08

Responding to the Climate Emergency

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Chapter

Responding to the climate emergency

8.1 The Climate Change Act 2008 (as amended) sets a legally binding target for the UK to bring all greenhouse gas emissions to net zero by 2050.

8.2 The Council declared a Climate and Ecological Emergency in 2019, recognising not only the threat of climate change but also the impact of irreversible damage to ecosystems, and set out its ambition to do everything it can to make Camden net zero by 2030. This means we need to reduce all the carbon dioxide emissions associated with fuel consumption within the boundary of the borough to zero by 2030.

8.3 The Council's Climate Action Plan sets out a number of actions to help achieve this. This will also be supported by the Council's Local Area Energy Planning (LAEP) work which is considering the impact and implications of the following key project areas for Camden:

- fabric efficiency including the retrofitting of existing buildings;
- heat networks;
- heat electrification including heat pumps;
- renewables including solar photovoltaics (PV); and
- electric vehicle charging.

8.4 We Make Camden, the Council's Corporate Strategy, emphasises the need to adapt to meet the climate challenge that faces us, address the causes of the climate emergency and work towards becoming net zero, while ensuring that we are supporting and protecting members of our communities from the impacts of climate change.

8.5 The Local Plan is a key mechanism for addressing the climate and ecological emergency and delivering the actions identified in the Council's Climate Action Plan and We Make Camden. Furthermore, the National Planning Policy Framework (NPPF) requires Local Plans to take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, water supply, biodiversity and landscapes and the risk of overheating and drought from rising temperatures.

8.6 Policy CC1 sets out the Council's overarching strategy for addressing climate change, to ensure that new development is designed to mitigate and adapt to climate change to respond to the climate emergency.

Policy CC1

Responding to the climate emergency

A. The Council will expect development to prioritise the provision of measures to mitigate and adapt to climate change. Development should meet the highest feasible environmental standards during construction and occupation and respond to the climate emergency by:

1. prioritising and enabling the repurposing and re-use of existing buildings over demolition;
2. minimising waste and whole life carbon, and increasing the re-use of resources;
3. supporting the retrofitting of existing buildings to make them more energy efficient and reduce the energy needed to occupy the building;
4. ensuring that new buildings are designed and constructed to be net zero carbon in operation;
5. utilising low carbon technologies and maximising opportunities for renewable energy generation and heat networks;
6. being designed to be resilient to climate change by minimising the risk of overheating, improving water efficiency, and minimising and avoiding the risk of flooding from all sources;
7. protecting and enhancing existing green spaces and water sources, enhancing biodiversity, strengthening nature recovery and providing multi-functional green infrastructure;
8. mitigating and improving poor air quality in the borough; and
9. prioritising sustainable transport.

B. The Council will expect developers to demonstrate how sustainable development principles have been incorporated in the design and proposed implementation of their scheme. For developments creating one or more additional homes or delivering 500 sqm or more of additional or re-provided floorspace a Sustainability Statement will be required.

8.7 This policy sets out the Council's overarching approach to responding to the climate emergency and should be read in conjunction with the other policies in this Chapter, in addition to other relevant policies in the Plan, including but not limited to, Policy D1 (Achieving Design Excellence); D4 (Extensions and Alterations); D5 (Historic Environment); D6 (Basements); IE2 (Offices); SC4 (Open Space); NE1 (The Natural Environment); NE2 (Biodiversity); NE3 (Tree Planting and Protection); NE4 (Water Quality); T1 (Safe, Healthy and Sustainable Transport); T2 (Prioritising Walking, Wheeling, and Cycling); T4 (Shared Transport Infrastructure and Services); T6 (Sustainable Movement of Goods, Services, and Materials); and A3 (Air Quality), which provide more detailed policy and guidance.

8.8 Developers will be expected to provide evidence to the Council to demonstrate that they have considered sustainable development principles from the start of the design process. For schemes involving the addition of one or more homes (from new and existing buildings) and proposals involving 500 sqm or more of additional or re-provided floorspace a Sustainability Statement will be required. This should cover:

- reducing waste and circular economy principles;
- energy efficiency;
- overheating and cooling;
- green infrastructure (for example, inclusion of a green roof, green sustainable drainage features);
- water efficiency; and
- BREEAM assessment (where relevant).

8.9 Further guidance on Sustainability Statements is set out in Camden Planning Guidance and developers will be expected to have due regard to this.

8.10 For all other schemes this evidence should be provided as part of the Design and Access Statement (unless agreed with the Council that it is not relevant for the development proposal). Further information on Design and Access Statements is provided in the supporting text to Policy D1 (Achieving Design Excellence) and in Camden Planning Guidance on Design. Developers will be expected to have due regard to this.

Prioritising the retention of existing buildings

8.11 Retaining, re-purposing, refurbishing and extending existing buildings should always be seen as the starting point when considering development options for a site, as this will usually be the most sustainable option and make an immediate contribution to the Council's objective of being net zero carbon by 2030.

8.12 Policy CC2 seeks to prioritise the retention of existing buildings over demolition, recognising the benefits of re-using materials in terms of:

- limiting the carbon emissions associated with the extraction of raw materials;
- reducing the impact associated with demolition and construction on the local community; and
- speeding up the delivery of new homes and jobs, through reduced construction times.

Policy CC2

Prioritising the retention of existing buildings

A. The Council will expect developers to prioritise the retention and improvement of existing buildings over demolition.

B. Developers considering the substantial demolition of existing buildings will be expected to undertake the following assessments, before progressing detailed proposals for submission:

1. a condition and feasibility assessment, which should be undertaken at the earliest opportunity; and
2. development options appraisal, which should use the findings of the condition and feasibility assessment to explore feasible development options for the site. The options appraisal should provide justification as to why the preferred option has been selected and why other options that could retain more of the existing building/s have been discounted.

C. The Council will only permit proposals which include substantial demolition where it can be demonstrated to the Council's satisfaction that:

1. there are significant structural issues with the existing building that would prevent it from being retained and improved;
2. the developer has comprehensively explored a range of feasible alternative development options, informed by the condition and feasibility assessment, prior to considering substantial demolition, and it has been demonstrated to the Council's satisfaction that the existing building cannot be retained or improved;
3. the proposal constitutes the best use of the site (informed by the condition and feasibility assessment and the development options appraisal), and optimises site capacity.

D. Where less than substantial demolition is proposed, developers will be expected to demonstrate to the Council's satisfaction that the proportion of the building being demolished has been reduced as far as possible, in accordance with the waste hierarchy and circular economy principles set out in Policy CC3 (Circular Economy and Reduction of Waste).

E. Where it is demonstrated to the Council's satisfaction that the demolition of all or part of an existing building is justified, the developer will be required to submit a pre-demolition audit and demonstrate that circular economy principles have been applied in accordance with Policy CC3 (Circular Economy and Reduction of Waste).

Condition and feasibility assessment

8.13 Developers considering substantial demolition, where 50% or more of the building's floorspace would be removed, will be expected to undertake a condition and feasibility assessment. This assessment should be carried out at the earliest opportunity to understand the reuse potential of the existing building before progressing a proposal for submission to the Council.

8.14 The condition and feasibility assessment should include:

- a review of how the building is (or has been) used and functions;
- servicing information; and
- a technical building survey.

8.15 Where the condition and feasibility assessment shows that there may be significant structural issues present, which mean the retention of the existing building is not feasible, this would need to be evidenced by a structural engineer's report.
In some instances the Council will require independent verification of the structural engineer's report. The Council will expect any independent review to be paid for by the developer.

Development options appraisal

8.16 Developers will be expected to use the findings of the condition and feasibility assessment to inform the consideration of development options for the site. Developers will be required to demonstrate that the options of retention and retrofit; substantial refurbishment and extension; reclaim and recycle as set out in the GLA's Circular Economy Statement Guidance entitled 'CE design approaches for existing structures' have been fully explored. This will require the submission of appropriate detailed drawings. As part of the consideration of development options, developers should also explore whether the building could be re-used for alternative uses, where it is demonstrated that the established use is no longer suitable and/or viable, and the alternative use is compliant with other Local Plan policies.

8.17 All development options should seek to optimise resource efficiency by: reducing waste; minimising materials required; and using materials with low embodied carbon content. Development options should seek to retain as much of the existing building as possible, reducing the need to use new materials and reduce the loss of embodied carbon in the existing structure.

8.18 The options appraisal should provide justification as to why the preferred option has been selected and other options, which could retain more of the existing building have been discounted.

8.19 As part of the development options appraisal a review of site capacity should be undertaken in accordance with London Plan Policy D3 (Optimising Site Capacity through the Design Led Approach). There may be situations where the current layout and design of a building precludes its optimisation in terms of providing a significant uplift in non-residential floorspace and new homes. London Plan Policy D3 (Optimising site capacity through a design led approach) states "Optimising site capacity means ensuring that development is of the most appropriate form and land use for the site. The design-led approach requires consideration of design options to determine the most appropriate form of development that responds to a site's context and capacity for growth".

