emergency declaration in 2019. References are provided to these local policy documents and they should be read in conjunction with this guidance. An overview of the changes to this SPD is outlined at the beginning of this document.
- ii There is now a well understood urgency to act on climate change. This is reflected both in changes in national policy and in the local policy position. The UK's legally binding commitment to reduce greenhouse gas emissions is set out in the Climate Change Act. The original commitment was an 80% reduction in greenhouse gas emissions by 2050 from a 1990 baseline. This target was amended in 2019 to the ambitious goal of achieving Net Zero Carbon by 2050. A Climate Emergency was declared by the Council in 2019 with a Climate Emergency Strategy and Action Plan produced in the same year. These documents set out the key principles which outline how the Council will address the causes and



consequences of climate change and includes an aim for North Somerset to become a carbon neutral council and a carbon neutral area by 2030. The Climate Emergency exemplifies the urgency and need for new development to be net zero carbon.

- iii This SPD details the measures and aspects which need to be considered in order to achieve sustainable buildings and places across North Somerset. The local policy requirements for particular elements of sustainable construction are highlighted at the start of each relevant Section. This applies to Sections 3 through to 7. These policy requirements relate to: Code for Sustainable Homes Level 4 equivalent energy improvement in new residential buildings (**Section 3**), Implementation of renewable and low carbon energy generation (**Section 4**), Building Research Establishment Environmental Assessment Method (BREEAM) compliance for non-residential buildings (**Section 5**), Sustainable Drainage Systems requirements (**Section 6**) and on future proofing design through implementing climate change adaptation measures (**Section 7**). These policy requirements are accompanied by guidance on their appropriate implementation.
- iv There is a range of sustainable design principles that need to be considered when striving to achieve sustainable buildings and places. This includes, but is not limited to, consideration of the existing land use

ecology; energy and water minimisation through siting and orientation, passive design measures, thermal mass, material use, measures to reduce overheating, renewable energy generation, waste management and sustainable and active travel. Detail on these is contained within **Section 3**. This Section also sets out that development should demonstrate compliance with an energy performance improvement above Building Regulations, equivalent to Code for Sustainable Homes Level 4.

- v A key component of local policy on sustainable buildings is the requirement for local renewable and low carbon energy generation. **Section 4** of this document provides some guidelines to follow to optimise the use of the various technologies within new developments.
- vi There is also a local policy requirement to ensure the sustainability of non-residential buildings. Policy CS2 refers to this being demonstrated with compliance to the national Building Research Establishment Environmental Assessment Method (BREEAM) standard. However, the Council will accept proposals which demonstrate that an equivalent standard has been met. Detail of the requirements of compliance with this part of policy is contained in **Section 5**.



This Section also provides advice on in cases where BREEAM (or equivalent) requirements cannot be met.

- vii Flood risk is a key consideration in all new developments and as a consequence, when considering proposals for development the Council requires the application of best practice Sustainable Drainage Systems (SuDS), these are used to reduce the impact of additional surface water run-off. All new large-scale development will require SuDS and **Section 6** provides more detail on the Council's requirements.
- viii The factors to consider under the changing climatic conditions are outlined in **Section 7**. The changes in climate are most likely to include, increased flood risk, higher temperatures, drought conditions and more severe weather events. The typical design life of a new dwelling is a minimum of 100 years and for a new industrial building is a minimum of 60 years, but many buildings are in use for much longer periods. Therefore, when designing buildings, measures must be put in place to ensure they will still be suitable for changing conditions likely to be experienced over the duration of their use. Designers should build in flexibility into developments to allow future adaptation if it is needed.
- ix The government's response to the consultation on the proposed **Future Homes Standard** and the interim standards for Part L (conservation of fuel and power) and Part F (ventilation) of Building Regulations

was released in January 2021. This has provided clarification on a number of issues surrounding the implementation of the Future Homes Standard in 2025, detail on the interim standards to be applied to Building Regulations and the role of local authorities in setting energy performance standards for new residential development. **Section 8** provides an overview of this and specifically the implications for local planning authorities.

- x This guidance also provides some detail on the intended transition to zero carbon development with an overview of the proposed national Future Homes Standard and local policy evidence (**Section 8**). Whilst not a requirement of planning policy, some detail is also provided on measures which can be taken to improve the performance of existing buildings through retrofitting (**Section 9**) and **Section 10** sets out the Council's requirements in relation to viability assessments.
- xi An overview of the requirements for different types of planning applications is provided in **Section 11**. This is supported by the checklist for different development types, which can be viewed in **Appendix 1**. **Appendices 2 and 3** also provide guidance to demonstrate the documentation needed to demonstrate Code for Sustainable Homes Level 4 energy performance and BREEAM compliance respectively.



# 1. Introduction

- 1.1 We strive to achieve sustainability to ensure that a better life for our generation does not mean worse lives for future generations. Sustainable development is therefore defined as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’ Creating sustainable buildings and places is an integral part of achieving sustainable development. It’s about implementing sustainable development on local sites and at individual building scale. This may take various forms, which will include:
- Considering the environmental, social and economic impacts of the construction process
  - Taking account of the resources used in construction
  - How a building is designed and will be used
  - Local energy generation
  - Providing green infrastructure
  - Protecting and enhancing biodiversity
  - Providing buildings and spaces that are healthy for occupiers and users
  - Ensuring sustainable sourcing of materials
  - Minimising waste
  - Minimising water use
- 1.2 The SPD details the measures and aspects which need to be considered in order to achieve sustainable buildings and places across North Somerset. The local policy requirements for particular sustainable construction factors are highlighted at the start of each relevant Section. This applies to Sections 3 through to 7. These policy requirements relate to: Sustainable Design Principles to include Code for Sustainable Homes Level 4 equivalent energy improvement in new residential buildings (Section 3). The implementation of renewable and low carbon energy generation (Section 4). Building Research Establishment Environmental Assessment Method (BREEAM) compliance for non-residential buildings (Section 5). A guide to Sustainable Drainage Systems (Section 6) and on future proofing design through implementing climate change adaptation measures (Section 7). These policy requirements are accompanied by guidance on appropriate implementation.
- 1.3 The Council declared a Climate Emergency in 2019 and has an ambition to achieve carbon neutrality by 2030. As a response to the declaration, a Climate Emergency Strategy and Action Plan were produced in the same year. The **Climate Emergency Strategic Action Plan** sets out an aim for all new homes to be zero carbon or net carbon plus. In order to achieve



this, it is crucial for all new development to achieve the highest possible carbon reduction standards as soon as possible.

- 1.4 National policy relating to sustainable design and construction is set out in Section 14 of the National Planning Policy Framework (NPPF) – Meeting the challenge of climate change, flooding and coastal change. Paragraph 148 states that: “The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.”
- 1.5 National Planning Practice Guidance provides further guidance for sustainable design and construction, in Sections relating to Climate Change and renewable and low carbon energy. “Effective spatial planning is an important part of a successful response to climate change as it can influence the emission of greenhouse gases. In doing so, local planning authorities should ensure that protecting the local environment is properly considered alongside the broader issues of protecting the global environment. Planning can also help increase resilience to climate change impact through the location, mix and design of development.”

- 1.6 Detail contained within this SPD supports **Core Strategy** policy CS1: Addressing Climate Change and Carbon Reduction and policy CS2: Delivering Sustainable Design and Construction.
- 1.7 The Building Regulations set minimum standards in relation to energy efficiency and water consumption. **Part L1A: Conservation of Fuel and Power** sets the requirements for new dwellings, **Part L1B** for existing dwellings and **Part L2B** for existing buildings other than dwellings. Part G of Building Regulations seeks to limit the domestic use of water. The government has stated that Part L will be tightened in the transition to the ‘zero carbon’ requirement in residential properties. The **Future Homes Standard** consultation details these proposals and the government’s response to the consultation is detailed **Section 8**.
- 1.8 This document will be particularly useful for all developers who need to ensure that their developments comply with the required standards of sustainable construction, as set out Core Strategy Policies CS1 and CS2. The detail of the documentation which must be submitted with different development types is provided in the **checklist at Appendix 1**. A guide to the detail of SAP calculations and templates which may be used to demonstrate compliance with energy performance improvements is provided at **Appendix 2**.



1.9 Sustainability principles for new buildings and places will need to be established within applications from the outset of any proposed development. It is essential that designers consider the guidance in this SPD not only at the inception of their development but during procurement and construction stages, setting clear targets for delivery. This will include due consideration of construction method and material use in the building operation. It is generally acknowledged that this can minimise any additional costs associated with these measures. Where an assessment of the sustainability of a development is required (such as BREEAM), the applicant should engage an assessor at the earliest opportunity (concept stage where possible), as this is likely to provide the best balance between maximising the sustainability potential of the development and minimising costs.

1.10 All domestic and commercial buildings in the UK available to buy or rent must now have an Energy Performance Certificate (EPC). This indicates the energy efficiency of that building on a scale of A to G, with the most efficient ones classified as band A. The certificate uses the same scale to define the impact a home has on the environment, through their **carbon dioxide (CO<sub>2</sub>) emissions**. Improving the EPC of a property through energy efficiency measures, will not only have the advantage of improving the thermal efficiency, but will also have reduced carbon dioxide emissions and should have lower energy bills.

1.11 A report commissioned by the Department for Energy and Climate Change, published in 2013 'An investigation of the effect of EPC ratings on House prices' showed at the time, that making energy saving improvements to a home could increase its value by 14% on average. Improving the Energy Performance Certificate of an average home from band G to E or from band D to B could mean adding more than £16,000 to the sale price of the property (NB: prices in 2013). The report is thought to show that more people are conscious about the energy efficiency of their new homes and are willing to invest more in a property now if they know it will cost less to run in the future.





## 2. Policy context

2.1 The requirement for sustainable construction standards is set out in both national and local policy, the requirement to achieve sustainable development is the overarching principle of all planning policy. This is part of the ambition to improve energy security and the need reduce greenhouse gas emissions as part of tackling climate change. In recognition of this, building industry standards have been developed to ensure that the design and construction of new buildings have improved standards. Some of these standards have been integrated into local planning policies.

### The EU Renewable Energy Directive (2018/2001/EU) (2018)

2.2 The original renewable energy directive (2009/28/EC) established the policy for the production and promotion of energy from renewable sources in the EU. This original Directive, the UK was legally committed to meet a renewable energy target of 20% of its energy needs with renewables by 2020. In December 2018, the revised directive 2018/2001/EU entered into force, as part of helping the EU to meet its emissions reduction commitments under the Paris Agreement. The new Directive establishes a new

binding renewable energy target for the EU for 2030 of at least 32%, with a clause for a possible upwards revision by 2023.

### National Policy

#### The Climate Change Act

2.3 This is the UK's legally binding commitment to reduce greenhouse gas emissions to Net Zero Carbon by 2050, from a 1990 baseline. The original commitment was for an 80% reduction in greenhouse gas emissions by 2050. This target was amended in 2019 to the more ambitious net zero goal. The government expects each local authority to contribute to meeting the targets and reducing overall demand for energy. In 2018, heating and powering homes accounted for 22% of all greenhouse gas emissions in the UK. The homes that are constructed now and in the next decade will still exist in 2050 and it is therefore acknowledged that more must be done to decarbonise all buildings. So, a high standard of construction is vital to achieving these statutory carbon emission reduction targets.



## Planning and Compulsory Purchase Act 2004

2.4 Section 19 (1A) requires local planning authorities to include in their Local Plans “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”. This will be a key consideration when a Local Plan is examined.

## The National Planning Policy Framework (2019)

2.5 The National Planning Policy Framework (NPPF) was updated in 2019. Section two outlines the importance of achieving sustainable development in plan making. It states that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways, so that opportunities can be taken to secure net gains across each of the different objectives:

- an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
- a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations;

and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and

- an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy’

2.6 Section 12 of the **NPPF 2019**: Achieving well-designed places states that the creation of high-quality buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities. Being clear about design expectations, and how these will be tested, is essential for achieving this. So too is effective engagement between applicants, communities, local planning authorities and other interests throughout the process.

2.7 Paragraph 131 of the NPPF states that in determining applications, great weight should be given to outstanding or innovative designs which promote



high levels of sustainability or help raise the standard of design more generally in an area, so long as they fit in with the overall form and layout of their surroundings.

