

BATH AND NORTH EAST SOMERSET

**SUSTAINABLE CONSTRUCTION CHECKLIST
SUPPLEMENTARY PLANNING DOCUMENT**

CONSULTATION DRAFT SPRING 2018



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PART 1: GUIDANCE

The Guidance below sets out the rationale for the Sustainable Construction Checklist Supplementary Planning Document (SCC SPD) and how the Checklist in Part 2 should be completed.

Background

Environmental sustainability and climate change is a key priority for Bath & North East Somerset Council. Our Environmental Sustainability and Climate Change Strategy¹ sets a CO₂ reduction target for the area of 45% by 2029, in line with the government's legally-binding target to cut national emissions 80% by 2050.

Development can play an important role in meeting this target, by minimising the emissions that cause climate change and future-proofing to cope with the climatic changes that will take place within the buildings' lifetime. To facilitate this, tackling climate change is a cross-cutting objective within the Placemaking Plan.

Case Study: The Council aims to exemplify sustainable construction in our own development projects, for example Keynsham Civic Centre, pictured below. Our experience has been that energy efficiency does not have to cost more; by using a fabric-first approach, renewable energy and good design, the Civic Centre was built to achieve a Display Energy Certificate rating of "A" at no capital cost uplift. Annual energy bills have fallen from c.£180,000 in our old office to c.£7,000 at the Civic Centre. The focus on sustainability has also resulted in a healthy and comfortable environment for our staff and the receipt of many awards.



¹ Bath and North East Somerset Environmental Sustainability and Climate Change Strategy 2016-2020

http://www.bathnes.gov.uk/sites/default/files/siteimages/Environment/Sustainability/new_structure_es_p_strat_version_9_-_web.pdf

Scope, Definitions and Approach

Climate Change Policies: The SPD address the key policies in the “Responding to Climate Change” section of the Placemaking Plan². Please review this section in full for complete policy wording and further policies that are not covered by the SPD. Please also refer to our existing Sustainable Construction and Retrofitting SPD³ which contains detailed guidance for the building types in our district, including historic buildings. Other aspects of sustainability such as transport, drainage and ecology are handled separately and are outside the scope of this SPD.

Which proposals need to complete the checklist?

- All new build proposals
- All proposals for works on existing buildings that have 5 or more dwellings or 500m² or more of floor space to be created.

Definitions of development size:

- Large Scale development: 50 dwellings + or 5000m² + of floor space to be created.
- Major development: 10 + dwellings or 1000m² + of floor space.
- Medium development: 5-9 dwellings or 500m² to 999m² of floor space.
- Minor development: 1-4 dwellings or up to 499m² floor space.

Two stage compliance process: The Checklist and accompanying documentation is to be submitted where required (1) at the application stage in order to register an application and (2) in order to discharge planning conditions.

Application Stages: The checklist is required in order to register all outline, full or reserved matters planning applications, except reserved matters applications for Access. Please see guidance below for which sections to submit by when. We also advise that the checklist is submitted with pre-application proposals.

Change of Use: For change of use proposals, policies will be applied to the proposed use. For example, if a non-residential building is being changed into dwellings, the proposal is to comply with the requirements for dwellings.

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.

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

Queries: Please call Planning Services on 01225 394041 or email development_management@bathnes.gov.uk.

² <http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/placemaking-plan>

³ <http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/supplementary-planning-documents-spds/sustain>

SECTION 1: THE PROPOSAL

Table 1.1: THE PROPOSAL: Please input details of the proposal, stating the type and size of development and whether it is Large Scale, Major, Medium or Minor. Also note the type of application – if it is an Outline application please state which Matters have been reserved, or if it is a Reserved Matters application, please state which Matter/s the application covers.

SECTION 2: ENERGY EFFICIENCY & RENEWABLE ENERGY

1. Placemaking Plan Energy Policies

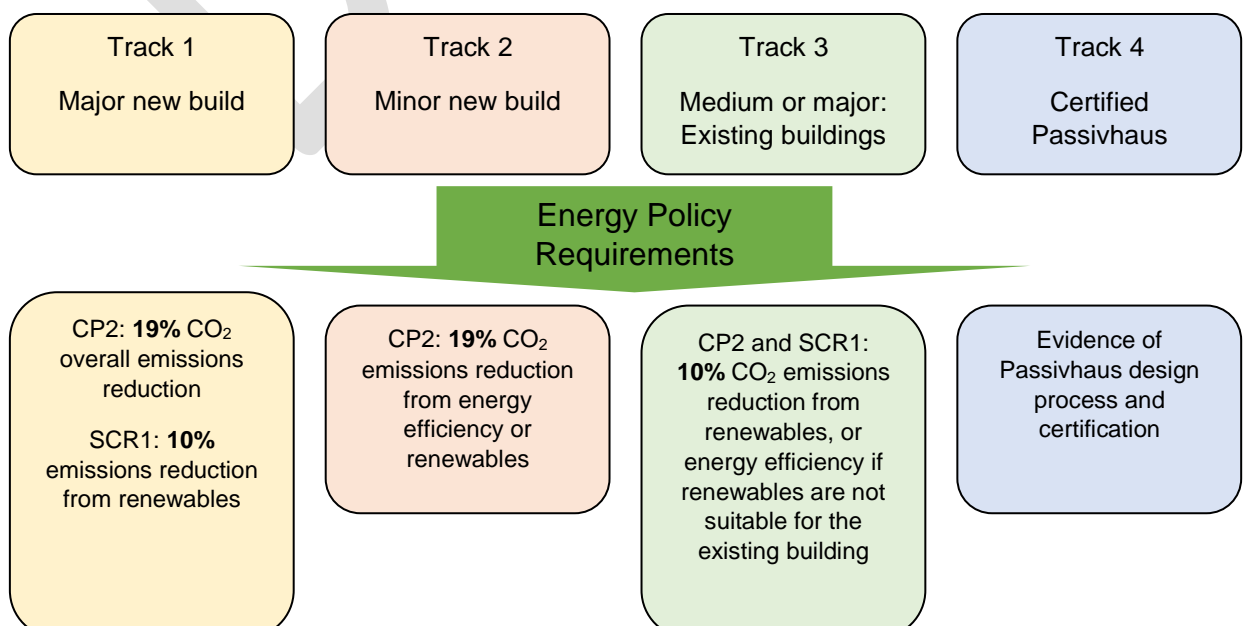
The SPD sets out the compliance requirements for the two key energy policies:

- 1. Core Policy 2 (CP2): Sustainable Construction:** *“All planning applications should include evidence that the standards below will be addressed... Maximising energy efficiency and integrating the use of renewable and low-carbon energy”*

The SPD sets new benchmarks for demonstrating that energy efficiency has been “maximised” as required by CP2.

- 2. Sustainable Construction Policy 1 (SCR1): On Site Renewable Energy:** *“Developers of Major proposals above a threshold of 1,000 square metres or 10 dwellings, excluding Industrial B2 and B8 uses, will be required to provide sufficient renewable energy generation to reduce carbon emissions from anticipated (regulated) energy use in the building by at least 10%”.*

All proposals need to respond to CP2 and major proposals will also need to respond to SCR1, as set out below:



2. Completing the Summary Tables 2.1 and 2.2

Table 2.1: Summary of requirements for Energy Tracks: This table is to be completed by all applicants, to clarify for applicants and officers what will be submitted and by when.