8.20 Developers should discuss the findings of the condition and feasibility assessment and the consideration of development options with the Council at the earliest opportunity, using Development Management's pre-application advice service, before progressing a proposal for submission.

8.21 A Whole Life Cycle Carbon assessment will be required if the principle of demolition is accepted in accordance with Policy CC4 (Minimising Carbon Emissions). We acknowledge that developers may use Whole Life Cycle Carbon assessment in considering development options; however, this will not be accepted as a means to justify whether the principle of demolition is acceptable.

8.22 Where the case for demolition has not been justified to the Council's satisfaction, we will ask for an independent assessment of the condition and feasibility assessment and options appraisal to be carried out by a Structural Engineer and/or Sustainability Consultant. This will be used to establish whether the detail provided in the Condition and Feasibility Assessment is sufficient and whether the Options Appraisal has adequately assessed the most appropriate or feasible development options and whether the preferred development option is justified. The Council will expect this independent review to be paid for by the developer.

Best use of the site

8.23 In considering proposals which include substantial demolition the Council will take into account whether the development constitutes the best use of the site, informed by the condition and feasibility assessment and the development options appraisal.

8.24 When assessing whether the proposal constitutes the best use of the site the Council will consider:

- the contribution the proposal makes to the delivery of the Plans overarching vision and objectives set out in Chapter 1;
- design and layout;
- the contribution the proposal makes to overall housing delivery in Camden, and in particular affordable housing delivery;
- public benefit, including but not limited to, the delivery of social and community infrastructure, open space, active travel measures, affordable workspace, a significant uplift in jobs and estate regeneration;
- whether the proposal optimises site capacity; and
- the contribution the proposal makes to the local environment.

8.25 Where substantial demolition is proposed, developers will be expected to demonstrate that the benefits associated with the proposal are substantially greater than those that could be realised through a retention scheme.

Where demolition is accepted

8.26 Development proposals that involve less than substantial or substantial demolition must include a pre-demolition audit to identify all materials within the building and document how they will be managed in line with the waste hierarchy. This should demonstrate that the re-use of materials has been fully explored on site and that circular economy principles have been applied in accordance with Policy CC3 (Circular Economy and Reduction of Waste). A post-completion demolition and waste audit will also be requested to ensure the plan for managing materials has been implemented.

8.27 Planning applications for schemes involving substantial demolition will need to include a Whole Life Cycle Carbon emissions assessment in accordance with Policy CC4 (Minimising Carbon Emissions). Planning applications for major development involving substantial demolition will also need to submit a Circular Economy Statement in accordance with Policy CC3 (Circular Economy and Reduction of Waste).

Circular economy and reduction of waste

8.28 As the largest consumer of materials in the economy, and a significant generator of waste, air pollution and carbon emissions, the built environment sector must take the lead in supporting the shift towards a 'circular economy'.

8.29 The London Plan defines a circular economy as one where materials are retained in use at their highest value (original form) for as long as possible and are then re-used or recycled, leaving a minimum of residual waste. London needs to move to a more circular economy in order to save resources, increase the resource efficiency of businesses, and help to reduce carbon emissions.

8.30 The Council worked with the other North London boroughs of Barnet, Enfield, Hackney, Haringey, Islington and Waltham Forest to jointly prepare the North London Waste Plan. This was adopted in 2022 and forms part of the development plan for each of the boroughs. The Plan identifies suitable land to accommodate waste management facilities of the right type, in the right place and at the right time up to manage waste generated in North London. It sets out policies against which planning applications for waste development will be assessed, alongside other relevant planning policies and guidance, and safeguards existing waste sites, including the Regis Road Reuse and Recycling Centre in Kentish Town.

8.31 Policy CC3 seeks to ensure that development in Camden shifts towards a circular economy approach, which reduces waste and uses resources more efficiently.

Policy CC3

Circular economy and reduction of waste

A. The Council will seek to ensure that developments minimise waste, use resources efficiently, and are designed to facilitate easy maintenance, adaptability of use and deconstruction for future re-use.

B. Development will be expected to:

1. reduce waste through the application of the waste hierarchy (Prevention, Prepare for reuse, Recycling, Other recovery, Disposal);
2. minimise the amount of materials used;
3. use materials with a low embodied carbon content;
4. ensure any dismantled materials are sorted and utilised on-site wherever practicable; and
5. reduce water use during demolition and construction, whilst effectively mitigating air quality impacts.

C. The Council will require applications for new build major development and major development which involves substantial demolition and rebuild to submit a Circular Economy Statement.

D. Where a Circular Economy Statement is required (as set out in (C) above), developers will be encouraged to explore opportunities to use the site, or other local sites, for the temporary storage of reusable materials, during the construction phase to enable other developments in the locality to use those materials.

E. The Council will continue to safeguard Camden's existing waste site at Regis Road in accordance with the North London Waste Plan.

Reducing waste and minimising the use of materials

8.32 Policy CC3 expects developments to reduce waste in accordance with the waste hierarchy. The waste hierarchy ranks waste management options according to what is best for the environment, with preventing waste generation sitting at the top of the waste hierarchy, and disposal at the bottom (see Figure 19).

8.33 The London Plan 2021 sets the following targets for re-use and recycling rates for construction, demolition and excavation waste:

- Construction and demolition - 95% reuse/ recycling/recovery;
- Excavation - 95% beneficial use.

8.34 Furthermore, the North London Waste Plan 2022 notes that "beneficial use could include using excavated material within the development, or in habitat creation, flood defences or landfill restoration" and that "preference should be given to using the materials on-site or within local projects".

8.35 Where a Circular Economy Statement is required (see Part C of Policy CC3), developers will be expected to provide evidence to the Council, to demonstrate compliance with the targets set out at paragraph 8.33 above.

8.36 As part of measures to reduce waste, Policy CC3 also expects developments to reduce water use during the demolition and construction phase. The construction phase of development can use a large amount of water, contributing to water wastage, and while water is an important part of dust suppression and site cleaning, there are measures that can be taken to reduce the amount of water used. Sites should therefore look to eliminate water waste, as much as possible, and improve the efficiency of any processes involving water use. Where a Construction Management Plan is required, this matter can be addressed in the Environment sub-section of the report.

8.37 London Plan Policy SI7 (Reducing Waste and Supporting the Circular Economy) recognises the need for the Mayor, Waste Planning Authorities and the waste industry to work in collaboration to promote a circular economy that improves resource efficiency and innovation to keep and use products and materials in their original form (highest use) for as long as possible. Given that the processes involved in the production of raw materials, and even recycled materials, have a negative environmental impact, developers will be expected to demonstrate to the Council how their proposal has sought to reduce material demand, by using fewer materials and reusing existing materials. For new build major applications, or major applications which involve substantial demolition and rebuild, this information should be provided as part of the Circular Economy Statement (see Part C of Policy CC3).

8.38 The Circular Economy Statement should show how a development is reducing waste in accordance with the waste hierarchy; and set out the proportion of materials and elements to be reused on-site; materials to be reused from other sites; recycled materials being used on the site; and the proportion of new materials to be used on-site (kg per square metre) to evidence how material demand has been reduced on-site.

