



London Borough of Merton

Explanatory Note: Approaches to Sustainable Design and Construction

November 2023

Version 3.0

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1. PURPOSE OF THIS EXPLANATORY NOTE

The purpose of this note is to provide guidance on the approach for sustainable design and construction for domestic, non-domestic and mixed-use developments in Merton, in accordance with the requirements set out in Policy CS15 (Climate Change) of Merton's Core Planning Strategy (2011)¹ and Chapter 9 Sustainable Infrastructure of the Mayor's London Plan (2021)².

2. BACKGROUND

Merton's Core Planning Strategy (2011) is underpinned by a robust evidence base³, including the Sustainable Design and Construction Evidence Base and Merton's Affordable Housing Viability Study 2010⁴ undertaken by Adams Integra.

Merton's Core Strategy was the subject of extensive consultation throughout its preparation and an independent examination in February 2011. In June 2011 the council received the Inspector's binding Report which found Merton's Core Strategy sound.

3. POLICY CONTEXT

3.1 Merton's Core Strategy 2011

Policy CS15 (Climate Change) states as follows:

All minor and major development, including major refurbishment, will be required to demonstrate the following unless developers can robustly justify why full compliance with the policy requirements is not viable:

- a. How it makes effective use of resources and materials, minimises water use and CO₂ emissions;
- b. How development proposals are making the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy:
 - i. Be lean: use less energy
 - ii. Be clean: supply energy efficiently
 - iii. Be green: use renewable energy
- c. How it is sited and designed to withstand the long-term impacts of climate change, particularly the effect of rising temperatures on mechanical cooling requirements;
- d. Regeneration plans in town centres are an excellent opportunity to implement District Heat and Power networks, and all major development would be strongly encouraged to be 'Multi Utility Services Company (MUSCo) ready where viable and actively contribute to the networks where possible;
- ~~e. We will require all new development comprising the creation of new dwellings to achieve Code for Sustainable Homes Level 4; *~~
- f. All non-domestic development over 500m² which does not qualify for assessment under Code for Sustainable Homes will be expected to be built to a minimum of BREEAM (Building Research Establishment Assessment Method) Very Good standard and meet CO₂ reduction targets in line with the requirements of the London Plan or national policy, whichever is the greater.

¹ London Borough of Merton Core Planning Strategy (2011) - https://www2.merton.gov.uk/2011-07-13_merton_core_strategy_adopted.pdf

² London Plan (2021): Chapter 9: Sustainable Infrastructure – <https://www.london.gov.uk/programmes-strategies/planning/london-plan/new-london-plan/london-plan-2021>

³ Local Plan Evidence Base - <http://www.merton.gov.uk/environment/planning/planningpolicy/localplan/planningresearch.htm>

⁴ London Borough of Merton: Affordable Housing Viability Study - https://www.merton.gov.uk/assets/Documents/0332%20lb_merton_-_viability_study_final_report_2010.pdf

*Code for Sustainable Homes - In accordance with the Government Ministerial Statement of 25 March 2015, new residential developments in the borough granted planning permission after 25 March 2015 are no longer required to achieve a specified level of the Code for Sustainable Homes. However, Merton will continue to enforce mandatory minimum requirements for energy performance and water efficiency for the delivery of new residential units across the borough as set out in section 4.1 below.

3.2 Changes to National & Regional policy

In March 2021, the Mayor of London adopted the new [London Plan 2021](#). Chapter 9 'Sustainable Infrastructure' of the London Plan (2021) introduced a number of changes for development in London which have been reflected in the guidance below.

On 15 June 2022, national building regulations were updated to enhance energy performance standards for new buildings through Part L 2021. A new Part O 2021 was also introduced, updating requirements to tackle overheating.

The [Mayor of London's Energy Assessment Guidance \(2022\)](#) has been updated to explain how London Plan policy should be applied now that these regulations have taken effect.

3.3 Future Policy Changes in Merton

3.3.1 National Policy

Part L 2021 is a stepping-stone towards the Future Homes Standard and Future Buildings Standard which the Government is expected to consult on in 2023 and introduce in 2025.

This guidance will be reviewed and updated once any changes to national policy have been adopted.

3.3.2 Local Plan Policies

Merton Council is currently in the process of developing a [new Local Plan](#) which is due to be adopted in 2024. Merton's draft Climate Change policies have been reviewed following the Council's declaration of a Climate Emergency in July 2019 to ensure that they are consistent with Merton's carbon reduction target of becoming a carbon neutral borough by 2050 as set out in [Merton's Climate Strategy & Action Plan](#) (2020).

