

# Sustainable Construction Checklist

Draft Supplementary Planning Document

Bath & North East  
Somerset Council

Improving People's Lives

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# Introduction & Policy Context

# 1. Introduction & Policy Context

## Introduction

**1.1.** On the 14th March 2019, the Council declared a Climate Emergency and pledged the Council to providing the leadership to enable Bath & North East Somerset district to become carbon neutral by 2030.

## Purpose of this document

**1.2.** This SPD supplements the Local Plan Policies CP1, CP3, CP4, SCR1, SCR5, SCR6, SCR7 and SCR8 which would facilitate to achieve net zero carbon development.

**1.3.** This SPD contains the Checklist with key assessment tables which should be submitted with applications for new build residential properties and major new non-residential buildings as well as major works on existing buildings. This document also provides guidance on the information required and how to fill in the Checklist.

## Local Plan Policy Context

**1.4.** Policies SCR6-8 are introduced through the Local Plan Partial Update and require information in the check list. They replace the previous requirements from Core Strategy policy CP2 and Placemaking Plan Policy SCR1.

For further guidance please refer to the Energy Efficiency, Retrofitting and Sustainable Construction SPD. This looks at the building types in our district, including historic buildings. Other aspects of sustainability such as transport, drainage and ecology are handled separately with Planning Services and are outside the scope of this SPD.



# 1. Introduction & Policy Context

## Policy CP1 - Retrofitting Existing Buildings

Retrofitting measures to existing buildings to improve their energy efficiency and adaptability to climate change and the appropriate incorporation of microrenewables will be encouraged.

Priority will be given to facilitating carbon reduction through retrofitting at whole street neighbourhood scales to reduce costs, improve viability and support coordinated programmes improvement.

Masterplanning and 'major development' (as defined in the Town & Country Planning (Development Management Procedure (England) Order 2010) in the District should demonstrate that opportunities for the retention and retrofitting of existing buildings within the site have been included within the scheme. All schemes should consider retrofitting opportunities as part of their design brief and measures to support this will be introduced.

## Retrofitting Historic Buildings

The Council will seek to encourage and enable the sensitive retrofitting of energy efficiency measures and the appropriate use of micro-renewables in historic buildings (including listed buildings and buildings of solid wall or traditional construction) and in conservation areas, whilst safeguarding the special characteristics of these heritage assets for the future. Proposals will be considered against national planning policy.

The policy will be supported by the Council's Energy Efficiency, Retrofitting and Sustainable Construction Supplementary Planning Document.

## Houses in Multiple Occupation.

In the case of a house in multiple occupation the property must achieve an Energy Performance Certificate "C" rating as required by policy H2.

## Policy SCR6 - New Build Residential

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

New build residential development will aim to achieve zero operational emissions by reducing heat and power demand then supplying all energy demand through onsite renewables. Through the submission of a sustainable construction checklist, proposed new dwellings will demonstrate the following;

- Space heating demand less than 30kWh/m<sup>2</sup>/annum;
- Total energy use less than 40kWh/m<sup>2</sup>/annum; and
- On site renewable energy generation to match the total energy use, with a preference for roof mounted solar PV
- Connection to a district heating network where available

## Major residential development

In the case of major developments where the use of onsite renewables to match total energy consumption is demonstrated to be not technically feasible (for example with apartments) or economically viable, renewable energy generation should be maximised and the residual carbon must be offset by a financial contribution

Applications for 50 dwellings or more are required to demonstrate that the CIBSE TM59 overheating target has been met in the current climate, and a strategy submitted to show how overheating can be mitigated in the future climate.

# 1. Introduction & Policy Context

## Policy SCR7 - Major New Build | Non Residential

New build non-residential major development will maximise carbon reduction through sustainable construction measures. Through the submission of a sustainable construction checklist all planning applications will provide evidence that the standards below are met.

Major development is to achieve a 100% regulated operational carbon emissions reduction from Building Regulations Part L 2013 (or future equivalent legislation), following the hierarchy set out below.

- Minimise energy use through the use of energy efficient fabric and services
- Residual energy use should be met through connection to a heat network if available.
- Maximise Opportunities for renewable energy to mitigate all regulated operational emissions.
- Residual carbon emission that cannot be mitigated on site should be offset through a financial contribution to the council's carbon offset fund

## Policy SCR8 - Embodied Carbon

Large scale new-build developments (a minimum of 50 dwellings or a minimum of 5000m<sup>2</sup> of commercial floor space) are required to submit an Embodied Carbon Assessment that demonstrates a score of less than 900kg/sqm of carbon can be achieved within the development for the substructure, superstructure and finishes.

## Policy SCR5 - Water Efficiency

All dwellings will be expected to meet the *national optional Building Regulations requirement* for water efficiency of 110 litres per person per day; b) Rainwater harvesting or other methods of capturing rainwater for use by the residents (e.g. water butts) will be required for all residential development, where technically feasible.

# Type of Development

# 2. Type of Development

## Which applications need to complete the Checklist?

### 2.1. The following need to complete the relevant parts of the Checklist:

- New build residential dwellings
- New build major non-residential
- Changes of use or extension to buildings of 5 dwellings or more/500sqm of floor space or more

\*Householder applications and proposals that are 4 dwellings or less and 500 sqm or less non-residential development are exempt from the requirement to fill in the Checklist.

### 2.2. Definition of the development types

- Large Scale development: 50 dwellings + or 5000m<sup>2</sup> + of commercial floor space. This definition is used in the embodied carbon policy SCR8 and in policies SCR6 and SCR7 when CIBSE assessments are required.
- Major development: 10 + dwellings or 1000m<sup>2</sup> + of commercial floor space

### 2.3. Type of Application required to submit the Checklist

- Full applications for planning permission
- Outline applications where appearance is applied for
- Reserved matters where appearance is applied for
- Discharge of conditions

**2.4.** Compliance with the policies will need to be assessed at the application stage and post construction stage to ensure that the constructed buildings does comply with the policies.

### 2.5. Further documentation:

The checklist should accompany documents that provide further detail, such as Sustainability Statements or Energy Strategies. Please reference where further information and drawings can be found.

### 2.6. Checklist Review

The checklist may be periodically updated to reflect changes in legislation, policy and practice.