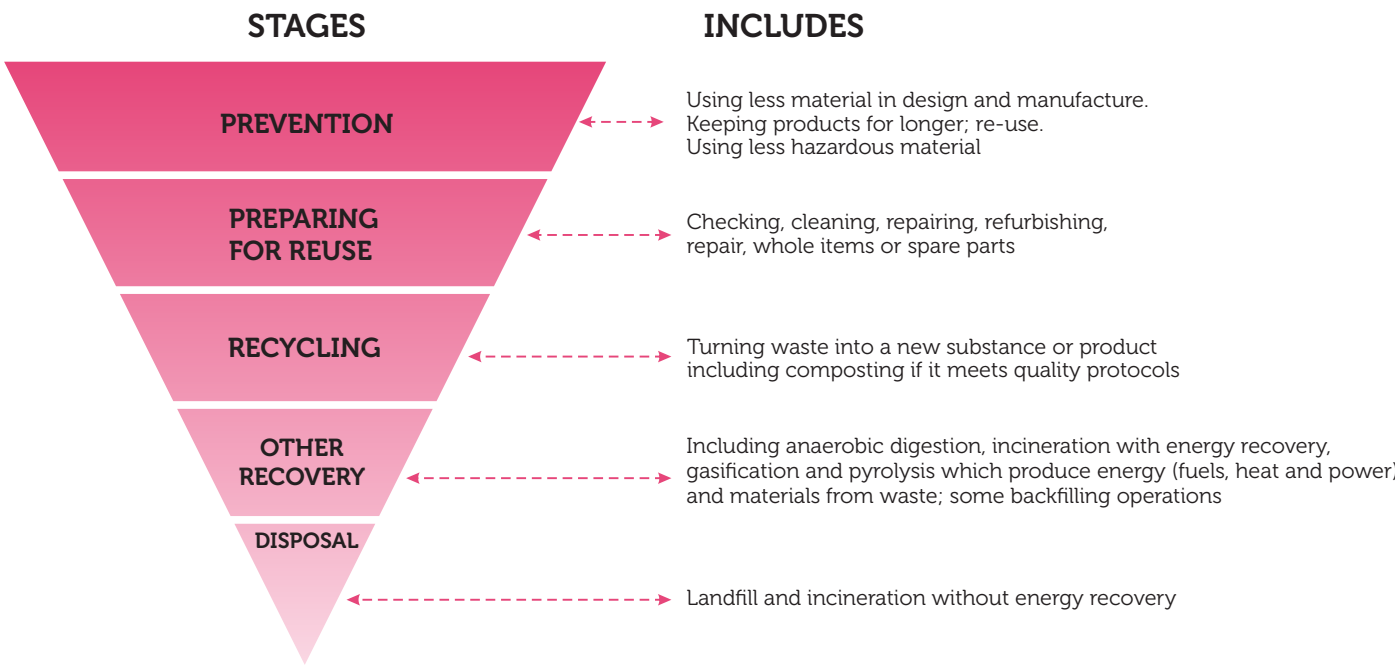
8.39 On smaller developments, which do not trigger the requirement to submit a Circular Economy Statement, developers should set out how Part B of Policy CC3 has been considered. As part of this, developers are encouraged to consider the following:

- dismantling structures in a way that increases the amount of materials that can be reused and salvaged. Any materials should be managed in accordance with the waste hierarchy;
- reusing materials that already exist, either on site or locally (reclaimed brick, tiles, glass); and
- taking time to assess how much material is actually required, rather than over-ordering.

The detail provided should be appropriate to the scale and nature of the proposal.

Figure 19:

Waste Hierarchy, North London Waste Plan 2022



Circular economy

8.40 London Plan Guidance on Circular Economy Statements seeks to ensure circularity is at the heart of the design of development in London, through treating building materials as resources (not waste) and ensuring new development can be easily maintained, adapted, and dismantled over its lifetime. The six Circular Economy principles set out in the GLA's guidance are:

1. building in layers – ensuring that different parts of the building are accessible and can be maintained and replaced where necessary;
2. designing out waste - ensuring that waste reduction is planned in from project inception to completion, including consideration of standardised components, modular build, and reuse of secondary products and materials;
3. designing for longevity;
4. designing for adaptability or flexibility;
5. designing for disassembly; and
6. using systems, elements, or materials that can be reused and recycled.

8.41 Taking a circular economy approach to design is about providing a flexible and adaptable scheme where the proposed use is balanced against future possible use requirements, so that the building can be easily reconfigured and maintained as technologies and the needs of the users change. The structure and interior systems should be designed for simple disassembly when parts of the building may need to be altered. Modular designs and standard elements will minimise waste by making their reuse easier.

8.42 The London Plan requires planning applications that are referable to the Mayor to submit a Circular Economy Statement, while stating that lower thresholds for applications are supported. Policy CC3 requires applications for all new build major development and major development involving substantial demolition to include a Circular Economy Statement. The Circular Economy Statement submitted must be prepared in accordance with the London Plan Guidance and include both a written report and the Circular Economy template spreadsheet. The following information is expected to be provided:

- circular economy targets (including post construction information);
- circular economy design approaches;
- circular economy design principles;
- circular economy design principles by building layer;
- pre-redevelopment audit and pre-demolition audit;
- bill of materials (including post construction information);
- end of life strategy;
- operational waste management plan; and
- recycling and waste reporting (including post construction information).

Temporary storage of re-usable materials

8.43 To reduce embodied carbon and increase reclamation, opportunities for temporary material banks on development sites should be explored. Developers can also refer to the London Waste Map for opportunities to manage materials and waste. The Council will encourage the sharing of information via a database which lists all materials held on sites in Camden for reuse.

Regis Road waste site

8.44 Camden currently has one waste site, the recycling and reuse centre at Regis Road, and the Council will continue to safeguard this site for waste use in line with the North London Waste Plan. The change of use or redevelopment of this site will only be permitted if a suitable compensatory waste site is provided that replaces the facilities and services available at Regis Road. The proposed site will be expected to meet the maximum achievable throughput of the Regis Road site (see London Plan Policy SI 9 (Safeguarded Waste Sites).

Minimising carbon emissions

8.45 The built environment is considered to be responsible for around 25% of the UK's consumption-based greenhouse gas emissions.

8.46 Carbon in the built environment is mostly attributable to operational and embodied carbon. Operational carbon is the emissions associated with energy used to operate the building, including heating, hot water, cooling, ventilation, lighting systems, equipment and lifts, while embodied carbon emissions are associated with materials and construction processes throughout the whole lifecycle of a building.

8.47 Embodied carbon can be further broken down into 'upfront', 'in-use' and 'end-of-life' emissions:

- upfront embodied carbon refers to the emissions caused in the materials production and construction phases of the lifecycle before the building or infrastructure begins to be used;
- in-use embodied carbon refers to emissions associated with materials and processes needed to maintain the building or infrastructure during use such as for refurbishments; and
- end-of-life embodied carbon refers to the carbon emissions associated with deconstruction/ demolition, transport from site, waste processing and disposal phases of a building or infrastructure's lifecycle.

8.48 Policy CC4 seeks to ensure that carbon emissions are minimised over the lifespan of a building and that embodied carbon is actively reduced to help respond to the climate emergency.

Policy CC4

Minimising carbon emissions

A. The Council will seek to ensure that development proposals minimise carbon emissions over the lifespan of buildings and actively reduce embodied carbon.

B. The Council will require developers for all new build major development and all development proposing substantial demolition to submit a Whole Life Cycle Carbon (WLC) emissions assessment. This should be submitted as part of the planning application and demonstrate:

1. that carbon emissions over the lifespan of the building meet the GLA's aspirational WLC benchmarks. Where a developer can demonstrate to the Council's satisfaction that this is not feasible, the Council will expect the development to meet GLA WLC standard benchmarks as a minimum; and
2. what action has been taken to reduce upfront embodied carbon in the development.

Whole life cycle carbon emissions assessment

8.49 Whole life cycle carbon emissions assessment considers both embodied carbon and operational carbon.

8.50 The GLA guidance on undertaking whole life cycle carbon assessments includes a template to assist applicants. The Council will expect applicants to use the template and follow the most up-to-date guidance issued when undertaking whole life cycle carbon assessments.

8.51 The GLA have produced two sets of WLC benchmarks for most typical development typologies: standard benchmarks and aspirational benchmarks. The benchmarks provide a range rather than a set value and are broken down into life-cycle modules. The first set of benchmarks (standard benchmarks) are designed to be used as a guide by all applicants. The second set are aspirational WLC benchmarks, which are based on a 40% reduction in WLC emissions on the first set of WLC benchmarks. This is based on the World Green Building Council's target to achieve a 40% reduction in WLC emissions by 2030. Further information on the WLC benchmarks can be found in the Mayor of London's London Plan Guidance on Whole Life-Cycle Carbon Assessments and developers will be expected to have due regard to this (or subsequent updates).

8.52 In Camden, whole life cycle carbon assessments will be expected to demonstrate that a development meets the most relevant GLA aspirational WLC benchmarks, which vary according to the use of a building. Where the aspirational WLC benchmarks cannot feasibly be met, a full justification will be required, as part of the Whole Life Cycle Carbon assessment, with the expectation that the development will meet the GLAs standard WLC benchmarks as a minimum.

Embodied carbon

8.53 Applicants will be expected to demonstrate what action they have taken to reduce upfront embodied carbon in the development. Consideration of the design of a building at the early stages of a development proposal can reduce embodied carbon by minimising the quantity of materials used, and the waste created, in construction. Decisions made to reduce embodied carbon, and the level achieved, should be set out in the whole life cycle carbon emissions assessment.



Sustainability improvements to existing buildings (retrofitting)

8.54 The electricity and gas used by buildings for power and heating causes 85% of the direct carbon dioxide emissions in Camden.

8.55 Given this, improving and adapting existing homes and buildings to make them more energy efficient and resilient to climate change (also known as retrofitting) is a key priority for the Council as we strive to achieve net zero carbon. In addition to helping to meet the Council's climate change objectives, improving buildings through measures such as the installation of improved insulation, low carbon heating, solar PV and thermally efficient windows can also help reduce energy costs and lead to significant savings for householders and businesses.