- 2.8 Section 14 of the NPPF ‘Meeting the challenge of climate change, flooding and coastal change’, paragraphs 148 to 169, includes that the planning system should support the transition to a low carbon future, should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.
- 2.9 Paragraph 149 of the NPPF states that ‘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. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.’

## National Planning Practice Guidance (2019)

2.10 The National Planning Practice Guidance sets out the following clarification in 2019:

“Can a local planning authority set higher energy performance standards than the building regulations in their local plan?”

Different rules apply to residential and non-residential premises. In their development plan policies, local planning authorities:

- Can set energy performance standards for new housing or the adaptation of buildings to provide dwellings, that are higher than the building regulations, but only up to the equivalent of Level 4 of the Code for Sustainable Homes.
- Are not restricted or limited in setting energy performance standards above the building regulations for non-housing developments.
- The **Planning and Energy Act 2008** allows local planning authorities to set energy efficiency standards in their development plan policies that exceed the energy efficiency requirements of the building regulations. Such policies must not be inconsistent with relevant national policies for England. **Section 43 of the Deregulation Act 2015** would amend this provision but is not yet in force.



- The **Written Ministerial Statement on Plan Making** dated 25 March 2015 clarified the use of plan policies and conditions on energy performance standards for new housing developments. The statement sets out the government’s expectation that such policies should not be used to set conditions on planning permissions with requirements above the equivalent of the energy requirement of Level 4 of the Code for Sustainable Homes (this is approximately 20% above current Building Regulations across the build mix).
- Provisions in the **Planning and Energy Act 2008** also allow development plan policies to impose reasonable requirements for a proportion of energy used in development in their area to be energy from renewable sources and/or to be low carbon energy from sources in the locality of the development.”

## Local Policy:

### Climate Emergency Strategy and Action Plan

- 2.11 A Climate Emergency was declared by the Council in February 2019. In order to reduce North Somerset’s carbon emissions, the Council recognises the need to make significant changes to the way we live, work, and govern.
- 2.12 A **Climate Emergency Strategy** and **Climate Emergency Action plan** have been produced. These set out the key principles for how the Council will address the causes and consequences of climate change and includes an aim for North Somerset to become a carbon neutral council and a carbon neutral area by 2030. The Climate Emergency declaration and ambition for carbon neutrality increases the urgency and need for new development to be net zero carbon. The council signed up to the **UK: 100 Net Zero Pledge** in January 2021. This reinforces the council’s commitment to achieve Net Zero by 2030.
- 2.13 This Supplementary Planning Document supports the requirements of the Climate Emergency strategy and specifically to policies of the Core Strategy (2017). Policy CS1: Addressing Climate Change and Carbon Reduction and CS2: Delivering Sustainable Design and Construction. The SPD also provides clarification to how Policy CS2 will be implemented given changes to the national policy position in relation to the Code for Sustainable Homes and the Lifetime Homes standard.



## Core Strategy Policy CS1: Addressing Climate Change and Carbon Reduction (2017):

2.14 This overarching climate change policy includes a range of sustainability aspects that are integral to creating sustainable buildings and places. The requirements of CS1:

1. development should demonstrate a commitment to reducing carbon emissions, including reducing energy demand through good design, and utilising renewable energy where feasible and viable in line with standards set out in Policy CS2; and by focusing development in accordance with the settlement strategy set out in the Area Policies;
2. developers are encouraged to incorporate site-wide renewable energy solutions to be delivered in a phased and co-ordinated way with the proposed development
3. maximise the opportunities for all new homes to contribute to tackling climate change through adherence to emerging national standards such as the Code for Sustainable Homes to ensure they perform well against evolving energy standards, and have a reduced carbon footprint;
4. developments of 10 or more dwellings should demonstrate a commitment to maximising the use of sustainable transport solutions, particularly at Weston-super-Mare. Opportunities for walking, cycling and use of public transport should be

maximised through new development and in existing areas emphasising the aim to provide opportunities that encourage and facilitate modal shift towards more sustainable transport modes;

5. a network of multifunctional green infrastructure will be planned for and delivered through new development. They should be located throughout and in adjacent developments and demonstrate a functional relationship to the proposed development and existing area including the potential to relate to the Area of Outstanding Natural Beauty. This would include not only green spaces but also the creation and enhancement of woodland areas;
6. protecting and enhancing biodiversity across North Somerset including species and habitats that are characteristic of the area, in order to support adaptation to climate change. This should be achieved through on and off-site measures to conserve and enhance species and habitats as well as the reduction or preferably elimination of any adverse impacts through sensitive design and layout and construction of developments;
7. the reduction, re-use and recycling of waste with particular emphasis on waste minimisation on development sites and the creation of waste to energy facilities in the Weston villages;
8. the re-use of previously developed land and existing buildings in preference to the loss of green field sites;



## Core Strategy Policy CS2: Delivering Sustainable Design and Construction (2017)

- 2.15 Adopted **Core Strategy** Policy CS2 sets out the following requirements:
- 2.16 'New development both residential (including conversions) and non-residential should demonstrate a commitment to sustainable design and construction, increasing energy efficiency through design, and prioritising the use of sustainable low or zero carbon forms of renewable energy generation in order to increase the sustainability of the building stock across North Somerset.
- 2.17 The greatest potential for energy saving opportunities is likely to be at larger scale developments particularly at the Weston Villages and Weston town centre. In addition, these areas are expected to demonstrate exemplar environmental standards contributing to the objectives of Policy CS1 and adding value to the local economy.
- 2.18 When considering proposals for development the council will:
1. Require designs that are energy efficient and designed to reduce their energy demands;
  2. Require the use of on-site renewable energy sources or by linking with/contributing to available local off-site renewable energy sources to meet a minimum of 10% of predicted energy

use for residential development proposals involving one to nine dwellings, and 15% for 10 or more dwellings; and 10% for non-residential developments over 500m<sup>2</sup> and 15% for 1000m<sup>2</sup> and above;

3. Require as a minimum Code for Sustainable Homes Level 3 for all new dwellings from October 2010, Level 4 from 2013, rising to Level 6 by 2016. Higher standards will be encouraged ahead of this trajectory where scheme viability specifically supports this. BREEAM 'Very Good' will be required on all non-residential developments over 500m<sup>2</sup> and 'Excellent' over 1000m<sup>2</sup>;
4. Require all developments of 10 or more new homes to incorporate 50% constructed to the Lifetime Homes standard up to 2013 and 100% from 2013 onwards;
5. Require the application of best practice in Sustainable Drainage Systems to reduce the impact of additional surface water run-off from new development. Such environmental infrastructure should be integrated into the design of the scheme and into landscaping features and be easily maintained. In moving towards zero carbon development, applicants will ensure that sustainable principles are established in the new proposals from the outset.'



- 2.19 Since adoption of the Core Strategy, changes in national policy direction following the **Housing Standards Review** meant that some of the requirements set out in Policy CS2 could no longer be applied in their adopted form. The primary change was the integration of many elements of the Code for Sustainable Homes and Lifetime Homes Standards into Building Regulations. It was stated that the energy and water efficiency requirements of the Code would be integrated into Part L and the requirements for accessibility, set out in the Lifetime Homes Standards would be met through Part M of Building Regulations.
- 2.20 It has subsequently been clarified through National Planning Practice Guidance that Local planning authorities, can set energy performance standards for new housing or the adaptation of buildings to provide dwellings, that are higher than the Building Regulations, but only up to the equivalent of Level 4 of the Code for Sustainable Homes. The Council therefore intends to implement this part of adopted policy CS2. The Council recognises that it is not restricted or limited in setting energy performance standards above the Building Regulations for non-housing developments.
- 2.21 The Council accepts that part of clause 4, applying to Lifetime Homes Standard is now out of date, upon release of this government **planning statement** and cannot be implemented. The Council's approach will be as follows:
- 2.22 In moving towards zero carbon development, applicants will be required to achieve energy performance improvement equivalent to Code for Sustainable Homes Level 4.
- 2.23 BREEAM 'Very Good' or its equivalent will be required on all non-residential developments, to include offices, schools and community schemes over 500m<sup>2</sup> and 'Excellent' or its equivalent over 1000m<sup>2</sup>; a design stage certificate is required to confirm adherence with this.
- 2.24 Links are provided to the relevant local policy guidance within this document. This is in order to assist in achieving these requirements, and in the creation of sustainable buildings and places in North Somerset.



# 3. Sustainable Design Principles – Code for Sustainable Homes

Core Strategy CS2 policy requirement:

“When considering proposals for development the council will: require designs that are energy efficient and designed to reduce their energy demands.” (Clause 1) and “require as a minimum Code for Sustainable Homes Level 3 for all new dwellings from October 2010, Level 4 from 2013, rising to Level 6 by 2016. Higher standards will be encouraged ahead of this trajectory where scheme viability specifically supports this” (Clause 3)

## Clarification on implementation of Code for Sustainable Homes

3.1 In 2015, the same year that the original version of this SPD was adopted, the Government released the Housing Standard Review and a Written Ministerial Statement which withdrew the Code for Sustainable Homes and indicated that local planning authorities would be prevented from setting energy performance

improvements for new residential development higher than those of Building Regulations.

3.2 As a direct result of these government policy statements, the Council provided a statement confirming that it would no longer seek Code for Sustainable Homes compliance for new residential development, except for legacy cases<sup>1</sup>. This has meant that from the date of that statement, the Council has not required new residential development proposals to comply with energy performance standards in excess of those set out in Building Regulations. However, clarification on whether local planning authorities can set energy performance standards higher than Building Regulations, has subsequently been provided through Planning Practice Guidance.

3.3 As the NPPG has clarified this position, the Council has reviewed its position and will **now require Code for Sustainable Homes Level 4 equivalent improvement in energy performance standards in all new residential**

<sup>1</sup> This applied to residential developments legally contracted to apply a code policy or where planning permission was granted subject to a condition stipulating discharge of a code level, and developers are not appealing the condition or seeking to have it removed or varied.





**development applications, including the conversion of agricultural, industrial and commercial properties to residential use.** This will apply from the date that this updated SPD is adopted.

- 3.4 Code for Sustainable Homes Level 4 was equivalent to a 19% improvement on the performance standards of Building Regulations 2013 – Part L1A: Conservation of Fuel and Power for new dwellings. Guidance on the documentation the Council requires to demonstrate compliance with this standard can be found in **Appendix 2.**

### Sustainable construction principles to be demonstrated

- 3.5 The energy/sustainability statement must demonstrate how the following principles have been considered and applied to the development.

### Design for health and wellbeing

- 3.6 Creating sustainable buildings is crucial in the transition towards zero carbon development, as part of tackling climate change. Designing buildings that are sustainable must also consider the health and wellbeing of future occupants. At building design stage, factors such as day lighting levels and incorporation of natural ventilation will be crucial to future health and wellbeing of occupants.

## Energy use

### Core Strategy CS1 policy requirement:

“Development should demonstrate a commitment to reducing carbon emissions, including reducing energy demand through good design, and utilising renewable energy where feasible and viable in line with standards set out in Policy CS2; and by focusing development in accordance with the settlement strategy set out in the Area Policies” (Clause 1)

### Use the energy Hierarchy

- 3.7 There is a staged approach to achieving sustainable buildings. The energy hierarchy minimises the impact of development, through reducing energy use and consequent greenhouse gas emissions. The first priority is to reduce energy demand through energy efficient design through the building fabric specification. Reducing heat losses through the ‘building envelope’ (walls, windows, doors, roof and floor) will significantly reduce energy consumption whilst maintaining the thermal comfort of the space. Energy can also be conserved through siting and orientation to maximise natural day lighting and ventilation. Energy efficient appliances, heating and



lighting controls must be used. Once energy demand reduction is achieved, building-scale renewable technologies must be used, this will provide a sustainable source of energy supply during the operational lifetime of the building. If renewable energy technology cannot be used, then low carbon technologies should be incorporated into the design.

- 3.8 A major proportion, around 60% of energy consumption in residential dwellings is used to heat space. Improving the performance of the buildings 'fabric' is essential to reducing energy demand. The rate of heat loss is often calculated using U-values, which expresses how well parts of a building transfer heat. High U-values indicate poor thermal performance of the building envelope. More information on methods to reduce heat losses can be found in the **retrofitting Section**.
- 3.9 Monitoring equipment should be incorporated which will include smart energy meters to collect information about energy use in the building. It's anticipated that this will lead to behavioural change in the way energy is used. Smart heating controls can also improve the efficiency and should be integrated wherever possible.