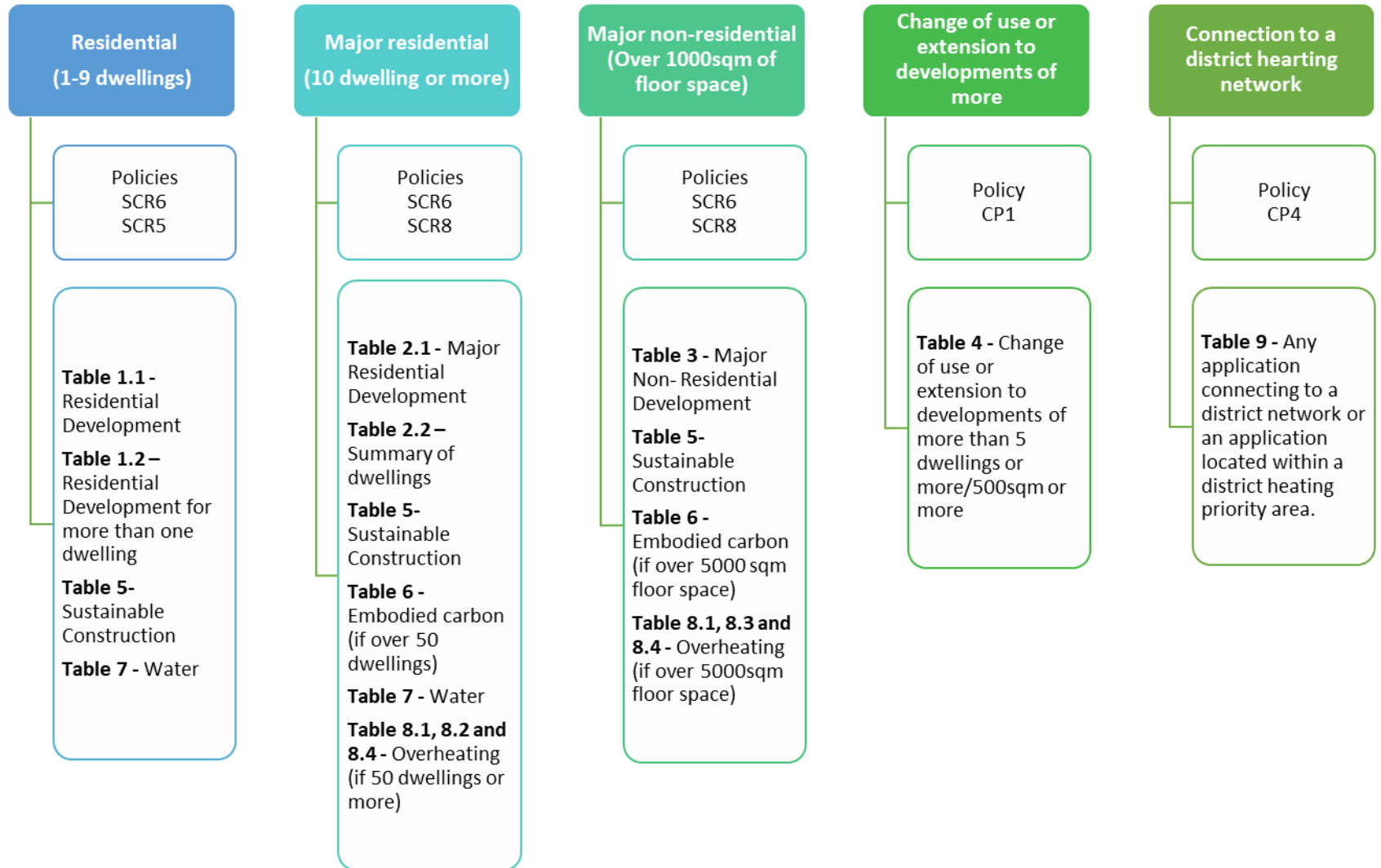
# How to fill in the checklist

# 3. How to Fill in the Checklist

3.1. The diagram outlines what information is required for each development type.

## 3.2. \*Non-compliance

If the proposed development cannot meet the requirement of the following policies, then **table 10** must be completed giving full details of what the proposed development cannot comply with the policies.



# Each Table Explained

# 4.a - Residential | Table 1.1 and 1.2

## Heating and energy supply for Residential developments – To be completed on applications for 1 to 9 dwellings

**4.1.** Residential development of less than 10 dwellings must meet the requirements of policy SCR6. The policy includes the benchmarks from space heating and total energy use. The energy needs must then be met by on site renewable energy with a preference for solar panels.

**4.2.** An energy assessment is required to show that the required benchmarks have been met. The values for space heating, EUI and renewable energy are reported in the SAP assessment required under part L of building regulations.

**4.3.** The values required are reported in the Standard Assessment Procedure (SAP) form which accompanies Part L of Building Regulations. The most recent update of the SAP 10.2 specification (published 15 December 2021) is available on the [BRE website](#). Please refer to the following pages to obtain the relevant values for the Checklist.

**4.4.** Tables 1.1 provides the energy information for energy use and space heating. Table 1.2 is also required if the development is for more than one dwelling.

Requirement	SAP 10.2 Page number
Space heating	Page 134
Energy use	Page 136
Renewable energy	Page 138
Co2 emissions	Page 141
District heating	Page 143

Table 1.1 New build residential properties, policy SCR6			
<ul style="list-style-type: none"> <li>Full applications or outline/ reserved matters applications for Appearance</li> <li>To discharge the condition prior to occupation</li> </ul>			
<p><b>Please tick:</b></p> <p>The proposal, and the figures in the table, are for a single building</p> <p>The proposal is for multiple buildings and the table is for site-wide compliance. Table 1.2 has been completed showing how this has been calculated.</p>			
A	Space Heating (kWh/m2/annum)	Policy requirement 30kWh/m2/annum	
B	Total Energy Use (kWh/m2/annum)	Policy requirement 40kWh/m2/annum	
C	On-Site Renewable Energy Generation (kWh/annum)	Policy requirement to match total energy use	

Table 1.2- Proposals for more that one building type					
<p>Required for developments with more than one type of building where compliance is to be proposed for the whole site, for:</p> <ul style="list-style-type: none"> <li>Full applications or outline/ reserved matters applications for Appearance</li> <li>To discharge the condition prior to occupation</li> </ul>					
<p><b>Representative Buildings:</b> Please note below a representative of each building type e.g. two bedroom/ 3 bedroom dwellings/ commercial/ low rise flat</p>					
Building	Building type represented	Number of buildings of this type	Space Heating (kWh/m2/annum)	Total Energy Use (kWh/m2/annum)	On-site Renewable Energy Generation (kWh/annum)
1. [insert text and add rows as needed]					

# 4.a - Residential | Table 2.1 and 2.2

## Major residential developments – To be completed on application of 10 dwellings or more

4.5. Residential developments of 10 dwellings or more are classed as major residential developments. As above the requirements of policy SCR6 must be met. The policy includes the benchmarks from space heating and total energy use. The energy needs must then be met by on site renewable energy with a preference for solar panels.

4.6. An energy assessment is required to show that the required benchmarks have been met. The values for space heating, EUI and renewable energy are reported in the SAP assessment for part L of building regulations. As stated above in paragraph 6.3.

Requirement	SAP 10.2 Page number
Space heating	Page 134
Energy use	Page 136
Renewable energy	Page 138
Co2 emissions	Page 141
District heating	Page 143

4.7. In addition if energy needs cannot be met on site the residual energy must be offset using a financial contribution to the council renewable energy fund in accordance with the Council’s Planning Obligations Supplementary Planning Document.

4.8. If the development is for 50 dwellings or more then as has been previously required a CIBSE assessment must be submitted to demonstrate the TM59 overheating target has been met in the current climate, and a strategy submitted to show how overheating can be mitigated in the future climate. (See section 11).

4.9. Developments of over 50 dwellings or more must meet the requirements of policy SCR8 which requires the submission of a embodied carbon assessment. Guidance is set out below regarding what information is required (See Table 8 or section 10).