Updated guidance will be provided following the adoption of Merton's new Local Plan.

4. APPLICATION OF THE POLICY

Variable targets and policy requirements are applied to new development in Merton in accordance with the type and quantum of development to be delivered. The requirements for the main development types are outlined in sections 4.1 to 4.3, below. The **supporting evidence** required at planning and pre-occupation stage for different development types are set out in sections 5 and 6 respectively.

All information and carbon dioxide emissions calculations should be calculated and submitted in accordance with the methodology outlined in the GLA's [Energy Planning Guidance](#). The GLA's cover note, Part L 2021 technical FAQs, Energy Assessment Guidance 2022 and Carbon Emissions Reporting Spreadsheet 2022 provide more details; these are available at <https://www.london.gov.uk/programmes-strategies/planning/planning-applications-and-decisions/pre-planning-application-meeting-service/energy-planning-guidance>.

4.1 Domestic

All new developments comprising the creation of new dwellings must include a sustainability statement within the Design & Access Statement, or a standalone statement (depending on the size of the development), inclusive of an energy assessment, that details how the development proposal will comply with Merton's Core Planning Strategy Policy CS15 Climate Change (parts a-e) and the policies outlined in Chapter 9 of the new London Plan 2021.

The submitted statement should detail how the development will:

- Achieve internal water usage rates not in excess of 105 litres per person per day.
- Make the fullest contribution to minimising carbon dioxide emissions in accordance with the Mayor's energy hierarchy (be lean; be clean; be green; be seen) outlined in Policy SI2 of the London Plan 2021, and Policy CS15 part b of Merton's Core Planning Strategy.
 - a) Be Lean – maximise energy and carbon savings through a 'fabric first' approach before seeking to address any shortfall in performance through the use of low carbon and renewable technologies.
 - b) Be Clean – exploit local energy resources and supply energy efficiently through communal and district heat networks when appropriate.
 - c) Be Green – maximise on-site renewable energy generation regardless of whether the minimum on-site target has already been achieved. Developers will need to provide all relevant supplementary evidence requirements for any proposed technologies as set out in Section 10 and Appendix 2 of the GLA's [Energy Assessment Guidance](#).
 - d) Be Seen – monitor energy use post-construction to ensure that the actual carbon performance of the development is aligned with the Mayor's net-zero carbon target.
- Maximise carbon savings at all stages of the energy hierarchy set out above whether the minimum on-site target has already been achieved or not. The statement should summarise all the measures proposed at each stage of the energy hierarchy. The relevant minimum onsite carbon dioxide emissions reduction targets are set out in sections 4.1.1 and 4.1.2 below.
- Use low carbon heat - Given the drive for decarbonisation, developers should use a low carbon heating system (e.g. heat pumps) wherever possible to avoid the need for expensive retrofit before 2050. In line with the GLA's guidance, direct electric heating will not be accepted in the majority of cases as it will not provide any on-site carbon savings in line with the energy hierarchy, and it is likely to result in higher energy bills and increase the risk of fuel poverty for occupants. Developers will be expected to use low carbon heating systems unless they can demonstrate that it is not feasible to do so.
- Be designed to withstand the long-term impacts of climate change, particularly the risk of overheating - Developers are recommended to complete the [Good Homes Alliance \(GHA\) Early Stage Overheating Risk Tool](#) using the accompanying [guidance](#) in order to ensure that the risk of overheating has been mitigated.

Sections 5 and 6 set out the **supporting evidence** which will need to be provided at planning and pre-occupation stage respectively.

4.1.1 Minor (1-9 units)

Minor development proposals should provide a sustainability statement (either within the Design and Access Statement or a standalone statement), outlining how the development will maximise carbon savings at all stages of the Mayor's energy hierarchy as set out in section 4.1 above⁵.

4.1.2 Major (>9 units)

Major development proposals should submit a standalone energy statement detailing how the development will demonstrate compliance with the Mayor's Zero Carbon target outlined in Policy SI2 of the London Plan 2021 and mitigate overheating and reduce cooling demand in line with Policy SI4 of the London Plan 2021. The statement should be prepared in line with the GLA's [Energy Assessment Guidance](#).