Please note the approach to compliance for two stage Outline/ Reserved Matters applications. Where Appearance is being applied for, we assume that sufficient detail is known for a meaningful assessment of energy performance. So, if Appearance is not a Reserved Matter, Outline applications will be expected to attach full compliance documentation. If Appearance is Reserved, the documentation should accompany the Reserved Matters application for Appearance.

Table 2.2: Summary of energy strategy: All Outline, Full or Reserved Matters applications are to complete this table. Even at Outline stage some factors e.g. form and orientation may be proposed and the choice of technology may be a consideration in determination. For Outline applications where little detail is known, please state which Reserved Matters applications will address the issues.

Each section is to contain 500 words or less, summarising the approach and not simply cross-referencing other documents. Citations of specific documents should be made to provide further detail, e.g. roof layouts for PV, Sustainability Statements etc. If the proposal is not taking one of the approaches listed, please state why.

3. Completing Tables 2.3, 2.4 and 2.5: General Points

- 3.1. **Building Regulations Assessments:** Policies CP2 and SCR1 address “regulated” emissions – those covered by Part L of the Building Regulations 2013⁴. Applicants are to demonstrate policy compliance through the energy assessment methodology that is already required for Part L compliance. Energy Tables 2.3 and 2.5 require figures from these assessments.
- 3.2. **Design stage and post-completion assessments documents needed:** In line with the two-stage compliance approach, energy tables are to be submitted at design stage and again post completion to discharge the condition. Energy tables are to be accompanied by the **summary page** from the design-stage Part L assessment/s and post-completion assessment to enable verification of the figures quoted in the Table.
- 3.3. **A qualified, independent energy assessor** is to model building performance using a thermal modelling tool approved for Part L compliance assessments e.g. the Standard Assessment Procedure (SAP) for residential development

⁴ If Part L, or the methodology used to calculate compliance, is updated, the compliance requirement for this policy may also be updated

or the Simplified Building Energy Model (SBEM) model for non-residential development.

- 3.4. This approach means that applicants may need a Part L assessment earlier in the design process than previously. This is to ensure the design maximises energy efficiency gains from “passive design⁵” from elements such as form, glazing and orientation. If these elements are not optimised at the earliest design stage, it becomes a lot harder and more expensive to achieve the energy performance required by the policies.
- 3.5. **Multi- building developments:** If the proposal contains a number of buildings types applicants are expected to:
- a. Demonstrate that a **representative building** from each building type is policy compliant, since the approach may be different for each type. For example, if a proposal contains large dwellings and small dwellings, non-residential buildings and works to existing buildings, a separate energy assessment and Table is required for a representative of each.
 - b. Confirm in the Table that the **site as a whole** will be policy compliant, explaining if performance is to be balanced across the site, e.g. if some buildings exceed the policy in order to offset lower performance in other buildings.

During the pre-application process, planning officers can advise on the number of assessments required. Please copy and paste the required number of tables into the same Checklist document so they can be viewed together. Scheme drawings should note which buildings have been selected. If queries arise, the Council may require assessments for other buildings on the scheme.

- 3.6. **Multiple-unit and mixed use buildings:** If a building contains more than one unit e.g. subdivided offices, a terrace or a block of flats, Block Compliance with the policy is to be demonstrated, as would be required by the Building Regulations, e.g. one assessment is to be conducted for the whole building. The same applies to mixed use buildings.
- 3.7. **Ventilation and Overheating:** High energy performance can, and should, result in more healthy and comfortable buildings. However, it must be considered in conjunction with other factors, in particular overheating (Section 5) and ventilation to avoid unintended consequences. For example, air tight

⁵ [Passive design](#) maximises the use of 'natural' sources of heating, cooling and ventilation to create comfortable conditions inside buildings. This is as opposed to 'active' design; using active building services systems to create comfortable conditions, such as boilers and chillers, mechanical ventilation, electric lighting, renewable energy and so on.

buildings must be adequately ventilated to prevent occupants having to open the windows in winter and losing energy.

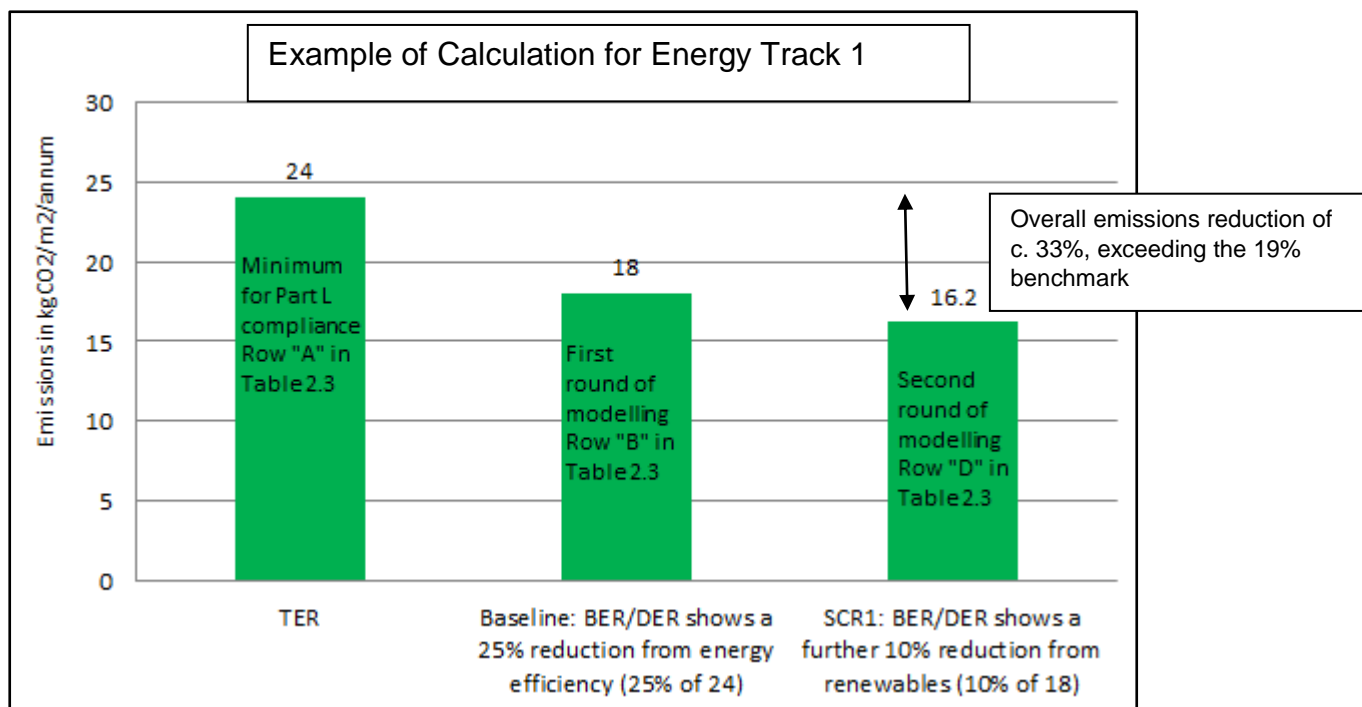
Track 1: Major new build developments - Tables 2.3 and 2.4