8.56 Policy CC5 seeks to support improvements to existing buildings to make them more energy efficient and resilient to climate change. Many retrofitting measures can be implemented without the need for planning permission. For advice on whether planning permission is required for retrofit works, please contact the Council's Planning Service.

Policy CC5

Sustainability improvements to existing buildings (retrofitting)

A. The Council will support adaptations and improvements to existing buildings to reduce the energy needed to occupy them, generate renewable energy, and address climate risks such as drought, overheating and flooding, where the measures are in accordance with the other policies in this Plan.

B. Where works are proposed to a listed building, whole building retrofit plans are recommended, in accordance with Policy D5 (Historic Environment).

C. To improve the sustainability of existing buildings, we strongly encourage schemes that alter, extend and/or convert existing buildings to incorporate one or more of the following measures, appropriate to the scale or nature of the proposal:

1. installation of improved insulation and ventilation;
2. replacement of poor performing windows and doors;
3. installation of low carbon heating (for example a heat pump) or space for a heat pump to be installed at a later date;
4. installation of solar photovoltaic (PV) panels;
5. installation of external shading to reduce overheating risk;
6. installation of a green roof or green and blue roof; and
7. installation of water efficient, low flow fixtures and fittings, and rainwater harvesting.

D. The Council will require the submission of evidence to demonstrate how energy efficiency improvements have been considered and will be implemented. This should be detailed in a Design and Access Statement or, where required, a Sustainability Statement.

8.57 When undertaking sustainability improvements to existing buildings, the impact of proposed retrofit measures should be carefully considered as a whole, with the building's fabric, ventilation and heating characteristics all designed to work in harmony. Developers are advised to refer to the following guidance for further information:

- Adapting Historic Buildings for Energy and Carbon Efficiency - Historic England;
- LETI Climate Emergency Retrofit Guide;
- Net Zero Carbon Toolkit - Etude et al.

8.58 Whole building retrofit plans are also recommended, particularly for listed buildings, in order to avoid the risk of any unintended consequences or installing incompatible improvements. A whole building approach to energy reduction helps to ensure that retrofit improvements work well together, that the benefits of every retrofit measure are fully understood and that the building is considered as a whole. Where whole building retrofit projects are proposed, these should consider the delivery of fabric measures first to improve energy efficiency.

8.59 The following paragraphs outline a number of measures that can be undertaken either as part of an extension, alteration or conversion, or as part of wider whole building approach to energy reduction. Further information on sustainability improvements can also be found elsewhere in this Plan.

Insulation

8.60 Insulating walls, floors and roof spaces is one of the best ways of reducing energy consumption in homes. Insulation to solid walls can either be installed on the outside walls (external) or on the inside walls (internal).

8.61 External wall insulation in conservation areas can dramatically change the appearance of an area by covering up traditional brickwork and obscuring decorative details in the architecture. Generally external wall insulation is unlikely to be acceptable on the front elevation in a conservation area, however it may be acceptable on side and rear walls where the walls are not predominately visible from the street or wider view, or where they form part of a decorative uniform group. Outside of conservation areas external wall insulation will generally be accepted provided what is proposed is in accordance with the design policies in this Plan.

8.62 All external wall insulation should be applied without the need to extend roof eaves, ensuring original detailing is reinstated, the junction with other elevations is carefully considered, and the finish matches the material, colour and texture of the existing building. The junctions with adjoining properties and around window and door reveals must be sensitively considered, including the repositioning of guttering. Consideration should also be given to the breathability of insulation materials to avoid a build-up of condensation and damp. It is also recommended that a ventilation strategy is considered to ensure that works do not contribute to an increased risk of overheating or excess moisture build-up.

8.63 Other types of insulation, such as floor and roof insulation, are more likely to be acceptable in listed buildings, but this depends on the nature of the floor and whether air can circulate.

Ventilation

8.64 Ventilation is important for homes undergoing retrofit measures because improved insulation and airtightness (through improved windows, for example) can increase issues with moisture build-up and indoor pollution. Ventilation can include simply opening windows or having trickle vents on windows, or installing an extractor fan in bathrooms and kitchens.

8.65 Where homes become more energy efficient through the installation of improved insulation and high performing windows, fitting a ventilation system such as Mechanical Ventilation with Heat Recovery (MVHR) should be considered. MVHR is a whole house system that extracts damp and stale air from a building and draws in fresh air from the outside. A heat exchanger is used to ensure heat is not lost from air flowing inside and outside. Inlets for ventilation systems should however be located away from busy roads or other pollution sources (in accordance with Policy A3 (Air Quality).

Windows and doors

8.66 The Council will support the installation of secondary, double or triple glazed windows, where appropriate. Window replacement should seek to match the features and appearance of original windows or those most closely associated with the historic character of the area.

8.67 Planning permission for window replacement is required where they do not match the material, colour, size and design of existing window frames and profile, or where it relates to a listed building or building covered by an Article 4 Direction (which removes permitted development rights for certain building works). Please see the Council's webpage 'Article 4 Directions Heritage and Conservation' for more information.

8.68 Energy efficient replacement doors can also help to improve the comfort of a home. Similar to window replacement, planning permission is generally not required (unless covered by an Article 4 Direction, or where a building is listed) provided they match or are as similar as possible to the design and material of the original door.

Heat pumps

8.69 Heat pumps operate by absorbing heat from a source such as the ground, water, waste heat from machinery, or the outside air, and using it to provide heating. Heat pumps are most efficient in buildings that are well-insulated and draught proofed.

8.70 To minimise any potential noise impact, external heat pump equipment should be installed away from neighbouring properties. Further guidance is also available in the 'Heat Pumps Professional Advice Note' produced by the Institute of Acoustics and Chartered Institute of Environmental Health.

8.71 Permitted development rights allow certain building works and changes of use to be carried out without a planning application. Planning permission is not always required for air source heat pumps provided that they meet permitted development criteria (see the General Permitted Development Order). Where heat pumps are proposed for listed buildings, listed building consent and planning permission is required. Please refer to Historic England guidance on 'Adapting Historic Buildings for Energy and Carbon Efficiency' for further information.

Solar photovoltaic (PV) panels

8.72 In most cases, roof-mounted solar panels on residential properties do not require planning permission, provided they meet certain conditions, as set out in the General Permitted Development Order.

8.73 Where solar panels are proposed on listed buildings, buildings covered by an Article 4 Direction which removes permitted development rights for the roof, or where what is proposed goes beyond the permitted development conditions, then planning permission and listed building consent will be required. Where solar panels require planning permission and listed building consent these will be supported provided that they do not harm historic fabric or the significance of a heritage asset.

Energy use and the generation of renewable energy

8.74 One of the aims of the Camden Climate Action Plan is to ensure that "Camden's buildings will be energy efficient, comfortable and fit-for-purpose for a zero carbon future".

8.75 All buildings in England and Wales must comply with Part L 2021 of the Building Regulations which sets a minimum level of performance for the conservation of fuel and power. However, in order to deliver climate commitments, local authorities can seek to go further than the Building Regulations and set their own energy targets. Paragraph 161 of the National Planning Policy Framework (NPPF) states the planning system should support the transition to net zero by 2050 and should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions; minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

8.76 To inform the approach to the delivery of net zero development, the Council, along with seventeen other London boroughs, commissioned a study on 'Delivering Net Zero'. Camden has also commissioned a further study on delivering energy reduction measures for existing buildings.

8.77 Policy CC6 seeks to tackle the causes of climate change in the borough by ensuring that developments use less energy and maximise the generation of renewable energy on-site. It sets out the Council's approach for new building construction, which includes proposals containing some existing built fabric (such as a façade, core, basement and foundation); and proposals for existing buildings that include the reprovision or addition of 500m2 or more in floorspace or the creation of one or more homes. It also sets out requirements applicable to both new buildings and existing buildings.

8.78 The policy will ensure that necessary action is taken to reduce carbon dioxide emissions and will help the Council to ensure that Camden has enough decent, safe, warm, and family-friendly housing to support our communities - one of the six ambitions in We Make Camden.

Policy CC6

Energy use and the generation of renewable energy

New build construction

A. The Council will expect all new buildings, and developments where some existing built fabric is retained, to:

1. be fossil fuel free (that is, not connected to the gas grid), be ultra-low energy, use low carbon heat (such as heat pumps), and maximise the generation of renewable energy (through solar PV) on-site;
2. be designed to use as little energy as possible to heat them. Developers should achieve a space heating demand of 20 or less kWh/m2 GIA/yr (kilowatt hour per square metre of gross internal area per year);
3. minimise total energy use. For each of the building types set out below (or the nearest equivalent), the Council will expect development to meet the Energy Use Intensity targets set out below, unless it is demonstrated to the Council's satisfaction that it is not feasible:
    a. residential buildings - 35 kWh/m2GIA/yr;
    b. offices, Retail, Higher Education Teaching facilities, GP surgeries - 70 kWh/m2 GIA/year;
    c. student accommodation, care homes, extra care homes - 35 kWh/m2 GIA/year;
    d. hotels - 160 kWh/m2 GIA/year;
    e. light industrial units - 35 kWh/m2 GIA/year; and
    f. schools - 65 kWh/m2 GIA/year.
4. be designed and built to achieve an energy balance of net zero carbon in operation. Developers should ensure that renewable energy generation on site (through solar PV) matches, or is in excess of, the total energy use of the building (Energy Use Intensity). Where it can be demonstrated to the Council's satisfaction that it is not feasible for the amount of energy generated in a year through onsite renewable energy production to match the predicted annual energy demand of the building, a payment in lieu will be sought. The payment in lieu should be related to the scale of the shortfall, subject to viability.