Table 2.1- Major new build residential properties, policy SCR6			
<ul style="list-style-type: none"> <li>Full applications or outline/ reserved matters applications for Appearance</li> <li>To discharge the condition prior to occupation</li> </ul>			
<b>Please tick:</b> The proposal is for multiple buildings and the table is for site-wide compliance. Table 2.2 has been completed showing how this has been calculated.			
A	Space Heating (kWh/m2/annum)	Policy requirement 30kWh/m2/annum	
B	Total Energy Use (kWh/m2/annum)	Policy requirement 40kWh/m2/annum	
C	Renewable Energy Generation (kWh/annum)	Policy requirement to match total energy use	
D	Residual Renewable Energy Generation (kWh/annum)		
E	Equivalent Residual Carbon Dioxide to be Offset (tCO2/annum)		

Table 2.2 - Proposals for more than one building type							
Required for developments with more than one type of building where compliance is to be proposed for the whole site, for:							
<ul style="list-style-type: none"> <li>Full applications or outline/ reserved matters applications for Appearance</li> <li>To discharge the condition prior to occupation</li> </ul>							
<b>Representative Buildings:</b> Please note below a representative of each building type e.g. two bedroom/ 3 bedroom dwellings/ commercial/ low rise flat							
Building	Building type represented	Number of buildings of this type	Space Heating (kWh/m2/annum)	Total Energy Use (kWh/m2/annum)	On-Site Renewable Energy Generation (kWh/annum)	Residual Renewable Energy Generation (kWh/annum)	Equivalent Residual Carbon Dioxide to be Offset (tCO2/annum)
1.	[insert text and add rows as needed]						

# 4.b - Non-Residential | Table 3.1 and 3.2

## Major non-residential development – To be completed for applications for commercial floorspace 1000sqm or more

4.10. Major non-residential development must meet the requirements of policy SCR7. This requires a 100% reduction in carbon taking a fabric first approach and meeting the energy needs using on site renewables. Where this does not result in a 100% reduction then the residual carbon must be offset.

4.11. The required figures can be found in the SBEM assessment required by building regulations part L.

4.12. Carbon reductions from energy efficiency measures are calculated, starting from a baseline of the Target Emissions Rate (TER) compared with the Building Emission Rate (BER).

4.13. The target emission rate (TER) sets a minimum allowable standard for the energy performance of a building to comply with part L of the Building Regulations and is defined by the annual carbon emissions of a notional building of the same type, size and shape to the proposed building. TER is expressed in annual kg of CO<sub>1</sub> per sqm.

4.14. The Building Emission Rate (BER)<sup>1</sup> is a calculation of the carbon emissions on the proposed building. This BER is the baseline for the second round of assessment. Measures can include mechanical ventilation and heat recovery (MVHR), Waste Water Heat Recovery (WWHR) or low carbon energy such as gas-fired Combined Heat and Power (CHP). The contribution of renewables is then calculated by adding the renewable energy measures to the model. The remaining carbon to reach a 100% reduction from the TER is then calculated.

1- The DER and BER is a calculation of the CO<sub>2</sub> emissions for the building as actually specified.

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

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**Project name**

As designed

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**Date:**

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**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:

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**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

# 4.b - Non-Residential | Table 3.1 and 3.2

Major non-residential development – To be completed for applications for commercial floorspace 1000sqm or more

Table 3.1 - Major new build non-residential development, policy SCR7		
<b>Required for:</b>		
<ul style="list-style-type: none"> <li>● Full applications or outline/ reserved matters applications for Appearance</li> <li>● To discharge the condition prior to occupation</li> </ul>		
<b>Please tick:</b>		
The proposal, and the figures in the table, are for a single building		
The proposal is for multiple buildings and the table is for site-wide compliance.		
A	TER Baseline emissions	kg CO <sub>2</sub> /m <sup>2</sup>
B	BER Emissions after Energy Efficiency and Low Carbon measures	kg CO <sub>2</sub> /m <sup>2</sup>
C	% CO <sub>2</sub> reduction from Energy Efficiency measures only (A-B)/ A*100	%
D	BER Emissions after Renewables are added to the Energy Efficiency Measures	kg CO <sub>2</sub> /m <sup>2</sup>
E	Further % CO <sub>2</sub> reduction from Renewables only.	%
F	CO <sub>2</sub> savings from all measures- Renewable and Energy Efficiency	kg CO <sub>2</sub> /m <sup>2</sup>
G	% CO <sub>2</sub> reduction from all measures.	%
H	<b><u>Residual carbon not met by energy efficiency measures to be offset</u></b>	tCO <sub>2</sub>
<p>Please tick to confirm that the two sets of design stage or post-completion Part L SAP/SBEM summary and input documents are attached. <u>This is required for registration of the application:</u></p> <p>1.The reduction in CO<sub>2</sub> from energy efficiency measures only (C)</p> <p>2.The overall reduction once renewables are added (G)</p> <p>For discharge applications, please tick to confirm that the MCS Certificate is attached showing that any renewable technologies cited in this table are installed and operational (for installations of up to 50kW).</p>		
Name and registration number of independent accredited assessor conducting the assessment: <i>[Insert text here]</i>		

Table 3.2 - Proposals for more than one building type						
Required for developments with more than one type of building where compliance is to be proposed for the whole site, for:						
<ul style="list-style-type: none"> <li>● Full applications or outline/ reserved matters applications for Appearance</li> <li>● To discharge the condition prior to occupation</li> </ul>						
<b>Representative Buildings:</b> Please note below a representative of each building type e.g. two bedroom/ 3 bedroom dwellings/ commercial/ low rise flat						
Building	Building type represented	Number of buildings of this type	TER	DER/BER	% reduction	<b><u>Residual carbon not met by energy efficiency measures to be offset</u></b>
1.	<i>[insert text and add rows as needed]</i>					
<b>Site-wide compliance calculations:</b> Please set out below how site-wide compliance was calculated, see guidance for detail on how to do this.						
<i>[Insert text and calculations here]</i>						

# 4.c - Changes of use or extension on existing buildings | Table 4

## Table 4 - Changes of use or extension to developments of 5 dwellings or more/500sqm of floor space or more.

**4.15.** Policy CP1 applies to proposals of medium scale or above; 5 + dwellings or 500m2 + on existing buildings, e.g. large extensions or changes of use.

**4.16.** Existing buildings may have fewer options for improving energy performance and measures should be sensitive to the existing building.

**4.17.** The reduction in emissions is to be achieved on the area within the planning application only, not the rest of the existing building that is outside the area of the planning application. So, for example, if an extension is being applied for, to an existing building, and the rest of the building is outside the application “red line” then the Checklist would only apply to the extension.

**4.18.** The table should demonstrate a 10% improvement in regulated CO2 emissions compared to the BER or DER of a notional baseline building that meets the requirements of Part L1B for residential developments and Part L2B for non-domestic buildings. The baseline BER/DER should be modelled as follows:

- Geometry and space types as per the proposed building
- Building fabric and glazing U-values as per the requirements of Part L2B/Part L1B. Performance of thermal elements or controlled fittings that are not upgraded should be estimated as per the non-domestic EPC Conventions guidance/SAP guidance for existing dwellings
- Air tightness of the building envelope should be estimated as per the non-domestic EPC Conventions guidance/SAP guidance for existing dwellings
- New building services systems as per the minimum requirements of the Non-Domestic Building Services Compliance Guide/Domestic Building Services Compliance Guide
- Retained building services systems as per non-domestic EPC Conventions guidance/SAP guidance for existing dwellings

**4.19. Historic Buildings:** Proposals for works to historic buildings will be judged on their own merits, taking into account the significance and character of the building and its setting. All Listed Building Consent applications must provide full details of energy measures including their impact on fabric, appearance or building function. Further guidance and case studies are provided in the Energy Efficiency, Retrofitting and Sustainable Construction SPD. If the proposed development cannot meet the required standard then **table 10 Non-Compliance** must be completed.