## Consider embodied energy and whole life cost of buildings

- 3.10 It should be recognised that energy is consumed, and greenhouse gases are emitted both during construction of buildings as well as during use. Operational energy is the amount of energy that is required to run a building over its design life and includes lighting, heating and appliances. The measure of embodied energy or carbon within a building, is a measure of the total emissions generated by resource extraction, transportation, manufacture and construction of that building. The whole life cost of a building is a measure of the impacts on the environment during manufacture, use and at end of life of the building and this should be recognised. This should be one of the factors considered by developers when deciding between different approaches to development. There is a strong argument for the retention of existing buildings due to the embodied emissions within buildings, making their re-use often the most sustainable alternative.
- 3.11 This guidance demonstrates that there is a wide range of factors to be considered which affect both operational and embodied carbon and energy. Factors to consider also includes, the selection of construction materials, their thermal mass and the siting and orientation of buildings.



## Material Use:

- 3.12 Buildings should be designed to use materials as efficiently as possible, starting with the materials used in construction. Using naturally derived materials, such as those with recycled content e.g. old newspapers, sheep wool for insulation and renewable materials and Forest Stewardship Council (FSC) locally-sourced (where possible) timber for wood use, can minimise the negative impact of material use. Naturally derived materials generally have a lower embodied energy content. The use of plastics and other synthetic materials should be minimised. Locally sourced materials are the preference in most cases. The distance from which materials are sourced and therefore the impact of their transportation should be taken into consideration in material choice.
- 3.13 Optimising thermal mass can help retain heat by absorbing the sun's energy, or if exposed, lose heat to the cooler external environment. Building materials that are heavyweight (e.g. brick, concrete) absorb and release heat in buildings to help moderate the temperature. Designing out thermal bridges (gaps) will prevent heat loss through the building envelope. This will need to be an integral part to any sustainable building design.

## Siting and orientation

- 3.14 Appropriate siting and orientation can significantly reduce the energy requirement of a typical building. The aim is to maximise natural daylight and sunlight into a building through passive design measures. This will take advantage of the natural characteristics in building materials and air to help reduce the additional energy needed for heating and cooling.
- 3.15 Passive design measures must not increase the potential of a building to overheat. Inadequate natural ventilation must be avoided as is likely to contribute to overheating. Assessing overheating risk is an important part of any design process and with a warming climate, assessing this potential will become increasingly important. The government has acknowledged that the risk of overheating and the provision of adequate ventilation in new residential buildings, must be addressed. As part of the consultation response to the Future Homes Standard in early 2021, a consultation was launched on a draft Approved Document to address overheating in new residential buildings.



- 3.16 Where possible and where it would not impact on the efficient use of available land, it would be advantageous for the main orientation of a building should be within 30° of south. Buildings oriented south-east will benefit from the morning sun and those south-west will benefit from the late afternoon sun. Optimising the orientation and pitch of a roof to maximise sun and daylight exposure will also benefit the energy that can be gained from solar panels located on the roof.
- 3.17 South/southwest facing rear gardens should be provided where possible to allow washing to dry naturally outdoors, reducing the need to use energy intensive tumble driers.
- 3.18 As previously mentioned, both operational and embodied carbon consideration should be integrated into the building design at concept stage. Measures whole life carbon cost and embodied carbon will become increasingly important as we move towards net Zero Carbon developments. Guidance on embodied carbon reduction strategies is available from the London Energy Transformation Initiative (LETI) [Climate Emergency Design Guide](#) and in the [Embodied Carbon Primer](#). A [Whole Life carbon vision](#) is available from the World Green Building Council.

## Waste management

### Core Strategy CS1 Policy requirement:

“The reduction, re-use and recycling of waste with particular emphasis on waste minimisation on development sites and the creation of waste to energy facilities in the Weston villages” (Clause 7)

- 3.19 Building construction accounts for over a third of all waste created in the UK every year. Developers must consider the re-use of materials to create new buildings and should also consider how existing buildings on a site can be retained and adapted for re-use.
- 3.20 All developments must include suitable waste and recycling storage facilities. The Environmental Protection Act 1990 sets out the framework for waste management.
- 3.21 As set out in **Core Strategy CS7: Planning for Waste** – ‘New housing, retail, industrial and commercial development should be designed to facilitate easy and efficient waste collection, incorporating appropriate facilities such as collection points for recyclable material, in addition, developers must work closely with the local authority to implement schemes which use council-supported kerbside and recycling collection services.



- 3.22 Community composting schemes are encouraged. The **Waste and Resource Action Programme** provides advice for communities wishing to set up community composting and anaerobic digestion schemes.

## Water use

### Core Strategy CS1 policy requirement:

“Developments should demonstrate water efficiency measures to reduce demand on water resources, including through the use of efficient appliances and exploration of the potential for rainwater recycling.” (Clause 11)

- 3.23 A large proportion of water used in homes does not need to be of drinking quality. Implementing measures to reduce water use including water efficiency devices (water saving taps and showers, low flow toilets, water efficient appliances) and rainwater harvesting through using a tank to collect water or re-using water via greywater recycling should all be considered.
- 3.24 Other simple measures should be implemented which will reduce water use, including the use of water butts, collecting grey water for reuse. This can be used for gardening purposes, or where plumbed-in can be used for toilet flushing. **Waterwise** provide advice on how to save water use in buildings.

- 3.25 Water can be unnecessarily lost through leaking toilet flushes. Modern dual flush buttons containing drop valves can cause continuous flow of water and therefore lead to water loss. Water loss in this circumstance can be prevented through the use of siphon valves in toilet flushes. Dual flushes may also use excess water where the incorrect buttons are used. Unnecessary water loss will lead to increased water bills and carbon emissions associated with the water treatment process so must be prevented in all circumstances.

- 3.26 Groundwater may also be extracted for use, where possible and permitted by the **Environment Agency**. New development should however ensure it does not adversely impact on water quality within Source Protection Zone’s or surface and groundwater. This could result in, for example, the need for further treatment of drinking water which will increase carbon dioxide footprint for this sector significantly. All such development should take place in low risk areas or mitigation put in place to offset any impacts for the life span of the development.

### Reducing surface water run-off

- 3.27 Surface water run off can be an issue with any new development, creating a range of flood risk issues. Run-off is exacerbated where there are few permeable surfaces in the urban environment. This can be reduced by adding permeability, for example through adding green infrastructure, including green roofs



and trees. The use of trees to intercept heavy rainfall, retain moisture and return water to the atmosphere through evapotranspiration will be increasingly important as the climate changes. Drains that cannot cope during heavy rain downpours and can add to the problem. Guttering and drainage systems can be designed with increased rainfall in mind as part of a **climate change adaptation strategy**.

- 3.28 It's important to incorporate sustainable drainage (SuDS) in all developments to prevent an increased volume of surface water run-off during heavy rainfall. Simple, natural solutions can often be possible although for some, site engineering options will need to be explored. The **SuDS Section** provides more detail on the policy requirement.



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## Sustainable and active Travel

### Core Strategy CS1 Policy requirement:

“Developments of 10 or more dwellings should demonstrate a commitment to maximising the use of sustainable transport solutions, particularly at Weston-super-Mare. Opportunities for walking, cycling and use of public transport should be maximised through new development and in existing areas emphasising the aim to provide opportunities that encourage and facilitate modal shift towards more sustainable transport modes”  
(Clause 4)

3.29 In line with the council’s Parking Standards SPD, new developments must include space to store cycles that is secure, weather-proof and accessible. Cycle stores should be provided at ground level and be of sufficient size to allow the requisite number of bicycles to be stored. For all cycle parking, it is required that both wheels can rest on the ground. If car parking space is used to store cycles, this must not create issues such as pavement parking. A review of the Parking Standards SPD is currently underway and scheduled for public consultation in 2021. This review looks to introduce minimum requirements of Electric Vehicle (EV) charging infrastructure, as well as greater

provision of Car Club spaces at new development, particularly in town centre locations. Opportunities to provide both excellent EV charging infrastructure and Car Club provision should subsequently be maximised.

3.30 The West of England Joint Local Transport Plan 4 (JLTP4) is North Somerset’s adopted regional transport strategy and policy document. It sets out how we aim to achieve a well-connected, sustainable transport network that works for residents, businesses and visitors across the region; a network that offers greater, realistic travel choices and makes walking, cycling and public transport the natural way to travel. The five objectives of the JLTP4 are as follows:

- Take action against climate change and address poor air quality;
- Support sustainable and inclusive economic growth;
- Enable equality and improve accessibility;
- Contribute to better health, wellbeing, safety and security;
- Create better places.



3.31 A range of more specific policies set out how we will make walking, cycling and public transport the natural way to travel, including for local authorities to develop their own more specific walking and cycling, or 'active travel' strategies. These local level strategies and policies set out in more detail how we will ensure that lower carbon forms of transport will be the easier and preferred choice for short and medium length journeys.

3.32 North Somerset Council has developed, consulted upon and is now set to adopt its Active Travel Strategy to cover the 2020 to 2030 period. This is to more clearly define how we will use a mixture of physical improvements to our transport network for safe and enjoyable active travel journeys for everyone, as well as education, training and publicity drives to increase uptake in these lower carbon transport choices whenever possible. The Active Travel Strategy, due to be adopted in April 2021, sets out to:

- Deliver safe and frequent active travel to enable improved public health;
- Tackle the Climate Emergency;
- Drive local economic development;
- Shape active travel neighbourhoods through an active travel focused planning system.

3.33 This Active Travel Strategy is different from any other walking and cycling strategy produced by the Council, where it seeks to use the recent shift in national government priority and funding opportunities for high quality active travel infrastructure and awareness to ensure that from now, active travel will be the number one priority within transport planning and considerations. This seeks to build on the Policy DM25 of the North Somerset Sites and Policies Plan Part 1, which sets out that in order to facilitate modal shift away from private vehicle use it is essential that new developments provide excellent walking and cycling infrastructure. Policy DM25 requires that all new development provide appropriate pedestrian and cycle access. This includes pedestrian and cycling links to the nearest schools

3.34 The Active Travel Strategy is clear that we will:

- create active travel neighbourhoods from new and transform existing neighbourhoods dominated by the motor car to create green, safe and active environments.
- design and build infrastructure to give priority to pedestrians and cyclists over vehicular traffic and segregate paths away from traffic wherever possible.





- 3.35 This will help ensure that we will transform our transport network from spaces where people are 'able' to walk and cycle to environments in which they are 'invited' to walk and cycle.'
- 3.36 Public transport also has a huge role to play. Public transport offers the opportunity to use less vehicles on our transport network by getting more people into fewer (and cleaner) vehicles, reducing our emissions from transport and enabling us to better use the limited space we have on our transport network. After the March 2021 release of the Bus Back Better national bus strategy, North Somerset Council will set out more clearly and in more detail than JLTP4 how we as a Council will prioritise resources to improve public transport options the natural way to travel for medium and longer journeys (as well as shorter journeys for people not able to use active travel).

## Land use ecology

- 3.37 Opportunities should be sought to enhance and create new habitats to support biodiversity. The retention of elements of pre-existing landscapes, such as rhynes, roads and hedgerows, can help to integrate new development into its physical surroundings. Native species should be used where new planting takes place to sustain and enhance distinctiveness and local biodiversity. To improve resilience, natural regeneration should be considered in the first instance, and planted trees should be sourced and grown in the UK to help avoid the introduction and spread of disease.



# 4. Renewable and Low Carbon Energy Generation

Core Strategy CS2 policy requirement:

"When considering proposals for development the council will, require the use of on-site renewable energy sources to meet **a minimum** of 10% of predicted energy use for residential development proposals involving one to nine dwellings, and 15% for 10 or more dwellings; and 10% for non-residential developments over 500m<sup>2</sup> and 15% for 1000m<sup>2</sup> and above."(Clause 2)

- 4.1 The Council is committed to the deployment of renewable and low carbon energy generation measures and aims to:
- The policy requirement of 10% and 15% of predicted energy to be met through renewable energy sources is a minimum policy requirement. Developers are encouraged to maximise renewable energy and low carbon energy use as part of a sustainable design strategy.
  - Maximise the potential for local economic, environmental and social benefit in implementation of renewable and low carbon energy generation.
  - Facilitate renewable and low carbon energy development that is appropriate in North Somerset.
  - Encourage a high degree of community involvement, understanding the benefit from using energy more efficiently and developing North Somerset's renewable and low carbon energy resources.