B. The total energy use and renewable energy generation of major developments should be monitored for the first 5 years of occupation in accordance with London Plan Policy SI2 (Minimising Greenhouse Gas Emissions).

Policy CC6

Energy use and the generation of Renewable Energy

Existing buildings

C. The Council will expect proposals for works to an existing building that includes the provision of 500sqm or more of additional or reprovided floorspace, or creates one or more additional home, to:

1. be fossil fuel free and use low carbon heat;
2. maximise the generation of renewable energy (through solar PV) where feasible;
3. take measures to reduce the amount of energy needed to heat the building over a year to meet the following space heating demand targets (unless demonstrated to the Council's satisfaction that it is not feasible):
   a. 105 kWh/m2/year for residential conversions;
   b. 85 kWh/m2/year for homes created by upward extension; and
   c. 60 kWh/m2/year for non-residential development;
4. be designed to use as little total energy as possible, to meet the following Energy Use Intensity targets (unless demonstrated to the Council's satisfaction that it is not feasible):
   a. 70 kWh/m2/year for residential; and
   b. 115 kWh/m2/year for non-residential.

All buildings

D. Non-residential development that provides 500sqm or more of additional or reprovided floorspace will be expected to achieve a minimum of 'Excellent' in BREEAM non-domestic refurbishment.

E. Developments covered by Part A and Part C of this policy will be required to demonstrate that a development will deliver all the expectations of this policy through the submission of an Energy Statement.

Delivering net zero

8.79 A net zero operational building is one where no fossil fuels (such as gas in boilers) are used, all energy use has been minimised, and the renewable energy generated on site matches the building's energy use on an annual basis.

8.80 Developers will be required to submit an Energy Statement to demonstrate that development proposals will not utilise fossil fuels in their operation, and will use low carbon heat sources for heating.

8.81 The low carbon heat source should not, however, be direct electric (from the mains supply), as this has been shown to increase bills significantly, which is contrary to the Council's aim of reducing fuel poverty in Camden. Direct electric is also not compatible with connection to district heating networks (see Policy CC7 (Heat Networks)).

Design to reduce heating demand (space heating demand)

8.82 Space heating demand is the amount of heat energy needed to heat a home or building over a year and is expressed in kWh/m2/year. It is a measure of the thermal efficiency (performance) of the building elements. Various design and specification decisions affect space heating demand, including building form and orientation, insulation, air tightness, windows, doors and the type of ventilation system.

8.83 Where a proposal falls under Part A or Part C of Policy CC6 the Council will require developers to submit an Energy Statement as part of a planning application for their site. This should model and demonstrate how the maximum space heating demand target has been achieved. If the space heating demand target cannot be achieved, it must be demonstrated to the Council's satisfaction that every effort has been made to reach the targets set out in Policy CC6.

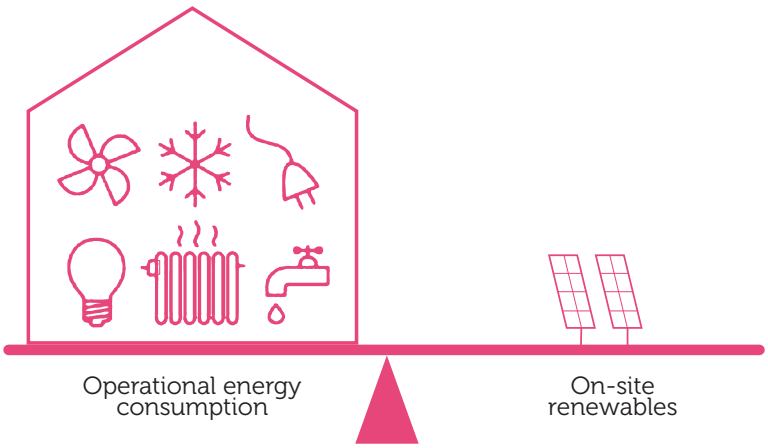
Total energy use (energy use intensity)

8.84 Energy Use Intensity (EUI), or metered energy use, is a measure of the total annual energy consumption of a building over a year, per metre square of floorspace, expressed as kWh/m2/year. The EUI of a building covers all energy uses including heating, domestic hot water, ventilation, lighting, cooking, and appliances (not including renewable energy generation through solar panels). Policy CC6 sets out EUI targets for different building types. It is recognised that not all building types will fit into the categories in the policy. In such cases the developer should, as part of the pre-application process, discuss and agree with the Council what the EUI target for their development should be. Where the EUI target cannot be met, the Energy Statement should demonstrate that every effort has been made to reach it.

Figure 20:

A key component of a net zero operational building is achieving an energy balance.

ENERGY BALANCE
The amount of renewable energy generated in a year should match or exceed the EUI



Renewable energy generation and achieving an energy balance

8.85 All development covered by this policy must maximise the installation of highly efficient solar PV. Where feasible, the installation of a combined green and blue roof and solar PV is expected, in line with policy CC11 (Sustainable Drainage).

8.86 For new buildings, and developments where some existing built fabric is retained, to achieve an energy balance of net zero in operation, renewable energy generation on-site (through solar PV) must match, or be in excess of, the predicted annual energy demand of the building (EUI) (see Figure 20 above). There may be instances, however, where an energy balance cannot be achieved, and the Council will seek a payment in lieu to offset the shortfall. Energy offsetting will only be considered where the developer has demonstrated to the Council's satisfaction, in their Energy Statement, that they have done all that is feasibly possible to achieve an energy balance by minimising the buildings predicted energy usage and maximising renewable energy generation through solar PV. The applicant should establish the shortfall between the predicted annual energy use and annual renewable energy generation. An offset payment equivalent to the shortfall will be secured through a s106 agreement, subject to viability. Funds collected in this way will be used to deliver carbon reduction measures in the borough.

8.87 The offset price will be based upon the cost to install solar PV elsewhere in the borough. Using a reasonable cost rate for a high output solar PV system with micro-inverters (i.e. £1,016/kWp) and applying a 10% additional rate for administering and managing the funding process, gives an energy offset price of £1.32/kWh/year.

8.88 The energy offset contribution should equal the energy difference (kWh) x £1.32/kWh and will be secured by planning obligation. This approach is based on calculations from the 'Delivering Net Zero' study (2023). The offset price may be updated as required to reflect changes to the cost of solar installation.

Works to existing buildings

8.89 Developments involving the creation 500 sqm or more of additional or reprovided floorspace, or one or more homes, will be required to be low energy, use low carbon heat, and generate renewable energy through the use of solar panels where feasible. The Council will expect developers to demonstrate how these measures have been considered and how they will be implemented through the submission of an Energy Statement. Where there are significant constraints to meeting criteria 3 and 4 of Part C of Policy CC6, these should be clearly outlined in the Energy Statement.

Energy statements

8.90 Developments covered by Part A and Part C of Policy CC6 will be required to submit an Energy Statement to demonstrate to the Council's satisfaction that energy savings have been maximised through energy efficient design, low carbon heat, and the generation of renewable energy on-site.

8.91 Energy Statements will be expected to include a detailed modelling report, EUI and Space Heating Demand results. Energy performance modelling should be undertaken in accordance with the Chartered Institution of Building Service Engineers (CIBSE) Technical Memorandum 54 Operational Energy (TM54) or its successor. The Energy Statement will also be expected to show compliance with the targets set out in this policy, unless otherwise justified.

8.92 For further information please refer to Camden Planning Guidance on Energy Efficiency and Adaptation and the GLA Energy Assessment Guidance. Developers will be expected to have due regard to these.

Monitoring

8.93 The London Plan requires energy performance reporting to be undertaken for new major developments for at least five years following completion. The GLA's 'Be Seen' guidance states: "All data and supporting evidence should be submitted to the GLA using the 'Be Seen' reporting templates webform". The Council will therefore expect the total energy use and renewable energy generation of major developments to be monitored for the first 5 years of occupation in accordance with London Plan Policy SI2 (Minimising Greenhouse Gas Emissions).