In addition to meeting all the requirements set out in section 4.2, all major residential development proposals must demonstrate how the development will:

- Make the fullest contribution to achieving the GLA's **zero carbon target** onsite. In line with the GLA's Energy Planning Guidance, as a minimum, the proposed development will need to achieve no less than a **35% reduction** in regulated carbon dioxide emissions (beyond Buildings Regulations Part L 2021) on-site but should aim to achieve a **50% reduction** beyond Part L 2021. However, developers will be expected to demonstrate that on-site savings have been maximised at all stages of the energy hierarchy whether the minimum target has already been exceeded or not.
- Achieve at least a 10% improvement against Part L 2021 through energy efficiency alone in line with the [GLA's Guidance on preparing energy assessments](#) wherever possible. Meeting this energy efficiency target against Part L 2021 may now be more challenging initially, but it is essential that planning applicants reduce energy demand as far as possible to avoid high energy bills for occupants.
- Offset the remaining regulated carbon dioxide emissions (up to **100% improvement** on Part L 2021) through a cash in lieu contribution. Please note that a cash in lieu contribution will only be considered acceptable in instances where it has been clearly demonstrated that no further savings can be achieved on-site. Any carbon offset contribution is to be secured via Section 106 agreement and is payable upon commencement of the scheme. See section 4.4 of this guidance note for further information on the methodology for calculating cash in lieu contributions.
- Minimise unregulated carbon emissions from any part of the development, including plant and equipment; unregulated emissions should be reported separately to regulated emissions within the energy assessment.
- Be future-proofed to achieve zero-carbon emissions on-site by 2050.
- Monitor, verify and report on energy performance during the operation of the scheme in line with the [GLA's 'Be Seen' Energy Monitoring Guidance](#).
- Mitigate the risk of overheating - Developers will be expected to complete and submit the Good Homes Alliance (GHA) Early Stage Overheating Risk [Tool](#). Schemes may be required to undertake dynamic overheating modelling in line with the guidance and data sets in CIBSE

⁵ The Code for Sustainable Homes Level 4 requirement for minor residential schemes, which equated to a 19% reduction in carbon emissions beyond Part L 2013, is exceeded by the new Part L 2021 standards. The new minimum requirement for minor schemes is therefore to meet the Part L 2021 standards. However, all minor schemes are expected to maximise carbon savings at all stages of the Mayor's energy hierarchy beyond the Part L requirements.

TM52 and TM49 respectively and provide evidence of how the development performs against the overheating criteria as per the GLA's Energy Assessment Guidance.

The emissions data should be displayed in the energy assessment and the GLA's Carbon Emissions Reporting Spreadsheet in accordance with the [GLA's Energy Planning Guidance](#); this should include:

- A breakdown of the anticipated carbon dioxide emissions in tonnes at each stage of the energy hierarchy⁶; and
- A breakdown of the percentage reduction in regulated carbon dioxide emissions achieved at each level of the energy hierarchy.

4.1.3 *Multi-residential schemes*

All development proposals that include multiple residential units must include a clear explanation of the dwellings that have been modelled for both energy assessments and overheating assessments. If the developer proposes to use a sub-sample of units, the emissions for the development as a whole must be calculated using a representative sample of the dwelling types contained within the development (i.e. ground floor, mid floor, top floor units), and a clear explanation of the approach adopted must be provided as part of the planning application.

The energy statement will need to clearly set out how the emissions for the sample units have been scaled up to calculate the emissions for the development as a whole using the GLA's Carbon Reporting Spreadsheet. The SAP outputs for all the sample units will need to be provided.

4.1.4 *Conversions, change of use and extensions to create new dwellings*

All development proposals where an existing building is being converted to create a new dwelling, or dwellings, should provide a standalone energy statement.

For development proposals consisting of the refurbishment of an existing building with a new build extension, the carbon dioxide savings for the new and refurbished elements ***should be presented separately*** within the energy statement. The energy statement should clearly set out how the different elements of the development have been assessed against Part L1 (i.e., existing vs new thermal elements), and detail how the new build element is performing against current standards.

For major refurbishments where the existing buildings will be gutted and renovated, the development should be assessed against the Part L1 standards for new dwellings. Similarly, standalone new build extensions should be assessed against the Part L1 standards for new dwellings.