- 4.2 The Council works with other local authorities, partner organisations and community interest groups across the district with the aim of increasing the proportion of energy from renewable and low carbon sources.
- 4.3 Renewable and low carbon forms of energy generation are part of any sustainable energy strategy. However, it is recognised that the principles of the energy hierarchy should be followed. The total energy demand of a building should be prioritised through energy efficiency measures ahead of the installation of renewable and low carbon energy generation.

### Which renewable and low carbon technologies are most suitable?

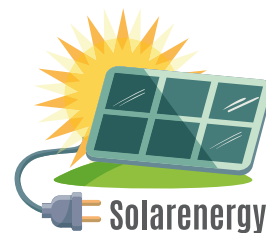
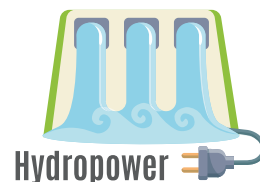
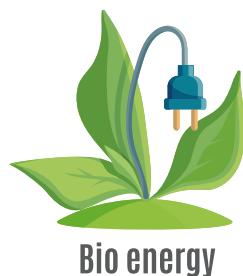
- 4.4 The Council does not prescribe the type of renewable energy which should be used to meet the policy requirement. It instead advocates that a range of technologies are explored. The process for determining which technology is used, should be detailed within the **sustainability/energy statement**. The developer should choose a technology that gives the best performance, is cost effective and has no insurmountable impacts on the surrounding area. In each instance through the development of the design and feasibility, the available renewable energy resources should be considered.

- 4.5 The range of individual building-scale technologies to consider will include:
- Solar photovoltaic and solar thermal panels
  - Heat pumps (air, water or ground)
  - Biomass burners and boilers
  - Mechanical heat recovery systems
  - Domestic/micro Combined Heat and Power systems (CHP)
  - Wastewater heat recovery systems
- 4.6 Technologies which may be suitable for larger-scale developments and larger buildings:
- Hydropower
  - Solar photovoltaic (PV) arrays
  - Combined Heat and Power systems (CHP)
  - Wind turbines
  - District heating schemes



- 4.7 The **Solar PV arrays Supplementary Planning Document** (2015) sets out the requirements for large-scale solar developments in North Somerset. This guidance will be reviewed in light of the Council's climate emergency declaration.
- 4.8 The **Wind Turbines Supplementary Planning Document** (2014) sets out the requirements for wind turbine developments in North Somerset. This guidance will be reviewed in light of the Council's climate emergency declaration
- 4.9 Buildings which generate renewable energy maximise efficiency by using the energy as it is being generated. This may require behavioural change in the way energy is used in the home, for example, only using appliances when solar PV generation is at its peak during the daytime. The same applies to the hot water heated by solar thermal panels, to likewise (where possible) use this during daytime hours.

- 4.10 Using the renewable and low carbon energy generated on site is far more efficient than exporting to the national grid system. This is because some of the power that is generated is lost in transmission and distribution. Therefore, the shorter the distance electricity travels the better. Small scale local generation of energy from renewable and low carbon sources is likely to be preferable to centralised generation.
- 4.11 A report identifying the **potential for wind and solar energy generation in North Somerset** was produced in 2014. The purpose of this report is to identify the least constrained locations for locating large scale wind and solar technologies in the district. An updated Renewable Energy Resource Assessment Study (RERAS) was commissioned in 2020. This study will identify the best locations for a range of renewable and low carbon technologies, including renewable heat sources and opportunities for heat networks. The study will also identify a target for renewable energy generation for North Somerset. The evidence will be used to inform policy relating to renewable energy and addressing the climate emergency within Local Plan 2038. The report is due to be published in the Spring of 2021.



# 5. BREEAM assessments

Core Strategy CS2 policy requirement:

When considering proposals for development the council will “BREEAM ‘very good’ standard will be required on all non-residential developments over 500m<sup>2</sup> and ‘Excellent’ over 1000m<sup>2</sup>.” (Clause 3)

5.1 The **Building Research Establishment Environmental Assessment Methodology (BREEAM)** is used for assessing best practice in sustainable building design, construction and operation of non-residential buildings. It is used to improve, measure and certify the social, environmental and economic sustainability of buildings. BREEAM is assessed using a system of credits in the following nine assessment categories:

- Health and Wellbeing
- Management
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use and Ecology
- Pollution



- 5.2 The BREEAM assessment drives the priority measures towards minimising the energy demands of a building, before considering energy efficiency and renewable and low carbon technologies, using the principles of the energy hierarchy.
- 5.3 The Building Research Establishment (BRE) produced a **BREEAM New Construction technical manual 2014, which was updated in 2018**. This should be used at project inception to ensure that BREEAM certification is followed. It is also crucial for developments to integrate the BREEAM process at this stage, as it will



greatly reduce the costs associated with meeting the required BREEAM standards.

- 5.4 BREEAM certification not only applies to new construction, there are also standards for refurbishment and an overarching aspiration for large developments creating BREEAM certified new communities.
- 5.5 Where the BREEAM certification process is followed, a Pre-Assessment or (design stage) report should be supplied with the planning application. Applicants are also encouraged to submit a Post Construction (PC) certificate. However, the costs of providing this documentation should not be at the expense of contributions to other elements/ S106 items and/or other policy requirements where schemes are close to the margins of viability.

### When BREEAM requirements cannot be met

- 5.6 In carrying out the financial appraisal, the costs of instructing professionals to carry out the BREEAM (or equivalent) assessments/work associated with part compliance should be factored into the professional fees and form part of the gross development costs. These costs should be deducted from the gross development value and assumptions made around developer/landowner return to determine viability.
- 5.7 Where a successful case has been made demonstrating non-viability in meeting the required BREEAM standards, it may be permissible for

applicants to apply a lower standard or potentially utilise alternative strategies.

- 5.8 Where applicants do not use the BREEAM certification process, the Council will require a clear demonstration of how the building(s) will be constructed to an equivalent standard through the submission of independent supporting information.
- 5.9 The onus will be on the developer to justify why the required rating (either Very Good or Excellent) is not achievable – such reasons will have to be robust in planning policy and sustainability terms. These will be assessed on their merits at the planning application stage.
- 5.10 Exceptions to these minimum standards may be allowed in cases of buildings in conservation areas, but only when a developer can show that it is not practical or commercially viable to achieve the minimum standards or would result in adverse effects which harm the character or appearance of the historic environment.



# 6. Sustainable Drainage Systems

Core Strategy CS2 policy requirement:

“When considering proposals for development the council will “require the application of best practice Sustainable Drainage Systems to reduce the impact of additional surface water run-off from new development, in-line with the requirements of the national standards for SuDS. Such environmental infrastructure should be integrated into the design of the scheme and into landscaping features and be easily maintained.” (Clause 5)

- 6.1 Flooding can threaten lives and cause substantial negative social and economic effects to people, property, infrastructure and agricultural land. Historical flooding within North Somerset has demonstrated these devastating effects. There have been a number of significant flooding incidents in North Somerset in 1968, 1989-90, 2008 and more recently in 2012 which was the wettest year on record in the UK. Indeed, during 2012 it is estimated that approximately 340 properties flooded internally across North



Surface Water Flooding at Elm Tree Road in Locking (2012)

Somerset. As part of our strategy to manage flood risk we are using Sustainable Drainage systems.

- 6.2 Core Strategy Policy CS2 (clause 6, outlined above) and CS3: Environmental Impacts and Flood Risk Assessment, require best practice in Sustainable Drainage Systems to reduce the impact of additional surface water run-off from new development.
- 6.3 Sustainable Drainage (SuDS) approach regards rainwater as a natural resource, whereas traditional approaches have always regarded rainwater as being waste with the aim of discharging water as quickly as possible. SuDS approaches aim to manage runoff from development, so that it not only delivers



effective long-term site drainage, but it also minimises impacts on the receiving environment. This is achieved by harvesting, infiltrating, slowing, storing, conveying and treating run off to improve water quality. SuDS philosophy and concepts are not new with many existing developments in North Somerset already taking this approach.

6.4 There are many benefits to communities met through SuDS, these can include:

- Health and wellbeing of the communities they serve
- Increased biodiversity and habitat creation
- Improving access to recreation in clean water environments
- More aspirational development and places

6.5 The Council welcomes pre-application discussions and will look for a proof of concept plan and drainage strategy or Masterplan, which is based on known drainage and flooding information on the site. Early pre-application discussion will allow time for integration of sustainable drainage into the design of a site and use the water as a resource and manage flows across the site. Consultations undertaken at this stage will reduce the time and cost of doing so in later stages. This approach to SuDS is set out in the Council's joint guidance document **West of England Sustainable Drainage Developer Guide and North Somerset's**



Example of SuDS attenuation ponds: Portishead



Example of SuDS swale: Long Ashton





**Sustainable Drainage Design Guidance** which offers advice on the implementation of policies CS2 and CS3. Reference should also be made to the CIRIA **SuDS Manual C753**.

## Principles for effective SuDS

Plan SuDS from the start

- 6.6 Use a proof of concept plan to look at the opportunities and constraints on a site. Built up areas are designed to be outside of potential flood risk zones and flow routes, and open spaces can be designed to accommodate exceedance flow routes.

Replicate natural drainage

- 6.7 Runoff should be reduced to greenfield rates where possible. Designs should be integrated with the rhine network in Internal Drainage Board areas, and watercourses remain open with culverting for access only, so biodiversity and habitats are not lost, and flood plains remain connected. A new North Somerset Green Infrastructure Strategy will contain detail on this.

Prevention and Source Control

- 6.8 Good site design should identify opportunities to make use of water as a resource through rainwater reuse and harvesting. Source control techniques should be used to infiltrate runoff into the ground where site conditions allow.

## Integrated design

- 6.9 Integration is the key to good design within the layout of the development. Attenuation ponds should not be bolted on to the end of a design but incorporated into the green spaces, to give amenity and habitat areas which link to the wider green infrastructure

## Design for easy maintenance and access

- 6.10 Design should allow for undertaking future maintenance and plans should be prepared to define future responsibility for the system. Design should consider the whole life of the development.

SuDS management train

- **Prevention:** At an individual property level water can be controlled by a simple water butt, green roof or by rainwater harvesting. The use of green roofs can contribute to the insulation of a property and provide a roof garden; rainwater harvesting can reduce water bills, in all cases surface water leaving the property is reduced.
- **Source Control:** No space is too small; water can be infiltrated into the ground via green spaces, rainwater gardens or permeable paving so that the amount of water that goes beyond the property boundary is reduced. Bioretention provides small storage areas before water is infiltrated and can be connected to site control features.



- **Site Control:** Where surface water needs to be conveyed over the site, above ground systems are recommended, with a network of swales and ponds which follow the natural drainage pattern of the site.
- **Regional Control:** on larger sites and phased developments the downstream management of run-off for the whole site may be more appropriate with wetlands and ponds.
- SuDS approaches are not a one size fits all type of system, due to topography, ground conditions and the size of the site; it may be that a combination of the above needs to be part of the solution.
- Some ground infiltration SuDS will not be suitable in brownfield sites, due to the increased risk of creation of contaminated water pathways. Other SuDS solutions should be sought in this case.
- The key to good SuDS design is to integrate water as part of the amenity space or habitat requirements and to use it to manage diffuse pollution. **Susdrain**<sup>2</sup> have shown in recent case studies that SuDS design can account for a 5% to 10% saving on capital costs compared with traditional systems. Long term maintenance of above ground systems is also shown to be less than traditional systems Wessex Water adopt and maintain sustainable drainage systems when they

are built to the standards set by them.

- 6.11 One of the biggest advantages for SuDS is that it can create a community space and reduce the surface water runoff helping to manage the risk of flooding to property and people downstream. Meeting sustainable drainage criteria as set out in the **West of England Sustainable Drainage Developer Guide** and Section 2 of **North Somerset's Sustainable Drainage Design Guidance** will fulfil these requirements.
- 6.12 Maintenance and access to the SuDS components is important over the lifetime of the development. Access for grass cutting and/or maintenance of a minimum of five metres will be required, as in many cases vehicle access will be required. Detailed maintenance plans and schedules which give clear guidance on how the system is maintained and details of the owners of the various elements are part of the planning requirements when **submitting an application**.