- 3.8. For Track 1, policies CP2 and SCR1 apply. The interaction of these policies is described below and in the chart overleaf.
- 3.9. **CP2: A 19% reduction in regulated CO₂ emissions:** The benchmark for demonstrating that energy efficiency has been “maximised”, as required by CP2, is a 19% reduction in regulated emissions. This is the equivalent of the energy requirement in the Code for Sustainable Homes Level 4.
- 3.10. **SCR1: 10% emissions reduction through renewables:** After energy efficiency measures have been accounted for, a further 10% emissions reduction is to be achieved through renewables. By using a baseline which takes energy efficiency measures into account, energy efficient schemes are rewarded with a reduced requirement for renewables to comply with SCR1.
- 3.11. The remaining CO₂ reduction required for the overall 19% reduction can be achieved through renewables or energy efficiency measures, including mechanical ventilation and heat recovery (MVHR) or low carbon energy such as gas-fired Combined Heat and Power (CHP).
- 3.12. **Table 2.3:** Since compliance with two policies; CP2 and SCR1 is required, two rounds of energy assessment are needed for Table 2.3:
- First round:** Calculate CO₂ reductions from energy efficiency measures, starting from a baseline⁶ of the Target Emissions Rate (TER)⁷ to produce a Dwelling Emissions Rate (DER) or Building Emissions Rate (BER)⁸ figure to use as the baseline for the second round of calculation.
 - Second round:** Calculate the contribution of renewables by adding the renewable energy measures to the model. This should be at least 10% and the overall emissions should be 19% or more less than the TER.

⁶ When determining the baseline, it should be assumed that the heating would be provided by gas boilers and that any active cooling would be provided by electrically powered equipment.

⁷ The target CO₂ 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 CO₂ emissions of a notional building of same type, size and shape to the proposed building. TER is expressed in annual kg of CO₂ per m².

⁸ The DER and BER is a calculation of the CO₂ emissions for the building as actually specified. For more information, see the [Designing Buildings Wiki](#).



- 3.13. **Table 2.4:** This is to be completed prior to occupation to discharge the planning condition, describing the renewables used and verifying that they will achieve the 10% emissions reduction. Please attach an MCS certificate for installations of up to 50kW (sample is included in the Appendix).

Track 2: Minor new build development - Table 2.5

- 3.14. Minor development is covered by Policy CP2 but not SCR1 so applicants can choose whether to use energy efficiency, low carbon energy or renewable energy to meet the requirement.
- 3.15. **CP2: A 19% reduction in regulated CO₂ emissions:** The benchmark for demonstrating that energy efficiency has been “maximised” as required by CP2 is a 19% reduction in regulated emissions. This is the equivalent of the energy requirement in the Code for Sustainable Homes (CfSH) Level 4.
- 3.16. **Table 2.5:** One energy assessment is required to demonstrate the 19% emissions reduction. A baseline of the Target Emissions Rate (TER) is to be used to produce a Dwelling Emissions Rate (DER) or Building Emissions Rate (BER) figure which is 19% lower than the TER.

Track 3: Major and medium development on existing buildings - Table 2.5

- 3.17. Track 3 applies to proposals of a medium scale or above; 5 + dwellings or 500m² + on existing buildings. Major developments also need to respond to SCR1, this is set out below.

- 3.18. Existing buildings may have fewer options for improving energy performance and measures should be sensitive to the existing building. To reflect this, the requirements are lower:
- a. **Lower benchmark for CP2:** The benchmark for CP2 compliance on medium scale development is lower than for new buildings; 10% compared to 19% for new buildings.
 - b. **Energy efficiency can be used on major proposals for SCR1 compliance:** Existing buildings may not be suitable for renewable energy. In this case, a 10% reduction in emissions can be achieved through energy efficiency.
- 3.19. 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.
- 3.20. **Table 2.5:** The table should demonstrate a 10% improvement in regulated CO₂ emissions compared to a baseline building that meets the requirements of Part L1B for residential developments and Part L2B for non-domestic buildings. The baseline building/dwelling(s) 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

The proposed building/dwelling(s) should be modelled as the proposed design. Any retained systems or fabric that is not upgraded should have the same performance as the baseline building/dwellings(s).

- 3.21. **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 application must provide full details of energy measures including their impact on fabric or building function. Further guidance is provided in the Council's [Sustainable](#)

[Construction and Retrofitting SPD](#), including advice on listed buildings and the particular building types in Bath and North East Somerset.

Track 4: Certified Passivhaus (Table 2.5)

- 3.22. Proposals certified to the Passivhaus⁹ standard for new build or Enerphit for existing buildings will be considered to have met the requirements for SCR1 and CP2, since the Passivhaus certification process itself has been demonstrated to reliably achieve reductions in energy use. Therefore Passivhaus projects do not need to incorporate renewables to demonstrate SCR1 compliance.

Passivhaus projects use rigorous design and construction 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 gap¹⁰” commonly found in new build projects, whereby energy use once occupied is significantly higher than predicted at the design stage.

- 3.23. **Compliance requirements:** In order to qualify for Track 4, applicants are to submit the following documents:
- a. All applications are to include a written statement signed by the developer and the qualified Passivhaus professional 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.
 - b. Full applications or Outline/ Reserved Matters applications for Appearance and Layout are to be accompanied by a summary output document from the Passivhaus Planning Platform (PHPP) software indicating that the design is Passivhaus compliant at this stage of development. These applications should also be accompanied by a completed Table 2.5 as per the methodology for Track 2 and supporting part L documents, which should show that emissions reductions are at least sufficient to achieve policy compliance.
 - c. There are a range of levels of Passivhaus certification and these may be subject to change. During the pre-application process, planning officers can advise on which of these will qualify for Track 4.
 - d. If a multiple-building proposal contains some units that are to be certified to Passivhaus and some that aren't, those that are not to be certified will need to meet the usual requirements of the Energy Tracks above.

⁹ <http://www.passivhaustrust.org.uk/>

¹⁰ <http://www.zerocarbonhub.org/current-projects/performance-gap>

- e. Achievement of Passivhaus certification will be a condition of consent, to be discharged by submission of a Passivhaus certification document prior to occupation.
- f. If Passivhaus certification is not achieved, compliance with SCR1 and CP2 as set out in the other Tracks is to be demonstrated in order to discharge the condition.

Exemptions

- 3.24. Our studies have shown that B2 and B8 industrial uses may find it more difficult to increase energy performance, so no requirements are set for these uses. This may be subject to change if studies are revised and applicants are still required to maximise energy performance, in line with CP2.

SECTION 3: DISTRICT HEATING

1. **Background:** District heating can reduce CO₂ emissions by using a renewable or low carbon heat source e.g. biomass, heat pumps or Combined Heat and Power.
2. **Placemaking Plan Policy CP4 - Table 3:** Below are excerpts from the Policy CP4:

*Development within Heat Network Priority Areas “will be **expected** to incorporate infrastructure for district heating, and will be expected to connect to existing systems where and when this is available, unless demonstrated that this would render development unviable”.*

For development in these Priority areas, full compliance with CP4 is required, as set out in Table 3.

*“Development within the Heat Network Opportunity Areas will be **encouraged** to incorporate infrastructure for district heating, and will be expected to connect to any existing suitable systems (including systems that will be in place at the time of construction), unless it is demonstrated that this would render development unviable”.*

For development in the Opportunity Areas, we expect to see consideration of heat networks as set out in Table 3.