Table 4 - Change of use or extension to buildings for 5 dwellings or more/ 500sqm of floor space or more (Policy CP1)		
<b>Please tick:</b> The proposal, and the figures in the table below, are for a single building The proposal is for multiple buildings so the table below demonstrates site-wide compliance;		
A	DER/ BER Baseline emissions from Notional Building	kg CO <sub>2</sub> /m <sup>2</sup>
B	DER/ BER Emissions after All Measures (Renewables plus Energy Efficiency Measures)	kg CO <sub>2</sub> /m <sup>2</sup>
	Percentage CO <sub>2</sub> reduction from all measures should be at least <b>10%</b> (A-B)/A*100	%
Please tick to confirm that design stage/post-completion SAP/SBEM Part L summary and input documents are attached. <u>This is required for registration of the application</u> For discharge applications, please tick to confirm that the MCS Certificate is attached showing that any renewable technologies cited in this table have been installed and are operational.		
Name, reference number and company of accredited independent assessor: <i>[Insert text here]</i>		

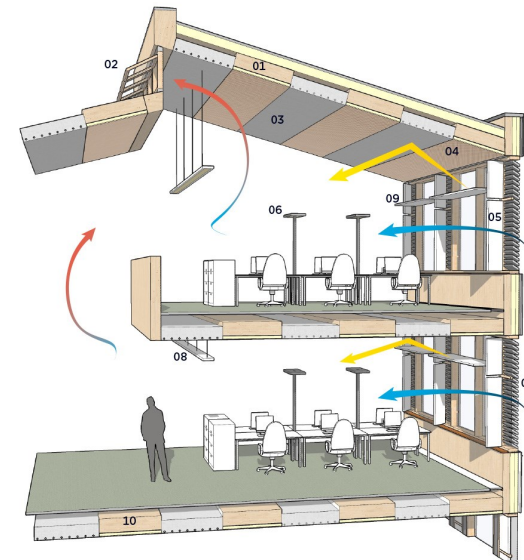


# 4.d - Sustainable Construction Information | Table 5

**4.20.** Please provide details of the sustainable construction methods that will be used to comply with policies SCR6 and SCR8.

- Guidance on Sustainable construction can be found in the Energy Efficiency, Retrofitting and Sustainable Construction SPD.
- To be completed for Full applications or Outline/ Reserved Matters applications for Appearance to demonstrate how they have responded to the issues in the Energy Efficiency, Retrofitting and Sustainable Construction SPD.

Table 5 - Sustainable Construction	
<b>Siting and Orientation</b>	<i>(insert text here)</i>
<b>Passive Design</b>	<i>(insert text here)</i>
<b>Thermal Mass</b>	<i>(insert text here)</i>
<b>Surface Water run off</b>	<i>(insert text here)</i>
<b>Energy</b>	<i>(insert text here)</i>
<b>Materials</b>	<i>(insert text here)</i>
<b>Waste</b>	<i>(insert text here)</i>



# 4.e - Certified Passivhaus

## Certified Passivhaus

**4.21.** Proposals certified to the Passivhaus standard for new build or Enerphit for existing buildings will be considered to be compliant with SCR6 and SCR7 and do not need to fill out the required tables.

**4.22.** Passivhaus projects use rigorous design and construction detailing to provide a high level of occupant comfort and use very little energy for heating and cooling. Passivhaus buildings have been shown to mitigate the performance gap commonly found in new build projects, whereby post-occupancy energy use is significantly higher than is predicted at the design stage.

## Evidence to be provided

**4.23.** In order to qualify for Passivhaus exemption, full applications or Outline/Reserved Matters applications for Appearance are to be accompanied by

- a. Sign-off documentation from a Passivhaus Certifier (as opposed to a Passivhaus designer) confirming that the design is Passivhaus compliant.
- b. A written statement signed by the developer and the Passivhaus certified designer working on the scheme confirming that Passivhaus professionals will be employed throughout the development process and that the scheme will be able to achieve full certification.
- c. A summary output document from the Passivhaus Planning Platform (PHPP) software indicating that the design is Passivhaus compliant at this stage of development.

**4.24.** If a multiple-building proposal contains some units that are to be certified to Passivhaus and some that are not, those that are not to be certified will need to meet the usual requirements of policy SCR6 and SCR7.

# 4.f - Embodied Carbon | Table 6

**Embodied Carbon – Large Scale development of 50 dwellings or more/ 5000sqm of floor space or more.**

## **Policy SCR8 – Embodied Carbon**

Policy SCR8 sets out a requirement for all large non-residential buildings to limit embodied carbon to 900kgCO<sub>2</sub>/m<sup>2</sup> for the substructure, superstructure and finishes. A large-scale new build development is considered a minimum of 50 dwellings or a minimum of 5000m<sup>2</sup> of commercial floor space

## **What is Embodied Carbon?**

**4.25.** The embodied carbon of a particular development is the total greenhouse gas emissions generation from the creation of a built asset to assembly. In the case of B&NES, this includes processes including: extraction, manufacturing, processing, transportation and assembly (BS15978 stages A1-A5).

**4.26.** Stages B and C, which address in-use and end-of-life operations, respectively, are not required to be reported on.

## **Policy Rationale**

**4.27.** As operational emissions of buildings are reduced throughout time, the proportion of embodied carbon from buildings will be increasingly large, becoming a continuously more abundant source of emissions associated within the built environment. It is paramount that embodied carbon emissions must keep up with reductions to operational emissions, which are being driven by decarbonisation of the grid and enhanced energy efficiency.

**4.28.** To achieve embodied carbon reductions, it is essential that embodied carbon is strongly accounted for at the initial design and construction stages.

## **Benchmark Ranges**

Compiled January 2015 by Atkins (F&G) using industry information (WRAP, RICS) and existing British Land detailed project analysis.

kg CO <sub>2</sub> /m <sup>2</sup>	Residential	Cinema/Leisure	Office	Retail
Sub-structure	120-170	100-130	190-230	230-270
Super structure	180-200	240-260	430-460	240-260
Ex. Cladding	180-200	180-200	110-150	170-190
Landlord M+E	70-90	50-70	70-90	70-90

Figure 1. – Benchmark ranges provided by Atkins (2015).

**4.29.** The above values show benchmarks for different building typologies; they are all well below the 900 kgCO<sub>2</sub>e/m<sup>2</sup> target set out in this policy. Therefore, if the development is not compliant with this policy, a valid justification must be provided with detail.

## 4.f - Embodied Carbon | Table 6

### Guidance on Performing Embodied Carbon Assessment

**4.30.** A strong starting point, particularly for those who are relatively inexperienced with embodied carbon, would be to use the PAS 2080 framework (2016 Carbon management in infrastructure). An external consultant may also be helpful at these initial stages when carrying out embodied carbon assessments. It is important that these assessments are carried out consistently, under the same level of knowledge and detail throughout stages.

**4.31.** It is recommended that an initial embodied carbon assessment is carried out at the earliest possible stage, during the design stage. This allows changes to be made prior to conceptual design initiation.

**4.32.** Communication to design and construction teams must be well developed, to ensure that embodied carbon requirements are integrated at all stages of the building's construction.

**4.33.** The most uncertainty and associated assumptions will be apparent at the initial design stage. However, this is useful because it gives the developer the best chance of reducing uncertainty as future assessments will require less assumptions due to the confirmation of certain design approaches and materials to-be-used. For this reason, embodied carbon assessments should be carried out throughout all design stages to maximise accuracy.

**4.34.** If accuracy is not maximised, non-compliance with the policy will be more likely when the post-construction assessment is carried out. These assumptions should be clearly stated.

**4.35.** Procurement strategies should be set early, to ensure that the requirements of this embodied carbon policy are understood and incorporated into the overall strategy, which is particularly relevant to the carbon impact from the manufacturing of selected products.