<sup>2</sup> Susdrain, delivered by the Construction Industry Research and Information Association: <http://www.susdrain.org/>



# 7. Climate change adaptation measures

## Core Strategy CS1 policy requirement:

“Areas will be enhanced to be resilient to the impacts of climate change including flood defence and public realm enhancements including the integration of effective shading through, for example, tree planting” (clause 10)

- 7.1 The typical design life of a new dwelling is a minimum of 100 years and for a new industrial building is a minimum of 60 years, but many buildings are in use for much longer periods. Therefore, when designing buildings now, due consideration should be given to whether they will still be suitable for changing conditions likely to be experienced over this duration of time. Designers should build in flexibility into developments to allow future adaptation if it is needed.
- 7.2 All **sustainability/energy statements** should contain detail on how changing climatic conditions have been considered as part of the design of the development.
- 7.3 There are a number of weather-related changes which are due to climate change, will should be considered.

These have the potential to have a detrimental impact on buildings. These changes may include:

- Increased frequency and intensity of rainfall, leading to pressure on drainage systems and therefore increased risk from flooding.
- Increased frequency of heat waves, leading to issues of overheating and the need for cooling systems.
- More prolonged periods of drought with adverse impacts on building materials and water shortages, and
- More frequent extreme weather events, including strong winds which could damage buildings.

- 7.4 As a response to the above, a range of building-scale adaptation measures should be incorporated into new or existing buildings. This should include:

### Flood resilience measures:

- raising floors above likely flood levels
- avoiding fitted carpets on ground floor level
- moving electrics to well above the likely flood level
- use of solid floors rather than suspended floors
- replacing mineral insulation within walls with closed cell insulation



- replacing gypsum plaster with water resistant material, such as lime plaster
- installing chemical damp-proof course below joist level
- replacing wooden doors, windows, frames with water-resistant alternatives
- replacing chipboard kitchen/bathroom units with plastic units
- treating timber to resist water logging or use marine plywood for shelves and fittings
- use of one-way auto seal valves on toilets
- increased capacity guttering and drainage systems
- Implementing methods to waterproof basements

### Measures to avoid overheating

- using materials with a high thermal mass
- design-in green infrastructure/vegetation, including water features for passive cooling, green roofs/walls – which will keep heat out and its surroundings cool
- using materials with highly reflective surfaces
- locating spaces that need to be cool or that generate heat on the north side of development
- using carefully designed shading measures, including balconies, louvres, roof overhangs, internal or external blinds, shutters, trees and vegetation

- designing the building and its internal layout to enable passive ventilation, measures, such as cross ventilation which will include operable windows, a shallow floor plan, high floor to ceiling heights, a double façade
- minimising internal heat gains by using low energy equipment, including energy efficient lighting and insulating hot water pipes
- selecting the most energy efficient ventilation and cooling systems – avoiding traditional air conditioning systems, which will increase energy demand
- implementing tri-generation district heating which combines cooling alongside heat and power generation. Good practice will include integrating green corridors within all district heating schemes.

### Measures to minimise the urban heat island effect<sup>3</sup>

Development-scale adaptation measures which can be implemented to reduce the likelihood of UHIE can include:

- providing sufficient space to be built in between buildings to allow cooling

<sup>3</sup> UHIE: an urban area that's significantly warmer than the surrounding countryside, especially at night. This is due to the land surface in towns and cities, made of man-made materials which absorb and store heat. This coupled with concentrated energy use and less ventilation than in rural areas, creates a heating effect. Often up to 10 degrees Celsius hotter than surrounding countryside.





- living walls and green roofs on buildings to allow cooling/shading
- provision of street trees and other green infrastructure to maximise cooling effect
- providing orchards and allotment spaces on developments

7.5 All buildings should be designed to be robust to withstand storms and high winds, and which can be easily maintained and repaired. No adaptation measures should increase energy use or cause potentially harmful effects – **maladaptation**. An example of this would be to design buildings to maximise solar gain in winter without thinking through the potential for the building to overheat in the summer.

### Measures incorporating green infrastructure and rewilding

## Core Strategy CS1 Policy Requirement:

“A network of multifunctional green infrastructure will be planned for and delivered through new development. They should be located throughout and in adjacent developments and demonstrate a functional relationship to the proposed development and existing area including the potential to relate to the Area of Outstanding Natural Beauty. This would include not only green spaces but also the creation and enhancement of woodland areas; (Clause 5)

- 7.6 **Core Strategy** policy CS9 sets out the current Green Infrastructure planning policy. It states that the existing network of green infrastructure will be safeguarded, improved and enhanced by further provision, linking into existing provision where appropriate, ensuring it is a multi-functional, accessible network which promotes healthy lifestyles, maintains and improves biodiversity and landscape character and contributes to climate change objectives. Priority will be given to:
- the protection and enhancement of the formal parks and gardens originating from the Victorian era;
  - the protection and planting of trees in woodlands and urban areas, particularly native trees, for public amenity and climate change mitigation and



- benefits to biodiversity, health and recreation;
- the promotion of the north slopes of the Mendip Hills AONB as sub-regional corridors for biodiversity, recreation and landscape retention;
- the promotion of the Congresbury Yeo, River Banwell, North Somerset Levels and Moors, and Grumblepill Rhyne as local corridors for biodiversity and landscape enhancement;
- the protection and enhancement of biodiversity;
- the connection of disjointed woodlands, particularly ancient and semi-natural woodland, such as those around the Wraxall/Failand ridge;
- the continued development of a network of green spaces, water bodies, paths and cycleways and bridleways in and around the urban areas, recognising the value of sustainable drainage systems for green infrastructure;
- the management, maintenance, upgrading and extension of the public rights of way network including improved connectivity to areas of green infrastructure within and outside North Somerset;
- the provision of strategically significant green spaces in association with all areas of development.

7.7 The Council has recently demonstrated its commitment to rewilding in North Somerset. The aim is to create new habitats to enable wildlife to flourish as well as

helping to address climate change. This rewilding will include planting new trees and letting some areas of grass grow longer.

7.8 The Council is in the process of developing a new Green Infrastructure Strategy. The Strategy will set out the strategic Green Infrastructure network within North Somerset and will provide the framework for improving connectivity, quality and overall provision of Green Infrastructure for both people and wildlife in North Somerset. One of the key aims of the strategy will be to provide greater resilience to climate change, where natural solutions are provided to build resilience. This may include in schemes to stabilise slopes to attenuate flood water, absorb carbon and increase the use of trees to reduce urban heating.

7.9 One of the purposes of the Green Infrastructure strategy will be to identify projects that can enhance the natural environment across the district. It is anticipated that this new GI strategy will be adopted in 2021 and will inform the Green Infrastructure policy for Local Plan 2038. Once adopted, the new Green Infrastructure strategy should be used to inform and where applicable, identify appropriate climate change adaptation measures in North Somerset. A **consultation** will be held on the emerging Green Infrastructure Strategy in February 2021.



# 8. The Future Homes Standard and future Zero carbon policy

- 8.1 In 2019 the government signalled its intention to improve the energy performance of new residential development through its consultation '**The Future Homes Standard – changes to Part L and Part F of Building Regulations for new dwellings.**' The consultation set out the intention to uplift energy efficiency standards through Building Regulations – Part L (Conservation of fuel and power) in 2020, which would be a stepping-stone to the Future Homes Standard (FHS) to be introduced in 2025.
- 8.2 The **FHS consultation response from government** was released in January 2021. This has provided clarification on a number of issues surrounding the implementation of the Future Homes Standard 2025, the interim standards to be applied to Building Regulations and the role of local authorities in setting energy performance standards for new residential development.
- 8.3 The role of Local Planning Authorities in setting energy efficiency requirements for new homes that go beyond the minimum standards set through Building Regulations is clarified in Chapter 2 of the FHS consultation response. This confirms that in the immediate term, the government will not amend the Planning and Energy Act 2008, which means that local authorities retain the power to set local energy efficiency standards for new homes.
- 8.4 Paragraph 2.39 of the FHS consultation response says: 'All levels of Government have a role to play in meeting the net zero target and local councils have been excellent advocates of the importance of taking action to tackle climate change. Local authorities have a unique combination of powers, assets, access to funding, local knowledge, relationships with key stakeholders and democratic accountability. This enables them to drive progress towards our national climate change commitments in a way that maximises the benefits to the communities they serve. As part of this, the Government wishes to ensure that we have a planning system in place that enables the creation of beautiful places that will stand the test of time, protects



and enhances our precious environment, and supports our efforts to combat climate change and bring greenhouse gas emissions to net zero by 2050.'

- 8.5 Paragraph 2.40 then says 'We recognise that there is a need to provide local authorities with a renewed understanding of the role that Government expects local plans to play in creating a greener built environment; and to provide developers with the confidence that they need to invest in the skills and supply chains needed to deliver new homes from 2021 onwards. To provide some certainty in the immediate term, the Government will not amend the Planning and Energy Act 2008, which means that local planning authorities will retain powers to set local energy efficiency standards for new homes.'
- 8.6 The **Future Homes Standard consultation in 2019** outlined two approaches to increasing the energy efficiency standards of Building Regulations. The government's response has confirmed that it will implement 'Option 2 – Fabric plus technology' approach. This uplift in Part L energy efficiency standards will equate to a 31% reduction in carbon dioxide from new dwellings, compared to the current 2013 standards. It states that this option is likely to encourage the use of low-carbon heating and/or renewables. The performance standard is based on the energy and carbon performance of a home with:

- an increase in fabric standards
- a gas boiler
- a wastewater heat recovery system
- Photovoltaic panels

- 8.7 The FHS consultation response sets out that the Building Regulations interim Part L Regulations will come into effect in June 2022.
- 8.8 The Future Homes Standard will be introduced in 2025 with new homes expected to produce 75 – 80% fewer carbon dioxide emissions compared to an average semi-detached home built to meet the current 2013 Part L requirements. Further consultation on the standards for Future Homes will take place in 2023 with the intention of legislation to be in place in 2024 ahead of full implementation of the FHS in 2025.
- 8.9 The consultation response has also outlined that existing homes will also be subject to higher standards – with a significant improvement on the standard for extensions and replacements, repairs and parts to be more energy efficient. This is likely to include installing heat pumps in place of new gas boilers. The consultation response report also outlines measures to tackle ventilations and overheating issues.





- 8.10 Alongside the response to the FHS consultation, a separate consultation was launched on higher performance targets for non-domestic buildings – the **Future Buildings Standard**, to ensure they will be zero carbon ready by 2025.
- 8.11 The Future Homes Standard is the national stepping-stone to national Zero Carbon policy 2050. However, if it can be demonstrated that local zero carbon standards are achievable, then these may be introduced through local policy ahead of national policy being introduced. Local policy will set out the requirements to achieve the highest possible standards where financial viability is demonstrated. This is driven by the Climate Emergency declaration and ambition to become carbon neutral by 2030. **Section 10** provides detail on viability assessments.

### Meeting the required energy performance/ carbon standard

- 8.12 To meet the current energy performance/ carbon emissions standard required through local policy, the carbon dioxide emissions from regulated energy use must be limited.
- 8.13 Carbon dioxide reductions should be measured from energy efficiency measures only and it is these that should be calculated. This will start from a baseline of the Target Emissions Rate (TER) to produce a Dwelling

Emissions Rate (DER) or Building Emissions Rate (BER) figure (if not a residential dwelling). This DER or BER figure will need to be 19% lower than the TER in order to demonstrate compliance with clause 3 of policy CS2.

- 8.14 Guidance on how to demonstrate that the required 19% improvement on Part L Building Regulations through the SAP assessment process can be found in **Appendix 1**.

### The different approaches to achieve low and zero carbon standards

- 8.15 The fabric performance of a building must be minimised and far lower than the Fabric Energy Efficiency Standard (FEES). The FEES is the proposed maximum space heating and cooling energy demand for homes. This is the amount of energy which would normally be needed to maintain comfortable internal temperatures in a dwelling, this is measured in kWh/m<sup>2</sup>/year. There are a range of approaches which could be taken to achieve carbon reduction. Options will include:
- 8.16 **An extreme fabric approach:** with fabric performance significantly higher than the FEES, high efficiency is achieved with little or no renewable energy. This will have overall emissions at or below the carbon compliance level, the remaining emissions are eliminated



through offsite measures (allowable solutions). The **Passivhaus standard**<sup>4</sup> is an example of this.