BREEAM Assessment

8.94 BREEAM (Building Research Establishment Environmental Assessment Method) is a tool that enables the environmental sustainability of a development to be assessed. BREEAM contains the following categories: Energy, Water, Materials, Waste, Surface Water, Management, Transport, Land use, Ecology, Health and Wellbeing, and Pollution. Each category contains credits that can be obtained by implementing a sustainable design or construction measure.

8.95 The policy requires non-residential development that provides 500 sqm or more of additional or reprovided floorspace to achieve a minimum of 'Excellent' in BREEAM non-domestic refurbishment. As part of this developers will be expected to achieve 60% of all available Energy and Water credits and 40% of available Materials credits. This weighting of credits is considered to result in the greatest environmental benefits. Where there are significant constraints to meeting this level of accreditation (such as heritage), this will need to be demonstrated as part of the Sustainability Statement submitted with a planning application. More information on BREEAM Assessment can be found in our Camden Planning Guidance on Energy Efficiency and Adaptation and developers will be expected to have due regard to this.

Heat networks

8.96 Heat networks provide heat from a central source. The Council's Local Area Energy Plan has identified communal and district low carbon heat networks as one of the key technologies for the decarbonisation of Camden.

8.97 A low carbon heat network may use waste heat or low carbon heat sources such as heat pumps. A communal heat network is where heating, hot water and, potentially, cooling is supplied to a single building divided into separate premises. A district heat network is the connection of more than one building to a shared system which can span groups of buildings such as flats and offices.

8.98 The majority of Camden is within a Heat Network Priority Area, as defined by the GLA. This means that the heat density in Camden is considered sufficient for heat networks to provide a financially competitive solution for supplying buildings. In addition, DESNZ (Department for Energy Security and Net Zero) Heat Network Zone modelling and the Local Area Energy Plan phase 1 have also indicated that large parts of the borough are Heat Network Focus Areas, where Heat Networks are expected to be the lowest cost low carbon technology, and therefore likely to be designated as a Heat Network Zone through the Energy Act 2023.

8.99 Heat networks and low carbon heat sources will become an increasingly important element of London's energy supply and will help London become more self-sufficient and resilient in relation to its energy needs. Connections to existing and future planned heat networks are therefore supported in line with Policy CC7.

Policy CC7
Heat Networks

A. Major developments will be expected to utilise energy from heat networks, or be designed and constructed to be able to connect to a heat network, where feasible.

The Council will:

1. expect major development to comply with the London Plan policy on Energy infrastructure and refer to the related GLA Energy Assessment guidance for heat networks and utilising secondary heat sources; and

2. expect major development to prioritise connection to a low carbon heat network.

The heating hierarchy

8.100 London Plan Policy SI3 Energy Infrastructure requires major development proposals within Heat Network Priority Areas (also known as Heat Network Zones) to have a communal low-temperature heating system in accordance with the following heating hierarchy:

1. connect to local existing or planned heat networks;
2. use zero-emission or local secondary heat sources (in conjunction with heat pump, if required);
3. use low-emission combined heat and power (only where there is a case for it to enable the delivery of an area-wide heat network, meet the development's electricity demand and provide demand response to the local electricity network);
4. use ultra-low nitrogen oxides (NOx) gas boilers. (Combined heat and power systems (CHP) and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the requirements in Part B of London Plan Policy SI 1 (Improving air quality).

8.101 The Council will expect major developments (defined as 10 or more homes or the reprovision or addition of 1,000 sqm of non-residential floorspace) to fully explore opportunities to connect to existing or future planned heat networks. Where immediate connection is not feasible, developments should be designed to enable future connection. Developers should refer to London Plan Guidance on Energy Assessments and The London Heat Network Manual for further information.

Connection to existing networks

8.102 London Plan Guidance on Energy Assessments states that where a heat network exists within the vicinity of the proposed development the applicant must prioritise connection, provided that:

- the network does not exceed the CO2 emission and primary energy factor limits set out in Part L 2021; and
- the network operator has agreed a decarbonisation strategy with the GLA and the relevant borough, or is in the process of doing so (unless otherwise updated).

8.103 Existing heat networks in Camden are located in Somers Town, Gower Street, Bloomsbury, Gospel Oak, and King's Cross. These networks have grown around existing CHPs. The carbon savings from these systems has declined in recent times however, as a result of the decarbonisation of the national grid. They are also related to adverse air quality impacts. While it is possible to decarbonise existing CHP systems, this has yet to be carried out in Camden.

Overheating and cooling

8.104 The design of our environment has a significant effect on our experience and perception of heat.

8.105 The UK's climate is changing and in the coming decades periods of high temperature will become more common and more intense. Recent heatwaves have demonstrated how high temperatures are a threat to health and well-being, our infrastructure and economic productivity. Situated in the heart of London, Camden is surrounded by an urbanised landscape characterised by concrete structures, asphalt roads, and limited green spaces. These urban features absorb and retain heat, making cities noticeably warmer than rural areas.

8.106 Given this, it is important to ensure that buildings and spaces in Camden are designed to promote cooling and reduce overheating, while avoiding the use of mechanical cooling, which often has significant energy requirements and, under conventional operation, expels hot air, which adds to the risk of overheating. This will reduce the impact of overheating in the borough and reduce inequality in the experience of heat impacts.

Policy CC8
Overheating and Cooling

A. The Council will ensure that development is designed to minimise overheating and promote cooling. We will:

1. support proposals which seek to adapt and improve existing buildings to improve natural ventilation, address overheating and promote natural (non-mechanical) cooling, where they are in accordance with other policies in this Plan;
2. expect development to minimise the adverse impacts of overheating. Developers should include information in their Design and Access Statement or, where required, Sustainability Statement to demonstrate how the risk of overheating has been minimised and mitigated through the incorporation of design measures;
3. expect major developments to undertake overheating assessments in line with the cooling hierarchy set out in the London Plan, taking into account future climate change. Proposals for active cooling in new residential developments are unlikely to be considered acceptable;
4. only permit applications for new and/or additional active cooling systems or units where all other feasible measures in the cooling hierarchy have been integrated into the development and there is still a clear need for active cooling demonstrated by dynamic thermal modelling. Where applications for active cooling are considered acceptable, the energy used to operate the active cooling system should be offset through the installation of solar PV and greening, to help cool the local environment, where feasible; and
5. seek to minimise the environmental impact of the operation of air conditioning units and heat pumps.

Measures to cool existing buildings

8.107 The most effective way of limiting overheating in a building is to stop heat from entering it or building up inside. This can be achieved through window design or, in the case of existing buildings, the use of appropriate external shading, or internal shutters and blinds, where external shading is not feasible. For south-facing facades, fixed horizontal shading is effective in blocking high-angled summer sun. For east or west facing facades, movable shutters or external blinds that are perforated or slatted are most effective.

8.108 Materials and finishes also have a positive impact in reducing overheating. Generally, lighter coloured materials and finishes reflect more sunlight than darker ones and lead to lower surface temperatures and lower heat absorption. Surfaces covered in plants or water also absorb less heat and maintain lower surface temperatures. Reflective roofs also help to keep buildings cooler.

The cooling hierarchy

8.109 The cooling hierarchy, set out in the London Plan 2021, provides measures that should be used to manage heat risk in developments. The cooling hierarchy is as follows:

1. reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure;
2. minimise internal heat generation through energy efficient design;
3. manage the heat within the building through exposed internal thermal mass and high ceilings;
4. provide passive ventilation;
5. provide mechanical ventilation; and
6. provide active cooling systems.

8.110 Developers will be expected to minimise the adverse impacts of overheating through the application of the London Plan cooling hierarchy set out above, prioritising the measures at the top of the hierarchy, over the ones at the bottom.

Minimising overheating risk

8.111 Policy CC8 expects developers to demonstrate how the design of a proposal has sought to reduce any adverse impacts of overheating. This could be as simple as noting how the window design in an extension uses smaller windows on the south elevation and larger windows on the north (recognising a balance is needed between solar gain and daylight).

8.112 Applications that create additional homes could also consider using the Good Homes Alliance early stage overheating risk tool, which is considered to be an easy-to-complete and easy-to-understand method of demonstrating how the risk of overheating has been addressed.

8.113 Other measures that could be used to reduce the overheating risk in buildings and the spaces around buildings include:

- controlling solar gain (through window design – considering size, properties of the glass used, depth of window reveal, and window openings);
- shutters and blinds;
- dual aspect units;
- inset balconies;
- design layouts to promote natural ventilation – secure night ventilation;
- ceiling height at 2.6m;
- using materials and finishes to reflect sunlight;
- ceiling fans;
- hard surfaces (permeable) to be kept to a minimum; and
- maximising green landscaping (see policies in the Natural Environment Chapter).

Minimising overheating in major developments

8.114 The Council will expect developers to demonstrate that measures to cool buildings and the environment between buildings have been explored and integrated within the development.