### Calculations

**4.36.** Acceptable approaches to calculate embodied carbon:

- Calculation methodology should conform with BS 15978; 2011 Sustainability of construction works – assessment of environmental performance of buildings
- RICS 2014 methodology to calculate embodied carbon
  - Approaches used other than the above must provide a valid justification
- Data gathering shall conform to ISO 14025: 2010 Environmental labels and declarations. Type III environmental declarations. Principles and procedures.

**4.37.** Assessments should be provided at the:

- Application submission stage
  - Post-construction/handover stage
- 11.14. Differences will inevitably occur between the 2 assessments and should be explained where improvements have been made.

### Data and Tools

**4.38.** Preferable data sources for embodied carbon calculations are:

- Environmental-product-declarations (EPDs)
- The University of Bath ICE database
- Proprietary data and databases

**4.39.** Valid justification must be provided if the data used results in calculation differences from the above data sources.

**4.40.** Embodied carbon factors of high accuracy and reliability are essential; EPDs and the ICE database are robust and reliable, therefore should be used.

**4.41.** If specific carbon factors for materials used are not available, it is advised that carbon factors should be manually generated using Fig. 9 from the RICS Methodology to Calculate Embodied Carbon of Materials.

**4.42.** IMPACT compliant tools are based on the same methodology and the data is in line with BS 15978. The following softwares are recommended:

- IES-ve IMPACT plug-in
- eTool
- Bionova

# 4.f - Embodied Carbon | Table 6

**4.43.** Data quality standards are similarly available and should be utilised. Verifiable data is required; proof for audit is desirable. An external assessor could be used here to determine what standards are appropriate and can be complied with, whilst ensuring data verification throughout assessments and calculations.

**4.44.** The embodied carbon assessment should provide data that is compatible for:

- ISO 14064-1 Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
- ISO 14064-2 Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements.
- The Greenhouse Gas (GHG) Protocol Scope 3 Standard
- PAS 2080:2016 Carbon management in infrastructure.

## Calculation Table/Results Presentation

**4.45.** All remaining assumptions of the embodied carbon assessments should be clearly stated and explained.

**4.46.** Provide explicitly clear values of total kgCO<sub>2</sub>e per building element (per m<sup>2</sup>) (per submodule of BS 15978 modules A1-A5):

**4.47.** Provide explicitly clear values of total tCO<sub>2</sub>e per building element (per element of BS 15978 modules A1-A5):

### Product

- A1 – Raw Material Supply
- A2 – Transport
- A3 – Manufacturing

### Construction Process

- A4 – Transport
- A5 – Construction Installation Process

**4.48.** It should be guaranteed that the following building elements stated below are accounted for throughout the calculations of the stages set out above:

### i. Substructure

- a. Foundations
- b. Basement retaining walls
- c. Ground floor construction

### ii. Superstructure

- a. Frame
- b. External walls
- c. Cladding
- d. Exterior works
- e. Roof
- f. Upper floors
- g. Stairs and ramp

### iii. Services

- a. E.g. waste
- b. Transport

### iv. Any other major elements

- a. Carbon sequestration integrated into building elements

**4.49.** The table below is an example of how calculations could be presented. If another format is preferred, it must be ensured that it is similarly easy to follow, with total values clearly presented. The table below is an example for one particular material and the values shown are not attributed to a real building.

**4.50.** The total embodied carbon per m<sup>2</sup> (kgCO<sub>2</sub>e/m<sup>2</sup>) is acquired by dividing the total sum of all values in the 'Total embodied carbon for modules A1 – A5' column by the m<sup>2</sup> value of the development. Note that this value will need to be converted from tCO<sub>2</sub>e/m<sup>2</sup> to kgCO<sub>2</sub>e/m<sup>2</sup>.

Table 6—Embodied Carbon (Policy SCR8)									
Material	Quantity (t)	Embodied carbon factor (kgCO <sub>2</sub> e/kg)			Embodied carbon (tCO <sub>2</sub> e)			Total embodied carbon (tCO <sub>2</sub> e) for modules A1 – A5	Total embodied carbon per m <sup>2</sup> for policy SCR8 (kgCO <sub>2</sub> /m <sup>2</sup> )
		A1 – A3	A4	A5	A1 – A3	A4	A5		
E.g.		A1 – A3	A4	A5	A1 – A3	A4	A5		
Steel frame	23.8	2.45	0.032	0.025	58.3	0.8	0.6	59.7	
Total								...	

## 4.g - Water | Table 7

### Policy SCR5 water – Applies to all applications for one dwelling or more

**4.51.** Efficient use of water is important now and will become increasingly crucial as the climate changes.

**4.52.** Full applications or Outline/ Reserved Matters applications applying for Appearance for residential proposals are to complete Table 7 Mixed use proposals should provide an assessment for the residential element of the scheme.

**4.53.** Major residential applications are to attach either

- The outputs of a Part G Water Calculator (widely available online) to illustrate the water efficiency strategy and demonstrate that the standard has been met OR
- If the “fittings” approach is being taken to Part G compliance, to state that the consumption of fittings will not exceed the requirements in the table for the 110 litre “Optional standard” in the Part G document.<sup>2</sup>

**4.54.** Pre-applications are encouraged to provide an outline of their approach to water efficiency in the narrative section of the table.

<b>Table 7 - Water (Policy SCR5)</b>
<b>Required for:</b> Full applications or outline/ reserved matters applications for Appearance for residential development, or the residential element of a mixed-use scheme. Pre-applications within this scope are encouraged to provide a summary of the approach in the box below.
Outline below the approach to water efficiency e.g. low-flow rate sanitary ware and white goods. Please also describe rainwater harvesting methods to be used.
<i>[Insert text here]</i>
<b>Please tick both boxes below to confirm compliance</b>
<p>The 110 litres per person per day requirement will be met</p> <p>Rainwater harvesting or other methods of capturing rainwater for use by the residents (e.g. water butts) has been included</p>
<b>Please tick one of the boxes below to confirm compliance</b>
<p>If the Water Calculator approach to Part G compliance has been taken, please attach the output from an accredited Part G water calculator, demonstrating compliance with the 110 litre “Optional Standard” <u>This is required for registration of the application.</u> <b>OR</b></p> <p>If the “fittings” approach to Part L compliance is being used, please tick here to confirm that fittings will not exceed the consumption levels set out in the table for the 110-litre standard in the Part G document.</p>

<sup>2</sup> Part G 2016 Amendments, Page 19: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/504207/BR\\_PDF\\_AD\\_G\\_2015\\_with\\_2016\\_amendments.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/504207/BR_PDF_AD_G_2015_with_2016_amendments.pdf)

# 4.h - Overheating | Tables 8.1, 8.2, 8.3, and 8.4

## To be completed by applications for Large Scale Development (50 dwellings or more/ 5000sqm of floor space or more)

**4.55.** Climate change is already causing overheating. Climate science indicates the temperature will be significantly warmer over the lifetime of the buildings. Building design should eliminate or minimise the need for air conditioning (active cooling) in a warmer climate to reduce CO2 emissions and the urban heat island effect.

**4.56.** Policies SCR6 and SCR7 require the submission of a CIBSE assessment for large scale developments

**4.57.** Large scale definition: Large scale new-build developments (50 dwellings + or 5000m2 + of floor space) should show leadership in tackling overheating. This includes proposals which in total meet the criteria for large scale, e.g. a mixed-use development with 20 residential units plus 4500m2 floor space.