3. **Maps:** To determine if a proposal is required to comply with CP4, please check the GIS layers on the Council's My Maps application¹¹; these maps may change as our evidence base is refined. These maps replace the "yellow circle" demarcations of Heat Network Priority Areas for the Enterprise Area, Central Bath and Keynsham on the maps contained within the Placemaking Plan.
4. **Table 3: See separate "Heat Networks Guidance Note" [forthcoming]:** CP4 only covers relatively limited areas, and requires detailed guidance which would not be relevant to most applications. In light of this, guidance for the completion of Table 3 is contained in a separate document which also contains all the technical considerations and requirements to demonstrate compliance with CP4.

SECTION 4: WATER

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

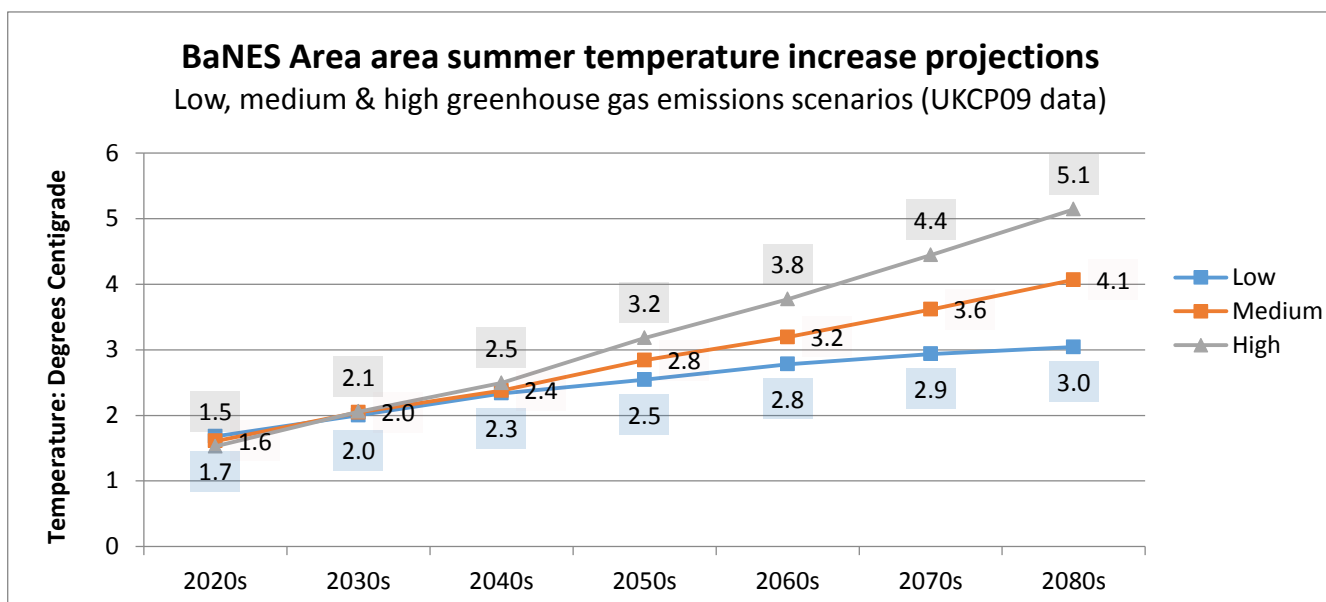
1. **Policy SCR5: Water Efficiency** states that:

- a) *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.*

2. **Table 4: Water:** Full applications or Outline/ Reserved Matters applications applying for Appearance for residential proposals are to complete Table 4. Mixed use proposals should provide an assessment for the residential element of the scheme.
3. **Major residential applications** are to attach the outputs of a Part G Water Calculator (widely available online) to illustrate the water efficiency strategy and demonstrate compliance with the standard. Pre-applications can provide an outline of their approach to water efficiency in the narrative section of the table.

¹¹ <https://isharemaps.bathnes.gov.uk/atmycouncil.aspx?MapSource=BathneS%2Fplanning&Sta>

SECTION 5: OVERHEATING



Global temperatures have already [risen 1°](#) from a pre-industrial baseline. A 2°C rise in temperature, predicted by the 2030s, would provide temperatures roughly equivalent to the South of France. Climate change is already causing overheating and this is likely to worsen over the lifetime of the buildings. The design of buildings should ensure comfortable conditions for future occupants without relying on carbon intensive active cooling. Policy CP2 states that all proposals should have “*consideration of climate change adaptation*” and overheating is a major element of this. All proposals are to respond to overheating, with specific requirements for Large Scale development.

All Proposals: Table 5.1

1. **Table 5.1: Overheating mitigation strategy:** Full applications or Outline/Reserved Matters applications for Appearance are to include Table 5.1 stating how the Cooling Hierarchy has been implemented:
 - I. **Minimising internal heat generation through energy efficient design:** For example, 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.
 - II. **Reducing the amount of heat entering the building in summer:** For example, through use of carefully designed shading measures, including

balconies, louvres, internal or external blinds, shutters, trees and vegetation.

- III. **Use of thermal mass and high ceilings to manage the heat within the building:** Increasing the amount of exposed thermal mass (dense materials that can absorb and release heat slowly) can help to absorb excess heat within the building.
 - IV. **Passive ventilation:** For example, through the use of openable windows, cross-ventilation, dual aspect units, designing in the 'stack effect'.
 - V. **Mechanical ventilation:** 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. This will require a by-pass on the heat recovery system for summer mode operation.
2. Overheating should be considered alongside other design criteria¹². Proposals should respond to their context and the measures set out in Table 5.1 will not be suitable in all cases. We expect to see the optimisation of measures that do not increase CO₂ emissions as opposed to active cooling e.g. air conditioning.

Large Scale Development: Tables 5.2 to 5.6

3. **CIBSE Assessment:** Large Scale new-build development can demonstrate leadership in tackling overheating. 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 development¹³.
4. The CIBSE methodologies assess "adaptive thermal comfort" which takes into account that building occupants already adapt to high temperatures, e.g. by wearing lighter clothing. This is captured in the criteria below:
 - I. 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.
 - II. 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.

¹² Approaches to overheating are summarised in the Zero Carbon Hub's leaflet: http://www.zerocarbonhub.org/sites/default/files/resources/reports/ZCH-OverheatingLeaflet-5-TechnicalSolutions-S_0.pdf

¹³ Links to the CIBSE standards can be found here: <https://www.cibse.org/news-and-policy/policy/overheating-position-statement>

- III. TM52: “Upper Limit Temperature” which sets an absolute maximum temperature for a room beyond which the level of overheating is unacceptable.
5. **Early-stage condition:** We appreciate that CIBSE assessments are a cost for applicants and also that they are not meaningful until the detailed design is complete. To reflect this, CIBSE assessments will be required at a later stage; in order to discharge an early-stage condition; instead of being required at the application stage. This means that the assessment is undertaken only once the design is finalised.
6. **Multiple Buildings:** Proposals with multiple buildings are to assess a representative sample of each building type. Please consult with an officer during the pre-application process about how many assessments are needed.
7. **Current and future climate scenarios:** Since the buildings constructed today will still be occupied in 2050, it is important to consider how buildings will perform under future conditions. The CIBSE assessment should be run twice with the following data files/ scenarios:
- I. **Current Climate:** 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).
 - II. **Future Climate:** 2050 files, medium emissions, 50th probability scenario. Applicants can select whether to use the CIBSE 2050 data files or those available from the PROMETHEUS¹⁴ project or its successor, Project COLBE¹⁵ which are based on climate change models and will shortly be available at a 5km grid resolution, including for Bath.
8. **Compliance benchmark:** Large development will be expected to meet the TM59 or TM52 standard for the 2020s scenario (CIBSE DSY1), showing that it will not require active cooling to remain comfortable in the current climate.
9. We expect most residential development to achieve a “pass” for the current climate, and most non-residential development also, unless there are exceptional circumstances, e.g. a deep-plan office building. If the proposal cannot achieve a pass without active cooling, Table 5.5 “Active Cooling” is to be used. It is understood that achieving compliance when using future climate scenarios may be more difficult. If a pass is not possible, Table 5.6 is to be completed (see below).