8.115 The London Plan refers to the Chartered Institution of Building Services Engineers (CIBSE) guidance on assessing and mitigating overheating risk. TM 59 should be used for residential developments and TM 52 should be used for non-residential developments. In addition, TM 49 guidance and datasets should also be used to ensure that all new development is designed for the climate it will experience over its design life.

8.116 Major developments including new build, substantial demolition and refurbishment schemes should demonstrate how the risk of overheating has been addressed and submit evidence as outlined in the GLA Energy Assessment Guidance (or subsequent updates).

Active (mechanical) cooling measures

8.117 The London Plan states that "passive ventilation should be prioritised, taking into account external noise and air quality in determining the most appropriate solution" and that "the increased use of air conditioning systems is not desirable".

8.118 Applicants will therefore be expected to demonstrate that all passive design measures have been thoroughly investigated, in line with the cooling hierarchy, and feasible measures that reduce the need for cooling have been installed, before considering the need for 'active cooling'. Furthermore, the Council will expect applicants to explore the use of mechanical ventilation with heat tempering before air conditioning, in line with the London Plan cooling hierarchy.
The Council will also expect developers to identify, through the energy statement or dynamic thermal modelling submitted with the application, the cooling requirement to be met through active cooling.

8.119 Where the use of 'active cooling' measures are considered acceptable by the Council, we will expect developments to provide an appropriate level of mitigation towards cooling the local environment, where feasible, including the generation of renewable energy through solar photovoltaics, or other measures as recommended.



Water efficiency

8.120 London has lower rainfall than the national average while having a very high population density.

8.121 This combination of limited water resources and high demand has resulted in London being declared an area of serious water stress by the Environment Agency, and this is likely to be exacerbated by climate change.

8.122 This policy seeks to maximise water efficiency in new development to ensure adequate water supply and help respond to the climate emergency.

Policy CC9
Water Efficiency

A. To ensure that water is efficiently conserved and reused, the Council will:

1. require all new development to be designed to be water efficient;
2. require all residential development to meet the optional requirement for water efficiency set out in Part G of the Building Regulations of 110 litres per person per day (including 5 litres for external water use). Proposals will be strongly encouraged to reduce daily water use even further than this where possible;
3. require all new build non-residential development to achieve 'excellent' for category Wat 01 of BREEAM;
4. require all new buildings to include rainwater harvesting, appropriate to the scale and nature of the proposed development; and
5. require major developments and high, or intense, water use developments, such as hotels, hostels and student housing, to include a grey water system, unless it is demonstrated to the Council's satisfaction that this is not feasible or practical.

Conserving water

8.123 Developments must be designed to be water efficient. This can be achieved through the installation of water efficient fittings and appliances (which can help reduce energy consumption as well as water consumption) and by capturing and re-using rainwater and grey water on-site.

8.124 The simplest way of minimising water use is through installing efficient water fittings and plumbing, such as:

- low and dual flush toilets;
- low flow taps and shower heads;
- low water consuming washing machines and dishwashers;
- using alternative water sources; and
- low water use landscaping and gardens.

8.125 At least 50% of water used in homes and workplaces does not need to be of drinkable quality. For example, rainwater can be water used for flushing toilets, washing laundry and watering plants and gardens. If used outside, a rainwater harvesting system can take the form of a simple water butt. If used within the building it will need to be supplied through pipes and taps that are separate from the standard mains water supply.

Reusing water

8.126 'Grey water' (water that has already been used in hand basins, baths and showers) can be stored, filtered and disinfected, and then reused for toilet flushing, garden watering or laundry. Major developments and high, or intense water use developments, such as hotels and student housing, will therefore be expected to include a grey water system.

8.127 If a grey water system is not included within a scheme, we will expect developers to demonstrate to the Council's satisfaction, that it is not feasible or practical to deliver a grey water system, by providing information on:

- the cost of the system;
- cost savings for owner/occupier;
- projected grey water generation; projected demand for use of grey water;
- water savings as a result of the grey water system; and
- payback for the system.

8.128 When considering water efficiency, developers will be expected to have due regard to the Council's Camden Planning Guidance on Water and Flooding.

Flood risk

8.129 The National Planning Policy Framework requires Local Plans to take account of all sources of flood risk so as to avoid, where possible, flood risk to people and property.

8.130 Camden is classified as being in Flood Zone 1 which signifies the lowest probability of flooding, as there are no main rivers within the borough. All main rivers historically located within Camden are now incorporated into the Thames Water sewer network. These are referred to as 'lost' or historic rivers and include the River Fleet, River Westbourne and River Tyburn.

8.131 Flooding from surface water and sewer surcharge pose the greatest risk to flooding in Camden, and the risk is exacerbated due to the prevalence of the combined sewer system. The borough experienced significant flooding in 1975, 2002, and 2021, and the probability of such events recurring is likely to increase as a result of climate change. Camden also experiences some flooding from groundwater sources particularly in areas to the north and the south of the borough.

8.132 The Council has updated the Strategic Flood Risk Assessment (SFRA) for the borough. This provides a clear picture of the potential risks associated with flooding in Camden and outlines requirements that will ensure that these risks are managed in a sustainable way into the future.

8.133 The location, form, and use of a development, and any flood mitigation measures used, can have an impact on flood risk. The Council is a Lead Local Flood Authority, which means it has responsibility for managing flood risk from surface water and groundwater in the borough. Policy CC10 sets out the Council's approach to managing flood risk, to ensure that development in Camden does not increase flood risk and instead reduces it where possible.

Policy CC10
Flood Risk

A. The Council will seek to ensure that development addresses and reduces flood risk to mitigate the impact of flooding on Camden's communities, both now and in the future. The Council will:

1. expect developers to have due regard to the borough's Strategic Flood Risk Assessment, information published by the Council on previously flooded streets and the Environment Agency's Risk of flooding from surface water map to identify whether a site is at risk of flooding from any source (except for certain smaller developments as set out in the paragraph 8.137 below);
2. require site specific Flood Risk Assessments (FRA) to be submitted for:
    a. all sites of 1 hectare or greater; and
    b. all applications (including basement developments) where flood risk has been identified in accordance with criteria (A1).
3. expect site specific Flood Risk Assessments to:
    a. be prepared in accordance with the guidance set out in the Council's Strategic Flood Risk Assessment;
    b. demonstrate how a development has been designed to be resilient to flooding; and
    c. set out how the risk of flooding will be mitigated over the lifetime of the development, without increasing flood risk elsewhere. Recommendations in the FRA will be secured by planning condition.

B. The Council will also support the retrofitting of flood resilience and flood resistance measures to properties that have previously experienced flooding, or are at risk of flooding, where the measures are in accordance with other policies in this Plan.

Sources of flood risk

8.134 The Council's Strategic Flood Risk Assessment provides information on all sources of flood risk in the borough including:

- surface water flooding – which is based on previously flooded streets, Local Flood Risk Zones, the Environment Agency's Risk of flooding from surface water maps, and historic water courses;
- groundwater flooding;
- sewer flooding; and
- artificial sources of flooding, including flooding from reservoirs and ponds.

8.135 The extent and depth of surface water flooding is also shown on the Environment Agency's flood risk maps (Risk of flooding from surface water), which reflect differing levels of risk. Whilst the data is relatively high level, it predicts the risk of surface water flooding in the urban landscape. The Council also has a record of all known previously flooded streets where surface water and sewer water has affected properties, and this is available to view on the Council's website.

8.136 The Council will expect applicants to refer to the Strategic Flood Risk Assessment when identifying flood risk in relation to a site. Areas at risk of flooding are subject to change (as a result of future flood events) and therefore reference should also be made to Environment Agency surface water maps and any further modelling undertaken (published on the Council's website).

8.137 Applications for the following development types are not however required to identify the flood risk posed to a site:

- minor non-residential extensions (industrial/ commercial/leisure etc);
- extensions with a floorspace of less than 250 sqm;
- alterations or development that does not increase the size of buildings, for example alterations to external appearance;
- minor householder development that would not create a separate dwelling within the curtilage of the existing dwelling (unless related to a basement); and
- changes of use (except where this would introduce a more vulnerable use).

Flood risk assessments

8.138 Where a Flood Risk Assessment is required, the Council will expect this to identify the main flood risks to a development site, assess whether the development will increase flood risk, and set out recommendations for the provision of suitable flood mitigation measures to reduce the impact of flooding at the site and in the surrounding area. The Flood Risk Assessment should consider all sources of flood risk and demonstrate how risk will be managed now and over the lifetime of the development, taking into account climate change and vulnerability of its users.

8.139 A Flood Risk Assessment should be appropriate to the scale, nature and location of the development. Applicants should refer to the Council's Strategic Flood Risk Assessment when undertaking a Flood Risk Assessment to assist in determining the likely impact the development will make to flood risk. It is also recommended that applicants use the Environment Agency guidance on flood risk assessments when considering the scope of the assessment.