## CIBSE Assessment

**4.58.** The compliance tools for Building Regulations are not intended to accurately evaluate overheating, so Large Scale proposals are to use the more sophisticated CIBSE standards TM52 for non-residential development and TM59 for residential development<sup>3</sup>. The CIBSE methodologies use the criteria below:

- TM59 & TM52: “Hours of Exceedance”, a measure of how often the temperature exceeds a threshold comfort temperature during a typical warm season and sets a limit of 3% of occupied hours.
- TM52: “Daily Weighted Exceedance”; the severity of overheating within any one day. The limit is no more than 6 hours a day above the thermal comfort threshold.
- TM52: “Upper Limit Temperature” which sets an absolute maximum temperature for a room beyond which the level of overheating is unacceptable.

## Modelling Requirements

**4.59.** The CIBSE assessment should be run twice with the following data files/ scenarios:

- Current Climate using CIBSE Design Summer Year (DSY1) for the 2020s, high emissions, 50th probability scenario (Swindon data should be used for this and all other modelling using CIBSE files).
- Future Climate, since the buildings constructed today will still be occupied in 2050, it is important to consider how buildings will perform under future conditions. 2050 files, medium emissions, 50th probability scenario. Applicants can use the CIBSE 2050 data files, or those from Project COLBE4 which use climate change models at a 5km grid resolution.

## Policy benchmark

**4.60.** Meet the CIBSE TM59 or TM52 standard for the 2020s scenario (CIBSE DSY1), showing that active cooling is not needed in the current climate, meeting criteria A and B (hours of exceedance in living rooms, kitchens and bathrooms and hours of exceedance in bedrooms). This is very likely to mean the use of external shading such as brise soleil, which should be incorporated in the drawings, and the specification of openable windows.

**4.61.** Outline a strategy for the future climate showing how the building has been future-proofed to enable further passive overheating measures, e.g. the ability to install further external shading, deciduous trees that will reach maturity over the lifetime of the building.

3- Links to the CIBSE standards can be found here: <https://www.cibse.org/news-and-policy/policy/overheating-position-statement>

4- <http://projectcolbe.org/>

## 4.h - Overheating | Tables 8.1, 8.2, 8.3, and 8.4

**4.62. Table 8.1.-** Overheating Mitigation Strategy. Large residential developments of 50 dwellings or more and non-residential developments of more than 5000m<sup>2</sup> are to submit a strategy exhibiting how overheating can be mitigated in the future climate. For each building element stated in the table, describe how the development ensures that these overheating mechanisms are accounted for and integrated into the design of the building (s).

**4.63. Table 8.2- Overheating in residential development:** Large residential proposals of 50 units or more should conduct the assessment for CIBSE TM59 “Design methodology for the assessment of overheating risk in homes”<sup>5</sup>. Outputs are to be used to complete Table 8.2. The CIBSE assessment is to be undertaken on a baseline building with no active cooling, to demonstrate that passive measures have been maximised. We expect most residential development to achieve a “pass” for the current climate without active cooling.

**4.64. Table 8.3- Overheating in non-residential development:** Large non-residential proposals of more than 5000m<sup>2</sup> are to use the methodology in CIBSE TM52 “The Limits of Thermal Comfort: Avoiding Overheating in European Buildings”. Modelling should be conducted for the part of the building that has the greatest risk of overheating as per the CIBSE methodology. The CIBSE assessment is to be undertaken on a baseline building with no active cooling, to demonstrate how passive measures have been maximised.

**4.65. Table 8.4- Active Cooling:** It is acknowledged that for some proposals e.g. offices with deep floorplates active cooling may be needed and may be a more energy efficient way to meet the requirements of TM52 when compared to increasing non-cooled airflow. If this is shown to be the case, active cooling systems are to exceed the requirements of Part L.

**4.66.** To verify compliance, the Part L output report’s ‘HVAC Systems Performance’ table is to be attached. This compares the cooling demand of the actual and notional buildings. Applicants should reduce the actual cooling demand below that of the notional Part L compliant cooling demand for each of the non-domestic spaces in the development where an active cooling load exists. This may mean that more than one copy of Table 8.4 is completed.

**4.67.** The output and inputs documents from the Part L assessment containing the HVAC Systems Performance table are to be attached to the application.

### Assessment at the application stage and again to discharge the condition

**4.68** Whilst overheating modelling at the pre-planning stage may not reflect the details of the final design, modelling at an early stage ensure that consideration of overheating is embedded at an early stage. Overheating should then be considered throughout the design and build process, ensuring that the building is still compliant in order to discharge the planning condition.

**4.69. Multiple Buildings:** Proposals with multiple buildings are to assess a representative sample of each building type. For apartment buildings this could be a representative sample of dwellings within the apartment block. Please consult during the pre-application process about how many assessments are needed.

**4.70. Exemptions:** Large proposals are expected to conduct an assessment as above unless the applicant can demonstrate exceptional circumstances where opportunities for reducing cooling demands via passive measures are constrained, for example industrial buildings including warehouses used for storage purposes; supermarkets; cinemas or theatres; laboratories or temporary structures. In such cases, the exemption should be stated in Non-Compliance table 10 with reference to this paragraph.

**4.71.** In the case of query during the application process, the full written report using the CIBSE methodology including modelling outputs, or direct contact with modelling personnel may be required for verification.

5- <https://www.cibsejournal.com/technical/using-tm59-to-assess-overheating-risk-in-homes/>



## 4.h - Overheating | Tables 8.1, 8.2, 8.3, and 8.4

<b>Table 8.1—Overheating Mitigation Strategy, policy SCR6 and SCR</b>
<b>Required for:</b> Large scale full applications (50 dwellings or more/5000sqm of floor space) or outline/ reserved matters applications that address appearance.
Please describe how the Cooling Hierarchy has been followed. All sections are to be completed giving a <u>summary of the response to the issue</u> and cross-referencing where further detail can be found, in 500 words or less per section.
<b>Minimising internal heat generation through energy efficient design:</b> For example, passive design that minimises solar gain on south facing facades in buildings likely to overheat e.g. offices; heat distribution infrastructure within buildings should be designed to minimise pipe lengths, particularly lateral pipework in corridors of apartment blocks, and adopting pipe configurations which minimise heat loss e.g. twin pipes.
<i>[Insert text here]</i>
<b>Reducing the amount of heat entering the building in summer:</b> For example, through use of carefully designed shading measures, including balconies, louvres, internal or external blinds, shutters, careful planting of trees and vegetation to provide shade. Please also state the glazing ratios and explanation of mitigation of overheating/ daylight if the overall ratio is greater than 20% or smaller than 15%.
<i>[Insert text here]</i>
<b>Use of thermal mass and high ceilings to manage the heat within the building:</b> When carefully designed, exposed thermal mass (dense materials that can absorb and release heat slowly) can help to absorb excess heat within the building. Please cite floor to ceiling heights.
<i>[Insert text here]</i>
<b>Passive ventilation:</b> For example, through the use of openable windows, cross-ventilation, dual aspect units, designing in the ‘stack effect’
<i>[Insert text here]</i>
<b>Mechanical ventilation:</b> Mechanical ventilation can be used to make use of ‘free cooling’ where the outside air temperature is below that in the building during summer months. If Mechanical Ventilation with Heat Recovery (MVHR) is used, please confirm that there is a by-pass on the heat recovery system for summer mode operation.
<i>[Insert text here]</i>