- 8.17 **Extreme Low Carbon Technologies:** This approach uses only fabric and on-site energy solutions (no **Allowable Solutions**) it therefore relies on high fabric performance (considerably higher than FEES) and extensive use of sustainable technologies (to beyond the carbon compliance standard).
- 8.18 A balanced approach, with fabric performance at Fabric Energy Efficiency Standard (FEES) level, focusing on renewable and low carbon technologies. This achieves overall emissions at or below the carbon compliance level. The remaining emissions are met through offsite carbon reduction measures, often referred to as **Allowable Solutions**.

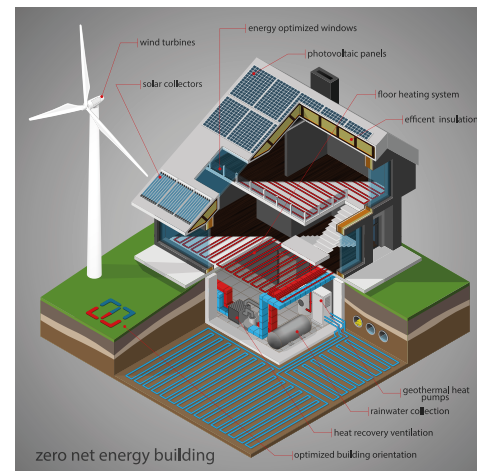
## Costs of building to zero carbon homes standards

- 8.19 A study to investigate the **cost of carbon reduction in new buildings** was completed for the West of England Authorities, including North Somerset Council in 2018. The analysis suggested that it is possible to achieve net zero regulated carbon emissions from a combination of energy efficiency on-site carbon

<sup>4</sup> Passivhaus – where the heat losses of a building are reduced so much that minimal heating is required. Passive heat sources like the sun, occupants, household appliances and the heat from the extract air cover a large part of the heating demand.

reductions and offsite carbon abatement measures for an additional capital cost of between 5-7% for residential development and non-domestic buildings. Achieving net zero regulated and unregulated emission is likely to result in a cost impact of 7-11% for homes.

- 8.20 The study reported that the costs of achieving these standards are likely to fall over time both because of reducing technology costs but particularly because reducing carbon intensity of grid electricity means that the carbon emissions of new homes will be lower than the level estimated by current regulatory compliance methods (SAP2012 and SBEM). Changes to carbon emission factors for electricity should also strongly favour the use of heat pumps for providing space heating and hot water.
- 8.21 The West of England Authorities are considering this evidence report as part of Local Plan policy updates.



# 9. Retrofitting energy efficiency, renewable and low carbon technologies

**Principle:** Renovation and retrofitting of buildings, including those of a traditionally constructed nature (solid wall buildings pre-dating 1919), should provide an account of what energy efficiency measures can and will be achieved based on conservation principles.

9.1 A large percentage of existing buildings will still be in use in 2050 and around 26% of emissions in the UK derive from buildings (2017<sup>5</sup>). It is therefore vital that we make these homes as energy efficient as possible through low carbon retrofitting measures. The diversity of our housing stock in terms of age, use, material, build type and quality, thermal mass, location, orientation and occupancy, means that solutions need to be specifically tailored to the building or group of buildings in question. Investment made in energy efficiency, renewable and low carbon technologies becomes increasingly attractive as fossil fuel prices rise and the cost of technologies reduce. Other issues will affect decision making, this may include reliability of

energy supply therefore wanting to maximise energy security and the general aim of futureproofing homes.

- 9.2 Some energy efficiency, renewable and low carbon measures are classed as permitted development through the **General Permitted Development Order 1995**, therefore do not require planning permission for their installation. However, most measures are subject to meeting specific criteria and conditions in order for development to classify as permitted development.
- 9.3 Permitted development never applies to any grade of Listed Buildings and some permitted development rules are removed in Conservation Areas.
- 9.4 Retrofit measures that are permitted development (apart from Listed buildings) with no specific conditions include:
- Draught proofing doors, windows and floors.
  - Secondary glazing.
  - Internal wall insulation.
  - Cavity wall insulation.
  - Loft insulation.
  - Solar panels.
  - Ground source heat pumps.
  - Mechanical Ventilation Heat Recovery systems.
  - Electric vehicle charging points.

5 <https://www.theccc.org.uk/publication/net-zero-technical-report/>



## Permitted development measures under specific circumstances

Measure	To comply must:
Rafter insulation	Have no external alteration, including changes in roof, chimney, flue or ventilation pipes.
Floor insulation	A check with Building Control will be required. Advice required on whether insulation is appropriate for building type, to avoid risk of condensation.
Fuel efficient or Biomass boiler and flue	The flue must not exceed roof height by more than 1 metre. If in a Conservation Area or AONB the flue must not be located on a wall or roof slope which fronts a highway and forms either a principal or side elevation of the dwelling.
Double or triple glazing	Materials must be of similar appearance to the rest of the property and the property must not be subject to an Article 4 Direction (which removes permitted development rights).

Measure	To comply must:
External wall insulation	Insulation must not exceed the roofline. If on the principal or side elevation, must not protrude beyond windowsills or surrounds. It must not necessitate the alteration of the roof or any chimney, flue or ventilation pipe and the finish must be of similar appearance to the materials used in the construction to the exterior of the rest of the property.  Advice required on whether insulation is appropriate for building type, to avoid risk of condensation.  If you live in a Conservation Area, or an Area of Outstanding Natural Beauty, you will need to apply for planning permission before cladding the outside of your house with stone, artificial stone, pebble dash, render, timber, plastic or tiles.
Roof or wall-mounted Solar PV and thermal panels	Panels must not protrude more than 200mm from the roof or wall surface; nor exceed the height of the highest part of the existing roof. Must be sited to minimise the effect on the external appearance of the dwelling and the amenity of the area.  If the property is in a Conservation Area the panels must not front onto a highway.



Measure	To comply must:
Free-standing solar PV and thermal panels	<p>Must not be any other arrays in the curtilage of the property. The array must not exceed 4 metres in height; must be at least 5 metres from the boundary of the curtilage. The panel area must be less than 9m<sup>2</sup>, or any one dimension of the array must not exceed 3 metres.</p> <p>In a Conservation Areas solar panels must not be wall mounted on any wall facing a highway or in areas with an Article 4 Direction in place to protect roof coverings.</p>
Air source heat pump	<p>Mustn't be an existing air source heat pump within the building curtilage. The volume of the outdoor compressor unit must not exceed 0.6m<sup>3</sup> and the pump must be more than 1 metre from the boundary. If installed on a flat roof, should not be within one metre on the external edge.</p> <p>If within a Conservation Area, it should not be installed on a wall or roof fronting a highway or between the main building and the highway. The pump should be sited so as to minimise its effect on the amenity of the area and the appearance of the building.</p>

9.5 Measures that will require planning permission include:

- Wind turbines exceeding 15 metres in height.

## Specific retrofitting measures for traditional/heritage buildings

- 9.6 Traditionally constructed buildings (generally considered to be buildings built before 1919) account for about 20% of existing housing stock in North Somerset. Traditionally constructed buildings behave and perform differently from more modern properties, in some cases rendering new technologies incompatible.
- 9.7 There is a strong argument for the retention of old and historic buildings. Heritage buildings are inherently sustainable as they are likely to have been built by local craftsmen with locally sourced materials and their 'embodied energy' (the total energy consumed during the resource extraction, transportation and manufacture) over their long lifespan is good, although their energy efficiency is often perceived as poor they are capable of being upgraded. Historic buildings present unique challenges and technical issues when implementing energy efficiency and retrofitting renewable and low carbon energy generation measures. Measures can be installed, but it will require more thought into the approach to energy efficiency in these buildings. Taking a whole building approach on how best to upgrade historic buildings is more logical with historic buildings rather than focusing on one aspect.
- Roof insulation (ceiling or rafter): Natural fibre materials (such as sheep wool or hemp fibre) should be used in traditionally constructed houses, as these do not hinder movement of moisture. Fibreglass and mineral wool should be avoided, as they tend to hold moisture and increase the risk of damp and timber decay.



- **Breathable Renders:** Lime renders (including for internal applications) can be used as an insulating material.
- **Floors Insulation:** between the floorboards and carpet can be fitted. On ground floors Limecrete or similar can provide an insulating vapour permeable alternative to solid concrete and can be applied underneath traditional flagstones.
- **Secondary glazing:** Secondary glazing is a fully independent window system, installed to the room side of existing windows. The original windows remain in position and in their original unaltered form. Fixed forms of secondary glazing can be used, which are designed to be removed in warmer months when the thermal benefits are not required.
- **Upgrading energy efficiency of existing windows:** this can be done by ensuring the windows are maintained and draft proofed, there are also films available which can be applied to the inside of the windows to improve the thermal capabilities of glass. Added back the old shutters which may have been removed from the building will also improve the heat loss from the windows at night

## Retrofit measures likely to be unsuitable for heritage buildings

- 9.8 **Internal/external solid wall insulation:** wall insulation can be problematic for traditional buildings. Internal insulation reduces the size of the room and can affect traditional decorative features, but there is range of natural fibre insulation available that can be applied to the internal walls of historic buildings in some cases. External insulation can conceal the appearance of a building that gives it its character. In terraces or semi-detached dwellings, it can also make the building project out from the building line. However, you cannot take a blanket approach to historic buildings and upgrading their energy efficiency each case will depend on the buildings themselves.
- 9.9 Further information on upgrading the energy efficiency of historic buildings from **Historic England** and how to take the whole building approach to provide a sustainable and successful solution.



# 10. Viability Assessments

**Principle:** The Council is committed to delivering high quality sustainable development but recognises that in some circumstances, for example for small and medium sized enterprises – viability considerations may constrain what can be delivered. The Council will implement the requirements of this SPD in a pragmatic proportionate way and developers are strongly encouraged to talk to their planning case officer at an early stage if there are any concerns about affordability. Where a lack of viability is demonstrated, the Council will take this into account in it's decision making.

- 10.1 In all cases, viability and feasibility are key material considerations in meeting the policy requirements of both local and national policy. It is one of a range of factors that will influence the determination of a planning application and this is built into the planning policy framework.
- 10.2 However, where an applicant states that a policy requirement has an impact on the viability of a proposal, the applicant is required to provide a quantified justification to demonstrate this. It is not enough just to assert that the scheme is unviable

without evidence. Applicants should use an agreed format for assessing viability in order to help all parties agree and efficiently determine the application. A financial appraisal should illustrate how the costs of achieving the required standards are unachievable and how these costs relate to other development costs associated with the development including any 'abnormal' costs to allow a broad assessment of the financial impact of the policy.

- 10.3 Assessing viability requires judgments which are informed by the relevant available facts. It requires a realistic understanding of the costs and the value of development in the local area and an understanding of the operation of the market.



When the required percentage of renewable/low carbon energy generation cannot be met

- 10.4 In circumstances where all possible ranges of appropriate technologies have been explored and none are suitable, then this must be demonstrated at the earliest opportunity in the development management process, preferably at pre-application stage. A financial appraisal will be required, which should be supplemented by details illustrating the range of renewable and low carbon technologies explored, along with their associated costs. Grounds for this might include that the site and/or development proposed is such that the application of the requirements are not suitable for a given location.
- 10.5 In exceptional circumstances and where the development meets wider planning objectives, a reduced percentage may be negotiated. This will only be applicable when there is a demonstrable negative impact on development viability. These instances are likely to be very limited due to the range of potential applications.

When BREEAM requirements cannot be met

- 10.6 In carrying out the financial appraisal, the costs of instructing professionals to carry out the BREEAM assessments/work associated with part compliance should be factored into the professional fees and form part of the gross development costs. These costs should be deducted from the gross development value and assumptions made around developer/landowner return to determine viability.
- 10.7 Where a successful case has been made demonstrating non-viability in meeting the required BREEAM standards, it may be permissible for applicants to apply a lower standard or potentially utilise alternative strategies. These will be assessed on their merits at the planning application stage.





# 11. The planning application

## Pre-application discussions

11.1 Developers are encouraged to engage in dialogue with North Somerset Council before submitting detailed proposals. The authority undertakes to provide an initial response to specific site enquiries, to indicate any sensitivity associated with the site and, if requested, to provide an opinion on whether an environmental screening report is required. There is a fee for pre-application advice; details of this can be found on the [Council website](#).

## SuDS applications

11.2 The Council welcomes pre-application discussions and will look for a proof of concept plan and drainage strategy or Masterplan, which is based on known drainage and flooding information on the site. Early pre-application discussion will allow time for integration of the drainage into the design and use the water as a resource; managing the flow across the site. Consultations undertaken at this stage will reduce the time and cost of doing so in later stages.