8.140 For sites identified as being at risk from flooding, the Council will expect the Flood Risk Assessment to demonstrate that:

- the most vulnerable uses are located in areas at lowest risk of flooding within the site;
- the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;
- the development incorporates sustainable drainage systems (SuDS), unless there is clear evidence that this would be inappropriate;
- any residual risk can be safely managed; and
- safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

8.141 Where a development is proposed in an area at risk of flooding, the Council will also expect the Sequential Test to be applied in accordance with the National Planning Policy Framework and Planning Practice Guidance on Flooding.

8.142 It is recommended that where a site is identified as being at risk of flooding, applicants seek pre-application advice from the Council at the earliest opportunity.

Basements

8.143 Basements can affect the ability of the ground to absorb rain when soil is replaced by an impervious structure and can be particularly susceptible to flooding. The Council's Strategic Flood Risk Assessment notes that basement development within the north and south of the borough could encounter the water table. The rise and fall of the water table and proximity to historic rivers may increase the risk of groundwater flooding. The approach to basements and flood risk is set out in Policy D6 (Basements).

Flood resilience

8.144 'Property Flood Resilience' is an approach to building design which aims to reduce flood damage, and speed recovery and the reoccupation of a building following a flood. It uses a combination of flood resistance and recovery measures and is described in the CIRIA Property Flood Resilience Code of Practice, which provides advice for both new build and retrofit developments.

8.145 To provide protection from the risk of flooding, the following measures could be implemented in developments:

- non-return valves can be installed to prevent water entering a property from drains and sewers;
- solid timber doors can be used, as these are comparatively more water resistant compared to modern hollow doors. However, it is understood that the flood depth from surface water flooding for lower ground properties may exceed the flood protection level offered by a timber door. In conservation areas, it may be acceptable for a flood-proof composite door to be installed on the lower ground floor, as long as it is of similar appearance and justified due to flood risk; and
- raised thresholds at doors or around lightwells to basements or lower ground floors can also offer a level of protection or resistance against flooding. These should be at least 300mm over ground level or over any known flood height level.

8.146 Additionally, to aid flood recovery the following measures could also be implemented:

- kitchens, bathrooms and essential plant should not be located in basements in flood risk areas to ensure the property remains habitable during any clean up;
- materials with either good drying and cleaning properties or sacrificial materials that can easily be replaced post-flood should be used;
- development should be designed for water to drain away after flooding;
- access to all spaces should be designed to permit drying and cleaning; and
- the level of electrical wiring, appliances, and utility meters should be raised.

Sustainable drainage

8.147 The borough is particularly at risk from surface water flooding, mainly due to its topography and the large extent of impermeable surfaces, which do not allow rainwater to be absorbed into the ground.

8.148 By increasing the number of permeable surfaces into which rainwater can be absorbed, development can reduce stress on the drainage network and reduce the risk of flooding to properties downstream.

8.149 The borough is predominately served by the combined sewer system. This has exceeded capacity in significant rainfall events, which has led to flooding (in 1975, 2002, and 2021). It is therefore necessary for development to reduce pressure on the sewer system by minimising surface water run-off through the application of the London Plan drainage hierarchy, which is set out opposite:

1. rainwater used as a resource stored for future use (rainwater harvesting, blue roofs);
2. rainwater infiltration to ground, at or close to source;
3. rainwater attenuation in green infrastructure features for gradual release (green roofs, rain gardens);
4. rainwater discharge direct to watercourse (unless not appropriate);
5. controlled rainwater discharge to a surface water sewer or drain; and
6. controlled rainwater discharge to a combined sewer.

8.150 Policy CC11 sets out the Council's approach to reducing surface water run-off and promoting sustainable drainage systems (SuDS) to help manage flood risk in Camden.

Policy CC11
Sustainable Drainage

A. All development proposals should follow the London Plan drainage hierarchy to reduce surface water run-off rates as far as practicable. Development proposals should include permeable surfaces, incorporate green and blue roofs, and seek to replace non-permeable surfaces with permeable surfaces where feasible. This should be documented within the Design and Access Statement, or Drainage Report where required.

B. The Council will resist proposals including impermeable surfacing (where rainwater would run-off the surface rather than soak in) unless it can be demonstrated that this is unavoidable.

C. The Council will require all major development to reduce surface water run-off rates to greenfield run-off rates, through the use of Sustainable Drainage Systems (SuDS), following the drainage hierarchy in the London Plan. Sustainable Drainage Systems should:

1. be designed to provide multifunctional benefits, maximise urban greening and be integrated into the development; and
2. meet national and local guidance to ensure they are adequately designed, built and maintained for the lifetime of the development.

D. A drainage report should be submitted with all applications for major development, basements, and other development vulnerable to flooding (as set out in Annex 3 of the National Planning Policy Framework) in areas identified at risk of flooding (in accordance with Policy CC10 (Flood Risk)).

E. In the Counters Creek catchment area (shown on the Planning Policies Map) applications for basement development, and other development vulnerable to flooding in areas identified at risk of flooding, should seek to reduce surface water run-off rates to be as close to the greenfield run-off rate as feasible.

Reducing surface water run-off

8.151 Camden has relatively few permeable surfaces which naturally allow water to soak into the ground. Surface water flooding is caused when the existing water infrastructure (drains and sewers) cannot cope with heavy rainfall. The stress on existing infrastructure can be reduced by increasing the proportion of surfaces which can absorb and store water.

8.152 To support a sustainable approach to drainage, all development (including extensions) should install green or green/blue roofs where feasible and appropriate. A blue roof provides for the storage of rainwater at roof level. Green roof specifications should be tailored to realise the most suitable benefits for the site and should consider appropriate drought-resistant planting to ensure that plants can survive hot summers with minimal maintenance. Increased permeable landscaping and the removal of impermeable surfaces are strongly supported. Further information on these systems can be found in Camden Planning Guidance on Energy Efficiency and Adaptation and developers will be expected to have due regard to this.

8.153 Where the use of impermeable surfaces in a development is unavoidable these should be designed to drain in a sustainable way through the use of SuDS.

Sustainable drainage systems

8.154 Early consideration of Sustainable Drainage Systems (SuDS) in the design and planning of a scheme can lead to the improved integration of measures and the delivery of multi-functional benefits. Where infiltration SuDS are proposed applications will also be expected to refer to Policy NE4 (Water Quality) with regards to the protection of groundwater.

8.155 The Council will require major applications (this includes major applications involving significant works to existing buildings) to utilise SuDS to achieve greenfield run-off rates, unless it is demonstrated to the Council's satisfaction that this is not feasible. (A greenfield run-off rate is one that reflects the natural rate of water run-off from a site before it was developed.) Surface water should be managed as close to its source as possible, in line with the drainage hierarchy set out in the London Plan. Where it is not possible to achieve greenfield run-off rates, run-off rates should be as close to this as possible.

8.156 When determining the type of SuDS to use, developers should consider the importance of local ecological resources, and seek to provide multifunctional benefits such as: enhancing biodiversity, cooling, improving visual amenity, and providing attractive active walking and cycling routes, where possible. A plan for the long term maintenance of SuDS should also be submitted as part of a planning application.

8.157 When taking forward schemes involving SuDS, developers will be expected to have due regard to Camden Planning Guidance on Water and Flooding and Sustainable Drainage Systems: Non-Statutory Technical Standards. Further information on SuDS is also available on Susdrain.

Drainage reports

8.158 A drainage report should be submitted with all applications for major development, basement development, and other flood-vulnerable development (such as homes, health services, residential institutions and education) in areas identified at risk of flooding. The drainage report should include:

- identification of flood risk;
- assessment of existing run-off, and greenfield run-off rates;
- calculation of attenuation volume in m3, in order to achieve greenfield run-off rates;
- identification of measures, in line with the drainage hierarchy, to reduce run-off rates; and
- details of proposed run-off rates.

8.159 When preparing a drainage report, developers will be expected to have due regard to the Council's SuDs advice note and 'Drainage pro-forma' available on the Council's website.

Counters Creek

8.160 The Counters Creek catchment extends across several boroughs north of the River Thames, including the Royal Borough of Kensington & Chelsea, the City of Westminster and the boroughs of Hammersmith and Fulham, Brent, Ealing, and Camden. The catchment comprises an area of approximately 85 km2, of which 18% is within Camden.

8.161 The Camden Strategic Flood Risk Assessment notes there is a greater risk of flooding to people and property in the downstream reaches of the Counters Creek catchment area compared to the upstream catchment, which covers part of Camden (see the Planning Policy Map for the extent of the geographical coverage in Camden).

8.162 Applications for basement development and other development vulnerable to flooding in areas identified at risk of flooding in the Counters Creek catchment area, should therefore seek to reduce surface water run-off rates to be as close to the greenfield run-off rate as feasible.