## 4.h - Overheating | Tables 8.1, 8.2, 8.3, and 8.4

Table 8.2—Overheating in residential development, CIBSE TM59 (Policy SCR6)							
<b>Required For: Large scale</b> full applications or outline/ reserved matters applications for Appearance. The proposal should achieve a “pass” in the current climate scenario to comply with SCR6.							
Zone Name and Room Use	Criterion A: Hours of exceedance for living rooms, kitchens and bedrooms			Criterion B: Hours of exceedance for bedrooms only			Result  To meet the benchmark, Criteria A & B to be met for current climate
	A. Occupied Hours	B. Max. no. hours exceedance (3% occupied hours)	C. Calculated No. hours exceeding Comfort Range – <b>Not to exceed “B”</b>	D. Annual Night time occupied hours	E. Max. no. hours exceedance (1% occupied hours)	F. Calculated no. hours exceeding Comfort Range – <b>Not to exceed “E”</b>	
Example: Bedroom 1	3,672	110	90	3285	32	25	Pass <input type="checkbox"/>
Example: Living room	1,989	59	40	n/a	n/a	n/a	Pass <input type="checkbox"/>
<b>CURRENT CLIMATE - CIBSE DSY1.</b> Results expressed in hours							
[Add rows as needed]							Pass <input type="checkbox"/>
<b>FUTURE CLIMATE:</b> Results expressed in hours							
Add rows as needed]							Pass <input type="checkbox"/>
Please tick to verify that modelling cover sheets for “current climate” and “future climate” assessments are attached summarising performance and that a written report for TM59 has been produced in line with the CIBSE methodology. <u>This is required for registration of the application</u>							
For accommodation with vulnerable occupants such as babies, elderly or disabled people, tick to verify that the Type 1 occupancy parameters in CIBSE TM52 been used							
Which building/s were selected to model and why? Please reference the relevant plans				[Insert text here]			
Which part/s of the building/s were selected to model and why? Please reference the relevant drawings				[Insert text here]			
Modelling inputs including the climate datasets, locations, software used and emissions scenario				[Insert text here]			
If the standard has not been met for the future climate scenario, please outline the future proofing strategy; how the current design enables future measures				[Insert text here]			
Name and company of independent assessor conducting the assessment: [Insert text here]							

## 4.h - Overheating | Tables 8.1, 8.2, 8.3, and 8.4

Table 8.3—Overheating in non-residential development, CIBSE TM52 (Policy SCR7)							
<b>Required For:</b> Large scale full applications or outline/ reserved matters applications for Appearance for non-residential proposals. The proposal should achieve a “pass” in the current climate scenario to comply with SCR7.							
Zone Name (E.g. stairwell)	Room use (e.g. circulation space)	Criterion 1: Hours of exceedance—Maximum number of hours internal temperature above outside temperature			Criterion 2: Daily weighted exceedance	Criterion 3: Upper limit temperature	Results  To meet the benchmark, 2 out of 3 criteria to be met for the current climate
		A. Occupied Hours – will depend on use type	B. Maximum number of hours of exceedance (3% occupied hours)	C. Calculated no. hours exceeding comfort range - <b>Not to exceed “B”</b>	D. Calculated peak daily weighted exceedance – <b>to be under 6 hours</b>	E. Calculated no. hours exceeding absolute limit – <b>to be zero hours</b>	
<b>CURRENT CLIMATE (CIBSE DSY1):</b> Results expressed in hours							
[Add rows below]							<b>Pass</b>
<b>FUTURE CLIMATE:</b> Results expressed in hours							
[Add rows below]							<b>Pass</b>
Please tick to verify that modelling cover sheets for “current climate” and “future climate” assessments are attached summarising performance and that a written report for TM52 has been produced in line with the CIBSE methodology. <u><a href="#">This is required for registration of the application</a></u>							
For accommodation with vulnerable occupants such as babies, elderly or disabled people, tick to verify that the Type 1 occupancy parameters in CIBSE TM52 been used							
Which building/s were selected to model and why? Please reference the relevant plans					[Insert text here]		
Which part/s of the building/s were selected to model and why? Please reference the relevant drawings					[Insert text here]		
Modelling inputs including the climate datasets, locations, software used and emissions scenario					[Insert text here]		
If the standard has not been met for the future climate scenario, please outline the future proofing strategy; how the current design enables future measures					[Insert text here]		
Name and company of independent assessor conducting the assessment: [Insert text here]							

## 4.h - Overheating | Tables 8.1, 8.2, 8.3, and 8.4

Table 8.4—Active Cooling	
<b>Required For:</b> Full applications or outline/ reserved matters applications for Appearance for large scale residential or non-residential proposals.	
Please describe below why active cooling would result in lower CO2 emissions whilst meeting the CIBSE TM52 requirement than alternatives and outline the active cooling strategy. Include the type of plant and efficiencies, and if renewable cooling sources such as ground or river water cooling are to be used.	
[Insert text here]	
Please insert below the figures from the BRUKL “HVAC Systems Performance” table	Area weighted average building cooling demand (MJ/m2)
Actual (must be lower than the notional value):	[Insert text here]
Notional:	[Insert text here]
Part L output section containing the “HVAC Systems Performance” table is attached. <u>This is required for registration of the application.</u>	

# 4.i - District Heating | Tables 9

**Applies to applications that include a connection to a district heating network or an application located within a district heating priority area.**

**4.72.** District heating/ heat networks can reduce carbon emissions by using a shared renewable or low carbon heat source. The Council has conducted extensive research into heat networks to identify the opportunity areas. Placemaking Plan Policy CP4 outlines the district heating priority areas.

**4.73.** To determine if policy CP4 applies, please check the GIS layers on the Council's My Maps application<sup>6</sup>; these maps may change as our evidence base is refined.

**4.74.** Full guidance for the completion of Table 9 is contained in the "Heat Networks Guidance Note" that accompanies this SPD and can be found on the same webpage.

**4.75.** Whilst all scales of development in the Heat Network areas are expected to consider heat networks, it is understood that heat networks may be unfeasible for some developments e.g. individual dwellings or refurbishments of small non-residential units. In these cases, please provide an explanation in Question 13.

6- <https://isharemaps.bathnes.gov.uk/atmycouncil.aspx?MapSource=Bathnes%2Fplanning&St>