## Environmental Impact Assessment (EIA)

11.3 If a development potentially poses a significant effect on the environment, developers are advised to seek a Screening Opinion (to inform whether an EIA is required) at the initial stage of the planning process. The proposal will be assessed against the selection criteria in Schedule 3 of the EIA Regulations to enable a screening opinion to be issued. This will include the potential impact on environmental receptors including local ecology, archaeology, water resources, landscape character and visual impacts. The potential for cumulative effects with any existing or approved development will also be considered. Generally, an EIA is likely to be needed for Schedule 2 developments, if the development is in a particularly environmentally sensitive or vulnerable location and is likely to be required for larger scale developments.



## Submitting a Planning Application

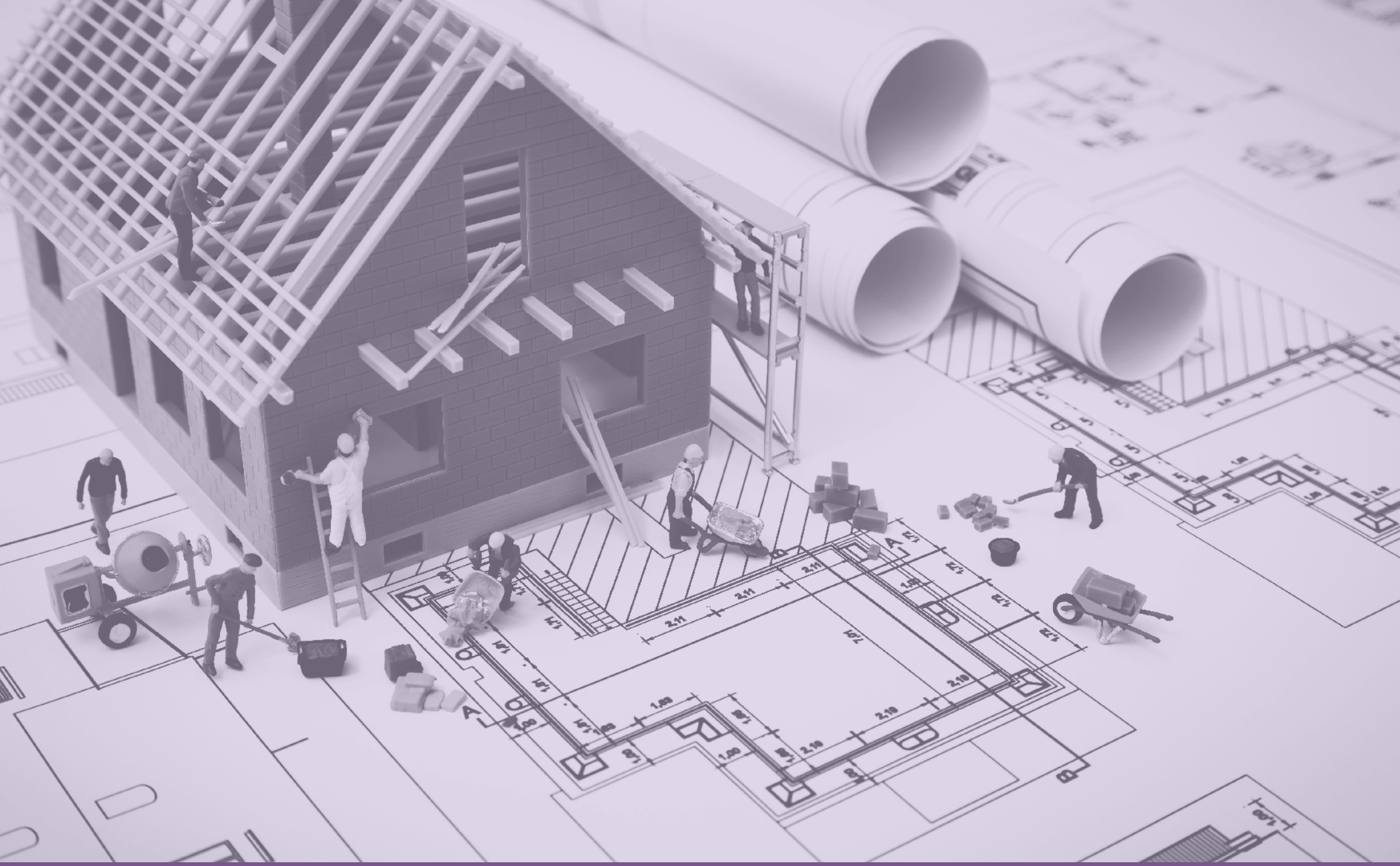
11.4 The information to be submitted with any application is explained in more detail on the **Council website**. The detail required to comply with the policy outlined in this guidance is shown in the checklist **Appendix 1**. Major development proposals must meet the minimum sustainability/energy standards outlined in this guidance and this should be clearly demonstrated within a **Design and access statement**.



# 12. Monitoring and Review

- 12.1 As a Local Planning Authority, we are required to publish an **Authority Monitoring Report (AMR)** to assess the effectiveness of policies and guidance that forms part of the local development plan. We will monitor the provision and delivery of sustainable design and construction standards as part of the AMR process and report accordingly. This guidance will be reviewed as and when necessary in light of all material information.





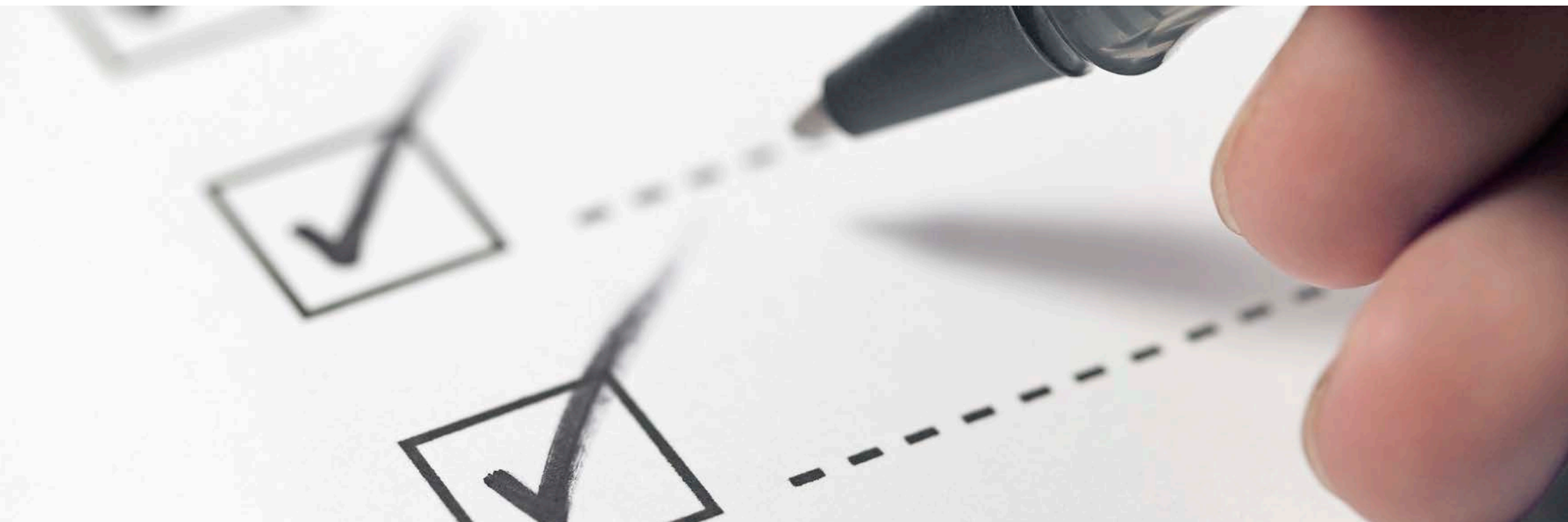


## APPENDIX 1:

# Checklist for achieving required standards for sustainable buildings and places

This checklist can be used to demonstrate the requirements of Core Strategy Policies CS1 – Addressing Climate Change and Carbon Reduction and Policy CS2 – Delivering Sustainable Design and Construction.

It sets out what is required through planning policy for all types development. Select those which apply to the development.



Type of development – indicate those that apply	Policy requirement – check box to confirm compliance	SPD Section	Considerations	Supporting information – indicate those that apply
New Residential Development (including conversions) <input type="checkbox"/>	<p><b>CS2: Clause 1</b> - require energy efficient designs to reduce energy demand.</p> <p><b>CS2: Clause 3</b> – require as a minimum, a <b>19% performance</b> improvement on Part L Building Regulations, equivalent to Code for Sustainable Homes Level 4.</p>	<p><b>3. Sustainable Design principles -</b></p> <p><b>Fabric energy efficiency</b></p> <p><b>Code for Sustainable Homes (equivalence)</b></p>	<p>Applications must demonstrate how the measures below have been considered and provide detail of these within the application:</p> <ul style="list-style-type: none"> <li>• Design for health and wellbeing</li> <li>• Energy use</li> <li>• Demonstrate energy hierarchy</li> <li>• Siting and orientation</li> <li>• Passive design</li> <li>• Material use</li> <li>• Limiting risks of overheating/ Urban heat island effects</li> <li>• Thermal mass</li> <li>• Waste management</li> <li>• Water use</li> <li>• Surface water run-off</li> <li>• Sustainable and Active Travel</li> <li>• Land use ecology</li> </ul>	<p>The <b>Design and Access Statement</b> to include details on energy and sustainability or a separate <b>Energy/sustainability statement</b> can be submitted.</p> <p>[The website includes a Design and Access statement template which may be used].  <input type="checkbox"/></p> <hr/> <p><b>Pre-application discussions</b> may be appropriate  <input type="checkbox"/></p> <p>Submit an <b>Energy (or sustainability) statement</b>.  <input type="checkbox"/></p> <p>Submit a <b>SAP compliance report</b>.  <input type="checkbox"/></p>



Type of development – indicate those that apply	Policy requirement – check box to confirm compliance	SPD Section	Considerations	Supporting information – indicate those that apply
Residential development between 1 – 9 dwellings (including conversions) <input type="checkbox"/>	<b>CS2: Clause 2</b> - 10% predicted energy demand to be met through renewable/ low carbon sources. <input type="checkbox"/>	<b>4.</b> Renewable and low carbon energy generation	Select applicable technologies: <ul style="list-style-type: none"> <li>• Solar Photovoltaic (PV)</li> <li>• Solar Thermal</li> <li>• Heat pumps (ground, air or water)</li> <li>• Biomass burners/ boilers</li> <li>• Mechanical heat recovery systems</li> <li>• Domestic/micro combined heat and power systems</li> </ul>	Within the <b>Energy Statement</b> , state how the required % of predicted energy demand will be met through renewable and low carbon sources.  Submit a <b>SAP compliance report</b> . <input type="checkbox"/>
Residential development of 10 or more dwellings (including conversions) <input type="checkbox"/>	<b>CS2: Clause 2</b> - 15% predicted energy demand met through renewable/low carbon sources <input type="checkbox"/>	<b>4.</b> Renewable and low carbon energy generation	Select applicable technologies: <ul style="list-style-type: none"> <li>• Hydropower</li> <li>• Solar photovoltaic arrays</li> <li>• Solar Thermal</li> <li>• Air/water/ground source heat pumps</li> <li>• Combined Heat and Power systems</li> <li>• Wind turbines</li> <li>• District Heating schemes</li> </ul>	Within the <b>Energy Statement</b> , state how the required % of predicted energy demand will be met through renewable and low carbon sources.  Submit a <b>SAP compliance report</b> . <input type="checkbox"/>





Type of development – indicate those that apply	Policy requirement – check box to confirm compliance	SPD Section	Considerations	Supporting information – indicate those that apply
Non-residential development between 500m <sup>2</sup> and 1000m <sup>2</sup> <input type="checkbox"/>	<b>CS2: Clause 3</b> - BREEAM 'very good' standard <input type="checkbox"/>	<b>5.</b> BREEAM assessment	Minimise energy demand ahead of energy efficiency and renewable and low carbon technologies. Measures via assessment criteria:	A Pre-assessment/ Design-stage report is required with the planning application. <input type="checkbox"/>
Non-residential developments over 1000m <sup>2</sup> <input type="checkbox"/>	<b>CS2: Clause 3</b> - BREEAM 'Excellent' standard <input type="checkbox"/>	<b>5.</b> BREEAM assessment	<ul style="list-style-type: none"> <li>• Health and Wellbeing</li> <li>• Management</li> <li>• Energy</li> <li>• Transport</li> <li>• Water</li> <li>• Materials</li> <li>• Waste</li> <li>• Land Use and Ecology</li> <li>• Pollution</li> </ul>	Applicants are encouraged to submit a Post-Construction certificate. <input type="checkbox"/>
All new development <input type="checkbox"/>	<b>CS2: Clause 5</b> – require the application of best practice Sustainable Drainage Systems <input type="checkbox"/>	<b>6.</b> Sustainable Drainage Systems	Principles to follow: <ul style="list-style-type: none"> <li>• Plan SuDS from start</li> <li>• Replicate natural drainage</li> <li>• Prevention and source control</li> <li>• Design for easy maintenance and access</li> </ul>	Drainage design proposals and calculations for the site should be submitted; including maintenance plans and schedules which identify the SuDS system is maintained.