¹⁴ <http://emps.exeter.ac.uk/engineering/research/cee/research/prometheus/downloads/>

¹⁵ <http://projectcolbe.org/>

10. **Table 5.2: 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”*¹⁶. Outputs are to be used to complete Table 5.2. The CIBSE assessment is to be undertaken on a baseline building with no active cooling, to demonstrate that passive measures have been maximised. As noted above, two assessments are to be undertaken, for the current and future climate respectively.
11. **Table 5.3: Overheating in non-residential development:** Large non-residential proposals of more than 5000m² 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 that passive measures have been maximised.
12. Compliance benchmark: Meet the CIBSE standard in the current climate: Proposals are to achieve a “pass” for the current climate, meeting criteria A and B (hours of exceedance in living rooms, kitchens and bathrooms and hours of exceedance in bedrooms).
13. We expect residential development to achieve a “pass” for the current climate unless there are exceptional circumstances. If the proposal cannot achieve a pass without active cooling, Table 5.5 “Active Cooling” is to be used to show that the performance of the active cooling system exceeds the requirements of Part L.
14. **Table 5.4 CIBSE Modelling Notes:** CIBSE Modelling Notes is to be completed for all large scale applications to state how modelling has been conducted.
15. **Table 5.5: Active Cooling:** For some large proposals (e.g. offices with deep floorplates) active cooling may be a lower-carbon way to comply with CIBSE TM52 (e.g. when compared to increasing non-cooled airflow). If this can be shown to be the case, active cooling systems that exceed the requirements of Part L are to be used.
16. To verify compliance, the Part L output report’s ‘HVAC Systems Performance’ table is to be used. This compares the cooling demand of the actual and notional buildings for different building elements. 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 table is completed.

¹⁶ <https://www.cibsejournal.com/technical/using-tm59-to-assess-overheating-risk-in-homes/>

17. The results should be used to complete Table 5.4 and the output document from the Part L assessment containing the HVAC Systems Performance table is to be attached to the application.
18. **Table 5.6 Future Proofing:** Meeting the CIBSE standards using future data may not be achievable in all cases. In this case, Table 5.6: Future Proofing, should be completed, setting out how the existing design facilitates the implementation of further low or zero carbon measures to address overheating should they be needed in the future.
19. **Table 5.6: Future Proofing:** Meeting the CIBSE standards using future data may not be achievable in all cases. In this case, Table 5.6: Future Proofing, should be completed, setting out how the existing design facilitates the implementation of further low or zero carbon measures to address overheating should they be needed in the future.
20. **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.
5. **In the case of query** during the application process, a full written report using the CIBSE methodology including modelling outputs, or direct contact with the modelling personnel may be required for verification.

SECTION 6: SUSTAINABLE CONSTRUCTION

1. **Background:** CP2 sets out requirements for important aspects of sustainable construction that cannot be verified using a standard methodology e.g. a part L Assessment for energy or a CIBSE Overheating Assessment. Compliance with these requirements will be assessed on a case-by-case basis by planning officers and consultees.
2. **Table 6: Sustainable Construction:** Full applications or Outline/ Reserved Matters applications for Appearance are to complete this table to demonstrate how they have responded to the issues in Policy CP2 listed in bold below. Links o suggested compliance routes are provided:
 - a. **Minimisation of waste and maximising of recycling of any waste generated during construction and in operation:** Production of a Site Waste Management

Plan (SWMP) in line with WRAP guidance¹⁷ can enable the best use to be made of waste materials produced during construction. The Home Quality Mark¹⁸ provides useful criteria for designing waste and recycling facilities for domestic properties, the BREEAM criteria for waste can inform non-domestic projects.

- b. **Efficiency in materials use, including the type, life cycle and source of materials to be used:** A review of how the environmental impact of materials is assessed is provided by the UK Green Building Council. For the impact of particular materials, please see the Building Research Establishment's (BRE) Green Guide to Specification¹⁹. For example, applicants could commit to using only materials rated "A" or "B" on the Green Guide.
- c. **Flexibility and adaptability, allowing future modification of use or layout, facilitating future refurbishment and retrofitting:** The principles of Lifetime Homes²⁰ can be followed, enabling buildings to adapt to be suitable for occupants at all life stages and be adaptable for future uses.
- d. **Consideration of climate change adaptation:** A review of measures to adapt to the changing climate is provided in the Technology Strategy Board's document "Designing for Future Climate"²¹.

SECTION 7: NON COMPLIANCE

1. We expect development to be able to comply with the requirements above. The Council has undertaken extensive study which shows that the requirements are achievable within viability constraints in the district so it is unlikely that non-compliance on the grounds of viability or technical feasibility will be accepted.
2. If non-compliance with any of the Sustainability requirements above is proposed, a full open-book viability test or technical rationale will be required. The applicant will be expected to pay the cost for an independent review to determine the validity of the review. Please complete Table 7 in this case.
3. In the case of proposed non-compliance, the Checklist is to be completed in full clearly stating which sections are non-compliant.

¹⁷ <http://www.wrap.org.uk/sites/files/wrap/WMM%20guide%20Mid%20level.pdf>

¹⁸ <https://www.homequalitymark.com/standard>

¹⁹ <https://www.bre.co.uk/greenguide/podpage.jsp?id=2126>

²⁰ <http://www.lifetimehomes.org.uk/>


²¹ http://www.arcc-network.org.uk/wp-content/D4FC/01_Design-for-Future-Climate-Bill-Gething-report.pdf

APPENDIX: DOCUMENTATION EXAMPLES

1. Part L output documents:

Where Part L documents are required the TER and BER/DER should be clearly displayed on the output documents as illustrated below. Below is an excerpt from a Part L document with the TER and BER/DER circled, making it straightforward to calculate whether the DER has achieved the percentage reduction required.

a. SAP summary for dwellings

L1A 2013 - Regulations Compliance Report			
Design - Final			
This design final submission provides evidence towards compliance with Part L of the Building Regulations, in accordance with Appendix C of AD L1A. It has been carried out by an On-Construction Domestic Energy Assessor and can be accepted for Building Control purposes without further checking. It has been prepared from plans and specifications and may not reflect the 'as built' property. This report covers only items included within the SAP and is not a complete report of regulations compliance.			
Assessor name	XXX XXX	Assessor number	1
Client	XXX XXX	Last modified	XX/XX/XXXX
Address	XXX XXX		
Check	Evidence	Produced by	OK?
Criterion 1: predicted carbon dioxide emission from proposed dwelling does not exceed the target			
TER (kg CO ₂ /m ² .a)	Fuel = N/A Fuel factor = 1.00 TER = 17.46	Authorised SAP Assessor	
DER for dwelling as designed (kg CO ₂ /m ² .a)	DER = 14.14	Authorised SAP Assessor	
Are emissions from dwelling as designed less than or equal to the target?	DER 14.14 < TER 17.46	Authorised SAP Assessor	Passed
Is the fabric energy efficiency of the dwelling as designed less than or equal to the target?	DFEE 53.8 < TFEF 55.9	Authorised SAP Assessor	Passed