Table 9—District Heating, policy CP4			
<b>Required for:</b> Full applications or outline/ reserved matters applications for Appearance within a Heat Network Priority Area. Pre-applications are encouraged to respond to questions 1 - 5.			
See Section 13 of the Guidance and the <b>separate "Heat Networks Guidance Note"</b> for further detail and types and scales of development that may be considered for exemption.			
1	Is the proposal in a Heat Network Priority Area?	Yes	No
2	Is the proposal in a Heat Network Opportunity Area?	Yes	No
<b>If "Yes" to Question 1 (Priority Area), at least one of Questions 3-5 must also be a "Yes"</b>			
<b>If "Yes" to Question 2 (Opportunity Area), please complete the table. If Questions 3-5 are "No" please explain further in Question 13.</b>			
3	Does the proposal include a heat network? If "Yes" please complete question 8.	Yes	No
4	Does the proposal include connection to an existing heat network? If "Yes" please complete question 8.	Yes	No
5	Is the proposal future-proofed to connect to future heat networks? If so, the answer to Questions 9- 12 should be "Yes"	Yes	No
6	If the proposed development is in proximity to an existing district heating scheme (e.g. Bath Western Riverside), has the incumbent district heating operator been contacted to discuss the potential for connection to the existing network? Proof of contact with the operator may be required.	Yes	No
7	If the proposed development is a large scale multi-building development (e.g. over 500 residential units and/or over 10,000m <sup>2</sup> of non-residential floor space – in particular with hotels, hospitals, leisure centres or student residences), has an <b>open-book viability assessment for district heating been carried out and full report attached?</b>	Yes	No
8	<b>If a heat network or connection to a heat network is proposed, has a document providing further details been attached?</b> Please reference below.  If a fossil-fuelled heat source is proposed please summarise below the strategy for switching to a renewable heat source in the future. Where a mix of energy sources is being proposed e.g. biomass with backup gas boilers, please explain how it will be ensured that post-occupation the energy mix will be as is stated in the Checklist (e.g. not just using the backup gas boilers).  [Insert text here]	Yes	No
<b>Future Proofing</b>			
9	<b>Single heat source:</b> If the development includes residential apartment buildings, is heating provided to the apartments from a single central heat source as opposed to heating plant for individual units? Please explain in Question 13 if the answer is "no".	Yes	No
10	<b>Protected Pipe Routes:</b> (a) Has a potential intake route for district heating pipe to the building(s) been identified and safeguarded? (b) Have the pipe routes been safeguarded to connect from the building plant room to the route of the district heating network? Enterprise Area applications please reference the "Potential District Heating Cluster" map in the Heat Networks Guidance Note. Please note below the document and page number containing the drawing/s upon where these measures are identified.  [Insert text here]	Yes	No
11	<b>Plant room location:</b> Is the heating plant room(s) in a location that allows access for district heating pipe (e.g. located on ground floor, adjacent to public highway) Please note below the document and page number containing the drawing/s upon where these measures are identified.  [Insert text here]	Yes	No
12	<b>Plant room design:</b> Does the plant room design allow for future connection e.g. space allowed for installation of a plate heat exchanger and additional plant as required? Please note below, including summary calculations for space allocated, and reference the document and page number showing where this is included in drawings.  [Insert text here]	Yes	No
13	<b>Please add any further information</b>  [Insert text here]		

## 4.j - Non-compliance | Tables 10

If the proposed development does not comply with the requirements of the above policies please complete table to provide details of non-compliance.

Table 10 - Non-Compliance
We expect development to be able to comply with the policy requirements. If non-compliance with any of the Sustainability requirements is proposed on the grounds of viability or technical feasibility, a full open-book viability test or technical rationale is likely to be required and the applicant will be expected to pay the cost for an independent review to determine its validity.
<b>In the case of proposed non-compliance, the Checklist is still to be completed in full, making it clear which sections are non-complaint.</b>
<b>Please tick here if non-compliance with any of the policies above is proposed <input type="checkbox"/></b>
Please summarise below the policies for which non-compliance is proposed and summarise the rationale for non-compliance and reference the background reports.
<i>[Insert text here]</i>
If non-compliant on cost/viability grounds: An open-book viability test is attached If non-compliant on technical feasibility: An open-book technical rationale is attached

# Appendix 1 Sample Conditions

# Appendix 1

## Sample conditions

Compliance with the policies will need to be assessed at the application stage and post construction stage to ensure that the constructed buildings does comply with the policies. Below are sample conditions relating to each policy.

### SCR6 residential properties

Prior to occupation of the development hereby approved the following tables (as set out in the Council's Sustainable Construction Checklist Supplementary Planning Document shall be completed in respect of the completed development and submitted for approval to the local planning authority together with the further documentation listed below. The development must comply with the requirements of SCR6.

- Table 1/2 Residential Development
- Table 1.2/2.2 Proposals with more than one building type (if relevant)
- Building Regulations Part L post-completion documents for renewables;
- Building Regulations Part L post-completion documents for energy efficiency;
- Microgeneration Certification Scheme (MCS) Certificate/s (if renewables have been used)

Reason: To ensure that the approved development complies with Policy SCR6 of the Local Plan Partial Update

### SCR7 Non-residential properties

Prior to occupation of the development hereby approved the following tables (as set out in the Council's Sustainable Construction Checklist Supplementary Planning Document shall be completed in respect of the completed development and submitted for approval to the local planning authority together with the further documentation listed below. The development must comply with the requirements of SCR7.

- Table 3 Non- Residential Development
- Table 3.2 Proposals with more than one building type (if relevant)
- Building Regulations Part L post-completion documents for renewables;
- Building Regulations Part L post-completion documents for energy efficiency;
- Microgeneration Certification Scheme (MCS) Certificate/s (if renewables have been used)

Reason: To ensure that the approved development complies with Policy SCR7 of the Local Plan Partial Update

### CP1 Major or Medium works to an Existing Building

Prior to the occupation of the development hereby approved the following tables (as set out in the Council's Sustainable Construction Checklist Supplementary Planning Document shall be completed in respect of the completed development and submitted for approval to the local planning authority together with the further documentation listed below. The development must comply with the requirements of CP1.

- Table 4 Major or Medium works to an Existing Building
- Building Regulations Part L post-completion documents for renewables;
- Building Regulations Part L post-completion documents for energy efficiency;
- Microgeneration Certification Scheme (MCS) Certificate/s (if renewables have been used)

Reason: To ensure that the approved development complies with Policy CP1 of the Local Plan Partial Update

### Passivhaus exemption

Prior to occupation of the development hereby approved the following tables (as set out in the Council's Sustainable Construction Checklist Supplementary Planning Document) shall be completed in respect of the completed development and submitted for approval to the local planning authority together with the further documentation listed below:

Passivhaus Certification by accredited Passivhaus Certifier

If Passivhaus certification is not achieved, the documentation for compliance with the relevant policy, SCR6 or SCR7 shall be submitted.

Reason: To ensure that the approved development complies with Policy SCR6/7 of the Local Plan Partial Update



# Appendix 1

## SCR5 Water

The dwellings hereby approved shall be constructed to meet the national optional Building Regulations requirement for water efficiency of 110 litres per person per day.

Reason: In the interests of water efficiency in accordance with Policy SCR5 of the Placemaking Plan

## SCR6 and SCR7 overheating

### Large Scale Residential (50+) Dwellings

Prior occupation of the development hereby approved the following tables (as set out in the Council's Sustainable Construction Checklist Supplementary Planning Document) shall be completed in respect of the completed development and submitted, along with supporting documents, to the local planning authority:

- Table 8.1
- Table 8.2
- Table 8.4 (if using active cooling)

Reason: To ensure that the approved development complies with Policy SCR6 of the Local Plan Partial Update

### Large Scale Non-Residential (5000m<sup>2</sup>+ floor space created)

Prior to occupation of the development hereby approved the following tables (as set out in the Council's Sustainable Construction Checklist Supplementary Planning Document) shall be completed in respect of the completed development and submitted, along with the supporting documents required, to the local planning authority for approval:

- Table 8.1
- Table 8.3
- Table 8.4 (if using active cooling)

Reason: To ensure that the approved development complies with Policy SCR6 of the Local Plan Partial Update

## CP4 - District Heating

Prior to occupation of the development hereby approved a document demonstrating how the building has been futureproofed for connection to a district heating network shall be provided for approval. The document should state the preferred intake route for the district heating pipework to the heating plant room(s). The document should show how the building design follows the relevant clauses of Objective 3.4 "To Design or Modify Suitable Space Heating and Domestic Hot Water Services Systems" of the CIBSE & ADE Heat Networks: Code of Practice for the UK. Where a clause is not relevant the document should state why. Multi-residential buildings should also demonstrate how the design follows the relevant clauses of Objective 3.9 "To Achieve an Efficient Heat Distribution System Within a Multi-residential Building and Reduce Risk of Overheating".

Reason: To ensure that the approved development complies with Policy CP4 of the Core Strategy