Type of development – indicate those that apply	Policy requirement – check box to confirm compliance	SPD Section	Considerations	Supporting information – indicate those that apply
Residential developments of 10 or more <input type="checkbox"/>	<b>CS1: Clause 4</b> –demonstrate a commitment to maximising the use of sustainable transport solutions <input type="checkbox"/>	<b>3.</b> Sustainable Design Principles -  Sustainable and active travel	Detail of: <ul style="list-style-type: none"> <li>the current commercial and residential movements to and from the site</li> <li>the proposed commercial and residential movements to and from the site</li> <li>loading, manoeuvring, servicing and parking areas</li> <li>what measures will be put in place to deal with the anticipated transport impacts</li> <li>how accessibility and safety will be improved for all types of travel</li> <li>improvements to pedestrian, cycling and public transport links</li> </ul>	A <b>Transport Assessment</b> must be submitted for all new major development schemes.



Type of development – indicate those that apply	Policy requirement – check box to confirm compliance	SPD Section	Considerations	Supporting information – indicate those that apply
All new developments <input type="checkbox"/>	<b>CS1: Clause 5</b> - a network of multifunctional green infrastructure will be planned for and delivered through new development. <input type="checkbox"/>	<b>7.</b> Climate change adaptation measures	<p>Details on adaptation measures must demonstrate:</p> <ul style="list-style-type: none"> <li>• Flood resilience measures</li> <li>• Methods to avoid overheating</li> <li>• Measures to minimise the Urban Heat Island Effect</li> </ul> <p>Likely to include measures incorporating green infrastructure and rewilding</p>	All <b>sustainability/energy statements</b> should contain detail on how changing climatic conditions have been considered as part of the design of the development <input type="checkbox"/>



Type of development – indicate those that apply	Policy requirement – check box to confirm compliance	SPD Section	Considerations	Supporting information – indicate those that apply
All new developments <input type="checkbox"/>	<b>CS1: clause 6</b> - protecting and enhancing biodiversity, including species and habitats that are characteristic of the area, in order to support adaptation to climate change. <input type="checkbox"/>	7. Climate change adaptation measures	Natural solutions must be considered where they can build resilience. This can include to stabilise slopes to attenuate flood water, absorb carbon and increase the use of trees to reduce urban heating.	All <b>sustainability/energy statements</b> should contain detail on how changing climatic conditions have been considered as part of the design of the development <input type="checkbox"/>
All new developments <input type="checkbox"/>	<b>CS1: Clause 10</b> - Areas will be enhanced to be resilient to the impacts of climate change including flood defence and public realm enhancements including the integration of effective shading through, for example, tree planting <input type="checkbox"/>	7. Climate change adaptation measures	Details on adaptation measures must demonstrate: <ul style="list-style-type: none"> <li>• Flood resilience measures</li> <li>• Methods to avoid overheating</li> <li>• Measures to minimise the Urban Heat Island Effect</li> <li>• Measures incorporating green infrastructure and rewilding</li> </ul>	All <b>sustainability/energy statements</b> should contain detail on how changing climatic conditions have been considered as part of the design of the development <input type="checkbox"/>



# APPENDIX 2

## Documentation to submit to demonstrate Code for Sustainable Homes Level 4 equivalent performance standard

Where Part L documents are required, the TER and BER/DER should be clearly displayed on the output documents as illustrated below.

- a. SAP summary for dwellings

Below is an excerpt from a sample SAP Part L document with the TER and DER circled:

### Sample Calculations

To meet the CS2 requirement for new build, the DER figure above (5.44) must be 19% lower than the TER figure (30.51). The calculation is therefore:

$$\begin{aligned} 30.51 - 5.44 &= 25.07 \\ 25.07 / 30.51 \times 100 &= 82.16 \\ &= 82.16\% \text{ reduction in emissions} \end{aligned}$$

This example meets the CS2 requirement.

BASIC COMPLIANCE REPORT						Design SAP elmhurst energy		
Calculation Type: New Build (As Designed)								
Property Reference	1	Issued on Date		08/01/2020				
Assessment Reference	001	Prop Type Ref		1				
Property	1, Anywhere Crescent, BATH, BA1 1XX							
SAP Rating	96 A	DER	5.44	TER	30.51			
Environmental	96 A	% DER<TER	82.17					
CO <sub>2</sub> Emissions (t/year)	0.27	DFEE	40.41	TFEE	65.92			
General Requirements Compliance	Pass	% DFEE<TFEE	38.70					
Assessor Details	Mr. Michael Andrews, Energy Saving Experts Ltd, Tel: 01225 862266, mike@energy-saving-experts.com			Assessor ID		N388-0001		
Client								
SUMMARY FOR INPUT DATA FOR New Build (As Designed)								
Criterion 1 – Achieving the TER and TFEF rate								
1a TER and DER								
Fuel for main heating	Electricity							
Fuel factor	1.55 (electricity)							
Target Carbon Dioxide Emission Rate (TER)	30.51				kgCO <sub>2</sub> /m <sup>3</sup>			
Dwelling Carbon Dioxide Emission Rate (DER)	5.44				kgCO <sub>2</sub> /m <sup>3</sup>	Pass		
	-25.07 (-82.2%)					kgCO <sub>2</sub> /m <sup>3</sup>		
1b TFEF and DFEE								
Target Fabric Energy Efficiency (TFEE)	65.92				kWh/m <sup>2</sup> /yr			
Dwelling Fabric Energy Efficiency (DFEE)	40.41				kWh/m <sup>2</sup> /yr			
	-25.5 (-38.7%)					kWh/m <sup>2</sup> /yr	Pass	
Criterion 2 – Limits on design flexibility								
Limiting Fabric Standards								

SAP basic compliance report



# APPENDIX 3:

## Documentation to submit to demonstrate BREEAM performance compliance

### BRUKL summary for non-residential


Below is an excerpt from a sample SBEM Part L document with the TER and BER circled:

### Sample Calculations

To meet the CS2 benchmark for new build, the BER figure above (19.4) must be 19% lower than the TER figure (24). The calculation is therefore:

$$\begin{aligned} 24 - 19.4 &= 4.6 \\ 4.6 / 24 \times 100 &= 19.16 \\ &= 19.16\% \text{ reduction in emissions} \end{aligned}$$

This example meets the CS2 requirement.

**BRUKL Output Document**  HM Government  
Compliance with England Building Regulations Part L 2013

**Project name**  
As designed

**Date:**

**Administrative information**

<b>Building Details</b> Address: London,	<b>Owner Details</b> Name: Lend Lease Telephone number: Address:
<b>Certification tool</b> Calculation engine: TAS Calculation engine version: "v9.4.0" Interface to calculation engine: TAS Interface to calculation engine version: v9.4.0 BRUKL compliance check version: v5.2.g.3	<b>Certifier details</b> Name: Telephone number: Address:

**Criterion 1: The calculated CO<sub>2</sub> emission rate for the building should not exceed the target**

CO <sub>2</sub> emission rate from the notional building, kgCO <sub>2</sub> /m <sup>2</sup> .annum	24
Target CO <sub>2</sub> emission rate (TER), kgCO <sub>2</sub> /m <sup>2</sup> .annum	24
Building CO <sub>2</sub> emission rate (BER), kgCO <sub>2</sub> /m <sup>2</sup> .annum	19.4
Are emissions from the building less than or equal to the target?	BER =< TER
Are as built details the same as used in the BER calculations?	Separate submission

Compliance check sheet for BRUKL



# GLOSSARY

- Allowable Solutions:** Allowable Solutions is the term for the carbon offsetting process and the various measures which house builders may support to achieve the zero-carbon standards.
- Biodiversity:** is a measure of the variety of organisms present in different ecosystems.
- Embodied energy:** the total energy consumed during resource extraction, transportation and manufacture.
- Energy conservation:** measures to reduce demand at source, such as roof and wall insulation to reduce heat loss. It leads to a reduction or elimination of unnecessary energy use. It can include behavioural change measures, such as switching appliances off when not in use.
- Energy efficiency:** using less energy to provide the same level of energy benefit, for example through the use of low energy light bulbs or mechanical heat recovery systems.
- Energy security:** the uninterrupted availability of energy sources at an affordable price

- Fabric Energy Efficiency Standard:** the proposed maximum space heating and cooling energy demand for zero carbon homes. This is the amount of energy that would normally be needed to maintain comfortable internal temperatures and in a dwelling.
- Feed-in tariff:** a payment made by government for eligible renewable electricity-generating schemes.
- Green Infrastructure:** a strategically planned and delivered network comprising the broadest range of high-quality green spaces and other environmental features.
- Greenhouse gas emissions:** gases emitted into the atmosphere that absorb and emit radiation within the thermal infrared range. These include carbon dioxide, methane and nitrous oxide of which carbon dioxide is the most prevalent.
- Low carbon energy:** energy derived from processes or technologies that produce power with substantially lower amounts of carbon dioxide emissions than is emitted from conventional fossil fuel power generation.



**Natural stack ventilation:**

where air is driven through a building by vertical pressure differences developed by thermal buoyancy. Warm air inside a building is less dense than cooler air outside, and thus will try to escape from openings high up in the building envelope (such as chimneys); cooler denser air will enter openings lower down. The process will continue if the air entering the building is continuously heated, typically by casual or solar gains.

**Passivhaus:**

a standard of building design, where the heat losses are reduced so much that minimal heating is required. Passive heat sources like the sun, occupants, household appliances and the heat from the extract air cover a large part of the heating demand.

**Renewable energy:**

energy that comes from resources which are naturally replenished and are not depleted by being used, such as sunlight, wind, rain, tides, waves and geothermal heat.

**Renewable Heat Incentive:**

a payment made by government to eligible renewable heat technologies.

**Retrofitting:**

the addition of new technology or features to older systems.

**Supplementary Planning Document:**

a document which provides additional information on planning policies in a development plan.

**Sustainable Development:**

commonly defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

**Urban Heat Island Effect:**

an urban area that's significantly warmer than the surrounding countryside, especially at night. This is due to the land surface in towns and cities, made of man-made materials which absorb and store heat. This coupled with concentrated energy use and less ventilation than in rural areas, creates a heating effect. Often up to 10 degrees Celsius hotter than surrounding countryside.





# SUSTAINABLE BUILDING CASE STUDY:

## 'Zero Carbon Homes,' equivalent to Code for Sustainable Homes Level 6 in Portishead:

Built by Halsall Construction for Alliance Homes in 2013

### Key features:

- High levels of air tightness and thermal efficiency.
- Mechanical ventilation with heat recovery to harness and recycle warmth from within the home (91% efficiency).
- Energy is generated onsite through renewable energy from solar photovoltaic (PV) panels for electricity production and solar thermal panels for hot water use.

### Key benefits:

- Greatly lowered space and heating demand and therefore running costs, due to very high levels of fabric energy efficiency.
- Large triple glazed windows create a well-lit and pleasant living space.
- Reduced water bills due to efficient internal water fittings and appliances.
- Energy display devices allowing occupants to monitor current and historic energy use and production.
- Enhanced sound insulation.

### Lessons Learnt:

- Code 6 homes are achievable and at a reasonable cost.
- Marketing and executing strategy key to success



This publication is available in large print, Braille or audio formats on request.

Help is also available for people who require council information in languages other than English.

Please contact [planning.policy@n-somerset.gov.uk](mailto:planning.policy@n-somerset.gov.uk)