Calculating Compliance

To comply with CP2 for new build, the DER figure above (14.14) must be 19% lower than the TER figure (17.46) e.g.

$$17.46 - 14.14 = 3.32$$

$$3.32 / 17.46 \times 100 = 19.01$$

$$= 19.01 \%$$

So this example demonstrates compliance with CP2.

b. BRUKL summary for non-residential

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

Project name

As designed

Date:

Administrative information

<p>Building Details Address: London,</p> <p>Certification tool 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</p>	<p>Owner Details Name: Lend Lease Telephone number: Address:</p> <p>Certifier details Name: Telephone number: Address:</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Criterion 1: The calculated CO₂ emission rate for the building should not exceed the target

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	24
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	24
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .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

Calculating Compliance

To comply with CP2 for new build, the BER figure above (19.4) must be 19% lower than the TER figure (24) e.g.

$$24 - 19.4 = 4.6$$

$$4.6 / 24 \times 100 = 19.16$$

$$= 19.16 \%$$

So this example demonstrates compliance with CP2.

2. Microgeneration Certificate Scheme (MCS) Certificates

An MCS Certificate is produced by the renewable energy installer stating that the equipment is live and connected (example below). It normally acts as the sign off from the installer, indicating they are happy their work is complete (other than

snagging). It has the necessary detail to verify the information provided in Energy Table 2.



The image shows a sample MCS Installation Certificate. At the top center is the MCS logo, which consists of a stylized blue heart shape with the letters 'MCS' inside. Below the logo, the certificate number 'MCS Installation Certificate No. MCS-12345678-U' is displayed in a rounded rectangular box. Underneath the certificate number, it says 'Version 1' and the date and time 'Thursday, 12 December 2013 16:00:57'. The certificate is divided into several sections: 'INSTALLER DETAILS', 'SITE DETAILS', 'GENERATION METER DETAILS', 'INSTALLATION DETAILS', and 'PRODUCT DETAILS'. Each section contains specific information related to the solar PV installation. The background of the certificate is a light blue sky with white clouds.

MCS

MCS Installation Certificate No. MCS-12345678-U

Version 1

Thursday, 12 December 2013 16:00:57

INSTALLER DETAILS

MCS Certificated Installation Company Name and MCS number:

Name of Installation Company 1234

SITE DETAILS

Address: 1 The Street
My Town
MP11 1AA

Supply MPAN: 12341234123412

GENERATION METER DETAILS

Generation Meter Make(s):

Make Name

Generation Meter Model(s):

Model Name

Generation Meter Serial Number(s) (MSN):

12345678

Generation Meter Reading(s):

0.0

(at commissioning date)

INSTALLATION DETAILS

Commissioning Date: 12/12/2013

Total Installed Capacity (kW): 4.00

Declared Net Capacity (kW): 4.00

Estimated Annual Generation (kWh): 3500.00

Green Deal Installation: No

Installation Type: Non-Standalone

Planning Regulations Compliance:

Permitted Development Rights (PDR)

Building Regulations Notification:

After the installation through a self certification
Competent Persons Scheme (CPS)

PRODUCT DETAILS

Technology Type:

SOLAR PHOTOVOLTAIC

MCS Certificated Product Name:

FV Panel Product Name

MCS Certificated Product Manufacturer:

Manufacturer Name

MCS Certificated Product Number:

Product Number

PART 2: THE CHECKLIST

SECTION 1: THE PROPOSAL

TABLE 1.1: THE PROPOSAL	
Required for: All applications within the scope of the Checklist	
Name of Proposal	
Brief description e.g. residential, commercial, and size	<i>[Insert text here]</i>
Type of application e.g. Pre-Application, Outline, Full, Reserved Matters (noting Matters Reserved)	<i>[Insert text here]</i>
Tick if the application is a Reserved Matters application for Access	<input type="checkbox"/> Tick here – no further information required

DRAFT

SECTION 2: ENERGY

TABLE 2.1 SUMMARY OF REQUIREMENTS FOR ENERGY TRACKS				
Required for:				
1. Full applications or outline applications				
2. To discharge the condition prior to occupation				
Track	Development Type: Please tick to indicate which development type/s your proposal contains	Please tick the boxes below to indicate that the required documentation has been attached		
		Outline or reserved matters applications if not applying for Appearance	Full applications Outline or reserved matters applications applying for Appearance	Prior to occupation in order to comply with conditions
Track 1	<input type="checkbox"/> Major new build residential development <input type="checkbox"/> Major new build non-residential development	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy <input type="checkbox"/> Table/s 2.3 <input type="checkbox"/> Part L design stage document/s for energy efficiency measures <input type="checkbox"/> Part L design stage document/s for energy efficiency and renewable energy measures	<input type="checkbox"/> Table/s 2.3 <input type="checkbox"/> Table 2.4 <input type="checkbox"/> Part L post-completion document/s for renewables <input type="checkbox"/> Part L post completion document/s for energy efficiency <input type="checkbox"/> MCS Certificate/s
Track 2	<input type="checkbox"/> Minor new build residential development <input type="checkbox"/> Minor new build non-residential development	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy <input type="checkbox"/> Table/s 2.5 <input type="checkbox"/> Part L design stage document/s	<input type="checkbox"/> Table/s 2.5 <input type="checkbox"/> Part L post completion document/s
Track 3	<input type="checkbox"/> Major or medium works to existing buildings	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy <input type="checkbox"/> Table/s 2.5 <input type="checkbox"/> Part L design stage document/s	<input type="checkbox"/> Table/s 2.5 <input type="checkbox"/> Part L post completion document/s
Track 4	<input type="checkbox"/> Passivhaus	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy	<input type="checkbox"/> Table 2.2: Summary of Energy Strategy <input type="checkbox"/> Statement from Passivhaus professional and Summary of outputs from design stage PHPP <input type="checkbox"/> Table/s 2.5 <input type="checkbox"/> Part L design stage document/s	<input type="checkbox"/> Table/s 2.5 <input type="checkbox"/> Part L post completion document/s <input type="checkbox"/> Passivhaus certification
Exempt	<input type="checkbox"/> Industrial B2 or B8 uses			

TABLE 2.2: SUMMARY OF ENERGY STRATEGY

All required sections are to be completed in 500 words or less per section. A summary is to be provided, stating the approach, not simply a reference to other documents, although additional detail should be signposted via references to specific, named documents. See Section 2 of the Guidance above for details.

1 & 2 below required for all applications, inc. outline applications where appearance is Reserved

1. Passive design e.g. building form, orientation and shading, including orientation of roofs to maximise solar energy potential. Please note - this is an important consideration for Layout, so applications covering Layout should provide a full explanation of the approach.

[Insert text here]

2. Renewable and low carbon energy approach e.g. solar energy, biomass, heat pumps, solar thermal, heat networks and Combined Heat & Power (CHP). Please cite where drawings of renewable/low carbon technology are included in the application.

[Insert text here]

3- 7 below required for Full or Reserved Matters applications for Appearance

3. Energy efficiency measures e.g. materials with high energy performance (lower U values than required by Part L), minimisation of thermal bridging, more insulation, low energy fixtures, heat recovery e.g. Mechanical Ventilation with Heat Recovery (MVHR) and appliances.

[Insert text here]

4. Heating and hot water strategy e.g. air source heat pumps, responsive heating controls, underfloor heating.

[Insert text here]

5. Smart infrastructure e.g. smart meters and appliances, energy storage, electric vehicle charging (please reference transport policies), building management systems.

[Insert text here]

6. Ventilation and Indoor Air Quality Strategy e.g. airtightness, natural or mechanical ventilation, windows, use of natural or low Volatile Organic Compound (VOC) materials. Where wood burners are to be used, please comment on the mitigation of impacts on external air quality. Please note how the building will be ventilated in winter if a high airtightness is proposed.

[Insert text here]

7. Performance Gap during and after construction: Note (1) construction management practices to ensure buildings are constructed to meet the target performance levels and (2) aftercare and post-occupation measures to ensure that systems are commissioned correctly and occupants know how to optimise energy performance, e.g. Soft Landings or seasonal commissioning of plant.

[Insert text here]

TABLE 2.3: CALCULATIONS FOR TRACK 1**Required for:**

1. Full applications or outline/ reserved matters applications for Appearance
2. To discharge the condition prior to occupation

For multiple building proposals, please state which building this is an assessment for; the reason for selecting this building as an example of building type, and a reference to where the building can be found on the drawings.

[Insert text here]

For multiple building developments, please highlight Yes or No to indicate whether the proposal as a whole will comply with Energy Track 1 and note how; e.g. if some buildings will have lower energy performance and be offset by others with higher performance.

Yes/No

[Insert text here]

A	Baseline emissions	kg CO ₂ /m ²
B	Emissions after Energy Efficiency and Low Carbon measures (baseline for SCR1 compliance)	kg CO ₂ /m ²
C	% CO ₂ reduction from Energy Efficiency measures only (A-B)/A*100	%
D	Emissions after Renewables are added to the Energy Efficiency Measures	kg CO ₂ /m ²
E	Further % CO ₂ reduction from Renewables only. At least 10% to comply with SCR1 (B-D)/B*100	%
F	CO ₂ savings from all measures- Renewable and Energy Efficiency	kg CO ₂ /m ²
G	% CO ₂ reduction from all measures. At least 19% to comply with CP2 (A -F)/A*100	%

Please tick to confirm that the two sets of design stage or post-completion SAP/SBEM summary documents are attached. This is required for registration of the application:

1. The reduction in CO₂ from energy efficiency measures only (C)
2. The overall reduction once renewables are added (G)

Company name of independent assessor conducting the assessment: [Insert text here]

TABLE 2.4: RENEWABLE TECHNOLOGIES FOR TRACK 1**Required for:** Submission post-completion, to discharge the planning condition

Technology type (e.g. PV, solar thermal, biomass)	Description	Capacity from this technology (kW)	Estimated annual generation (kWh)	Total CO ₂ saving from this technology (kg CO ₂ /m ²)
Sample: Solar PV	<i>28m² of 345W PV panels, 16% efficiency</i>	<i>3kWp</i>	<i>2550 kWh</i>	<i>1045</i>
<i>[add lines as needed]</i>				
TOTAL				
<input type="checkbox"/> Please tick to confirm that the MCS Certificate is attached showing that the renewable technologies cited in this table have been installed and are operational (for installations of up to 50kW). <u>This is required for discharge of the condition.</u>				

TABLE 2.5: CALCULATIONS FOR TRACKS 2, 3 AND 4**Required for:**

1. Full applications or outline/ reserved matters applications for Appearance
2. To discharge the condition prior to occupation

For multiple building proposals, please state which building this is an assessment for; the reason for selecting this building as an example of building type, and a reference to where the building can be found on the drawings.	<i>[Insert text here]</i>	
For multiple building developments, please highlight Yes or No to indicate whether the proposal as a whole will comply with Energy Track 1 and note how; e.g. if some buildings will have lower energy performance and be offset by others with higher performance.	Yes/No <i>[Insert text here]</i>	
A	Baseline emissions	kg CO ₂ /m ²
B	Emissions after All Measures (Renewables plus Energy Efficiency Measures)	kg CO ₂ /m ²
C	Track 2 and 4: % CO ₂ reduction from all measures should be at least 19% (A-B)/A*100	%
	Track 3: % CO ₂ reduction from all measures, should be at least 10% (A-B)/A*100	%
<input type="checkbox"/> Please tick to confirm that design stage or post-completion SAP/SBEM summary documents are attached. <u>This is required for registration of the application</u>		
Company name of independent assessor conducting the assessment: <i>[Insert text here]</i>		

SECTION 3: DISTRICT HEATING

TABLE 3: DISTRICT HEATING			
<p>Required for: Full applications or outline/ reserved matters applications for Appearance within a Heat Network Priority Area or Heat Network Opportunity Area. Pre-applications should respond to questions 1 - 5. See Section 3 of the Guidance for details and the separate “Heat Networks Guidance Note”</p>			
1	Is the proposal in a Heat Network Priority Area?	Yes	No
2	Is the proposal in a Heat Network Opportunity Area?	Yes	No
<p>If “Yes” to Question 1 (Priority Area), at least one of Questions 3-5 must also be a “Yes”</p> <p>If “Yes” to Question 2 (Opportunity Area), please complete the table. If Questions 3-5 are “No” please explain further in Question 13.</p>			
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 ² of non-residential floor space – in particular with hotels, hospitals, leisure centres or student residences), has an open-book viability assessment for district heating been carried out and full report attached? This is required for policy compliance.	Yes	No
8	<p>If a heat network or connection to a heat network is proposed, has a document providing further details been attached? Please reference below.</p> <p>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 the controls which will ensure the mix of energy sources used post occupation will be in compliance with policies CP2 and SCR1.</p>	Yes	No
<p><i>[Insert text here]</i></p>			

Future Proofing			
9	Single heat source: 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	Protected Pipe Routes: (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. <i>[Insert text here]</i>	Yes	No
11	Plant room location: 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. <i>[Insert text here]</i>	Yes	No
12	Plant room design: 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 the calculations for space allocated, and reference the document and page number showing where this is included in drawings. <i>[Insert text here]</i>	Yes	No
13	Please add any further information <i>[Insert text here]</i>		

SECTION 4: WATER

TABLE 4: WATER	
<p>Required for: 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 should provide a summary of the approach in the box below. See Section 4 of the Guidance for details.</p>	
<p>Outline below the approach to water efficiency e.g. greywater or rainwater harvesting, low-flow rate sanitary ware and white goods</p>	
<p><i>[Insert text here]</i></p>	
Confirming compliance and documentation required	
<p><input type="checkbox"/> Major residential development: 10+ dwellings.</p> <p>All three boxes opposite should be ticked.</p>	<p><input type="checkbox"/> The 110 litres per person per day standard will be met</p> <p><input type="checkbox"/> Rainwater harvesting or other methods of capturing rainwater for use by the residents (e.g. water butts) has been included</p> <p><input type="checkbox"/> The output from an accredited Part G water calculator has been attached, demonstrating the results and measures used.</p>
<p><input type="checkbox"/> Non- major residential development</p> <p>Both boxes should be ticked.</p>	<p><input type="checkbox"/> The 110 litres per person per day standard will be met</p> <p><input type="checkbox"/> Rainwater harvesting or other methods of capturing rainwater for use by the residents (e.g. water butts) has been included as required by the policy</p>

SECTION 5: OVERHEATING

TABLE 5.1: OVERHEATING MITIGATION STRATEGY	
Required for: Full applications or outline/ reserved matters applications that address appearance, and suggested for pre-applications within this scope. See Section 5 of the Guidance for details.	
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.	
Minimising internal heat generation through energy efficient design: 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>	
Reducing the amount of heat entering the building in summer: For example, through use of carefully designed shading measures, including balconies, louvres, internal or external blinds, shutters, trees and vegetation.	
<i>[Insert text here]</i>	
Use of thermal mass and high ceilings to manage the heat within the building: Increasing the amount of 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>	
Passive ventilation: For example, through the use of openable windows, cross-ventilation, dual aspect units, designing in the 'stack effect'	
<i>[Insert text here]</i>	
Mechanical ventilation: 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. This will require a by-pass on the heat recovery system for summer mode operation.	
<i>[Insert text here]</i>	

TABLE 5.2: OVERHEATING IN RESIDENTIAL DEVELOPMENT – CIBSE TM59

Required For: Full applications or outline/ reserved matters applications for Appearance for large scale residential proposals, in order to discharge the condition. The proposal should achieve a “pass” in the current climate scenario to comply with CP2 and set out an overheating future proofing scenario in Table 5.4

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 comply, 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 – Not to exceed “B”	D. Annual Night time occupied hours	E. Max. no. hours exceedance (1% occupied hours)	F. Calculated no. hours exceeding Comfort Range – Not to exceed “E”	
<i>Example: Bedroom 1</i>	3,672	110	90	3285	32	25	Pass X
<i>Example: Living room</i>	1,989	59	40	n/a	n/a	n/a	Pass X

CURRENT CLIMATE - CIBSE DSY1. Results expressed in hours

							Pass <input type="checkbox"/>
<i>[Add rows as needed]</i>							Pass <input type="checkbox"/>

FUTURE CLIMATE: Results expressed in hours

							Pass <input type="checkbox"/>
<i>Add rows as needed]</i>							

Please tick to confirm

- Two CIBSE TM59 assessments have been completed
 1. Present climate
 2. Future climate
- Tick here to verify that the cover sheet for both assessments have been attached, summarising overheating performance

TABLE 5.3: OVERHEATING IN NON-RESIDENTIAL DEVELOPMENT – CIBSE TM52

Required For: Full applications or outline/ reserved matters applications for Appearance for large scale non-residential proposals, in order to discharge the condition. The proposal should achieve a “pass” in the current climate scenario to comply with CP2.

Building for which the assessment has been carried out (more than one table may be required):

[Insert text here]

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 comply, 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 - Not to exceed “B”	D. Calculated peak daily weighted exceedance – to be under 6 hours	E. Calculated no. hours exceeding absolute limit – to be zero hours	

CURRENT CLIMATE (CIBSE DSY1): Results expressed in hours

							Pass <input type="checkbox"/>
<i>[Add rows as needed]</i>							Pass <input type="checkbox"/>

FUTURE CLIMATE: Results expressed in hours

<i>[Add rows as needed]</i>							Pass <input type="checkbox"/>
							Pass <input type="checkbox"/>

Please tick to confirm

2 CIBSE TM52 assessments have been completed

1. Present climate
2. Future climate

Tick here to verify that the cover sheet for both assessments have been attached, summarising overheating performance

TABLE 5.4: CIBSE MODELLING NOTES

Required For: Full applications or outline/ reserved matters applications for Appearance for large scale residential or non-residential proposals, in order to discharge the condition

For accommodation with vulnerable occupants such as babies, elderly or disabled people have Type 1 occupancy parameters (as per CIBSE TM52) been used?	Yes	No
Has a full written report for TM52 or TM59 been produced in line with the CIBSE methodology?	Yes	No
Please note which buildings were selected to model compliance and why:		
<i>[Insert text here]</i>		
Please note which part/s of the building/s were selected to model compliance and why:		
<i>[Insert text here]</i>		
Please note modelling including the datasets, locations, software used and emissions scenario:		
<i>[Insert text here]</i>		
Company name of independent assessor conducting the assessment:		
<i>[Insert text here]</i>		

TABLE 5.5: ACTIVE COOLING

Required For: Full applications or outline/ reserved matters applications for Appearance for large scale residential or non-residential proposals, in order to discharge the condition.

Please describe below why active cooling would result in lower CO2 emissions whilst meeting the CIBSE TM52 requirement than passive cooling, and outline the active cooling strategy. Include the type of plant and efficiencies, and whether free or renewable cooling sources such as ground or river water cooling have been used.

<i>[Insert text here]</i>	
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):	<i>[Insert text here]</i>
Notional:	<i>[Insert text here]</i>

Please tick to confirm

Part L output section containing the “HVAC Systems Performance” table is attached

TABLE 5.6: FUTURE PROOFING

Required For: Full applications or outline/ reserved matters applications for Appearance for large scale residential or non-residential proposals for which the current design does not achieve compliance with the CIBSE standard in the 2050 climate, in order to discharge the condition.

Please describe the measures that could be applied in the future to enable the building to address overheating in the future climate and how the existing design has facilitated the implementation of these measures, with an emphasis on low or zero carbon measures.

[Insert text here]

SECTION 6: SUSTAINABLE CONSTRUCTION

TABLE 6: SUSTAINABLE CONSTRUCTION

Required For: Full applications or outline/ reserved matters applications within this scope. See Section 6 of the Guidance for resources. All sections are to be completed giving a summary of the response to the issue and cross-referencing where further detail can be found, in 500 words or less per section.

Minimisation of waste and maximising of recycling of any waste generated during construction and in operation:

[Insert text here]

Efficiency in materials use, including the type, life cycle and source of materials to be used:

[Insert text here]

Flexibility and adaptability, allowing future modification of use or layout, facilitating future refurbishment and retrofitting:

[Insert text here]

Climate change adaptation other than overheating e.g. heavy rain, flooding, landslide. Measures might include slope stabilisation, Sustainable Urban Drainage Systems (SUDS), oversized gutters:

[Insert text here]

Please note any sustainability standards to be sought e.g. BREEAM, Home Quality Mark, or other energy targets

[Insert text here]

SECTION 7: NON-COMPLIANCE

TABLE 7: NON-COMPLIANCE

We expect development to be able to comply with the requirements above. If non-compliance with any of the Sustainability requirements above 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.

In the case of proposed non-compliance, the Checklist is still to be completed in full, making it clear which sections are non-complaint.

Please tick here if non-compliance with any of the policies above is proposed

Please summarise below the policies for which non-compliance is proposed and summarise the rationale for non-compliance, and reference the background reports.

[Insert text here]

- Viability: An open-book viability test is attached
- Technical feasibility: An open-book technical rationale is attached
- I confirm my understanding that the Council is likely to require an independent assessment to be undertaken at the applicant's cost