Where existing buildings are retained and refurbished, existing thermal elements should be assessed against the improved u-values in Table 4.3(b) of Part L1 unless the existing building element has a more efficient specification than this, in which case the actual performance should be used. Any new thermal elements within an existing building should be assessed against the specification set out in Table 4.2 of Part L1. The % improvement against Part L will be determined by comparing the baseline Dwelling Emission Rate (DER) and the as designed/ as built Dwelling Emission Rate (DER).

Further guidance on the methodology for demonstrating compliance with the regulated carbon dioxide emissions requirements are detailed in Section 6 and Appendix 3 of [the GLA's Energy Planning Guidance 2022](#).

⁶ The GLA's Part L 2021 technical FAQs provide a step-by-step approach to report CO2 emissions at each stage of the energy hierarchy. Available at: <https://www.london.gov.uk/programmes-strategies/planning/planning-applications-and-decisions/pre-planning-application-meeting-service/energy-planning-guidance>

This approach may be applied to alterations to existing dwellings and extensions, and to domestic conversions and change of use projects (e.g., where a new dwelling is formed by change of use from a building that was not previously used for domestic purposes; the conversion of a single dwelling into multiple dwellings, or where several dwellings are converted into a single dwelling).

4.2 Non-Domestic

4.2.1 Minor (<500m² GIA)

Minor non-domestic developments in Merton are classified as those with less than 500m² gross internal area (GIA).

There are no specific energy requirements for non-domestic minor developments beyond Part L 2021 Building Regulations requirements, **unless** the non-domestic development comprises part of a major mixed-use scheme. In which case they will need to comply with the requirements for major schemes set out in section 4.2.2 below.

For further information please refer to section 4.3 on Mixed Use developments.

4.2.2 Major (>500m² GIA)

Major non-domestic developments in Merton are classified as those with a gross internal area (GIA) equal to or greater than 500m² of non-domestic space.

All major non-domestic development proposals should submit a standalone sustainability statement, inclusive of an energy assessment, detailing how the development will demonstrate compliance with Policy CS15 (parts a-d & f) of Merton's Core Planning Strategy and the policies outlined in Chapter 9 of the new London Plan (2021). The sustainability statement should be prepared in line with the [GLA's Energy Planning Guidance](#), and should specify the scale of the development (i.e. the proposed GIA).

All such major development proposals must demonstrate how the development will:

- Achieve a high standard of sustainability and make efficient use of resources and material and minimise water use and carbon dioxide emissions.
- Be built to a minimum of BREEAM New Construction (2018) 'Very Good' standard.
- Make the fullest contribution to minimising carbon dioxide emissions in accordance with the Mayor's energy hierarchy (be lean; be clean; be green; be seen) outlined in Policy SI2 of the London Plan 2021, and Policy CS15 part b of Merton's Core Planning Strategy. This advocates a 'fabric first' approach to maximising energy efficiency before seeking to address any shortfall in performance through the use of renewable technologies.
 - a) Be Lean – achieve at least a 15% improvement against Part L of the Building Regulations 2021 through energy efficiency alone wherever possible⁷. Developers should confirm the anticipated energy demand (in MWh/year) for each building use.
 - b) Be Clean – exploit local energy resources and supply energy efficiently through communal and district heat networks when appropriate.

⁷ As set out in the GLA's guidance, initially, non-residential developments may find it more challenging to achieve significant on-site carbon reductions beyond Part L 2021 to meet both the energy efficiency target and the minimum 35 per cent improvement. This is because the new Part L baseline now includes low carbon heating for non-residential developments but not for residential developments. However, planning applicants will still be expected to follow the energy hierarchy to maximise carbon savings before offsetting is considered.

- c) Be Green - maximise on-site renewable energy generation regardless of whether the minimum on-site target has already been achieved. Developers will need to provide all relevant supplementary evidence requirements for any proposed technologies as set out in Section 10 and Appendix 2 of the GLA's [Energy Planning Guidance](#).
 - d) Be Seen - monitor, verify and report on energy performance during the operation of the scheme in line with the [GLA's 'Be Seen' Energy Monitoring Guidance](#).
- Achieve no less than a **35% reduction¹¹** in regulated carbon dioxide emissions (beyond Buildings Regulations Part L 2021) on-site. However, please note that developers will be expected to demonstrate that they have maximised carbon savings at all stages of the energy hierarchy set out above whether the minimum target has already been achieved or not. The statement should summarise all the measures proposed at each stage of the energy hierarchy.
 - Offset the remaining regulated carbon dioxide emissions (up to **100% improvement** on Part L 2021) through a cash in lieu contribution. Please note that a cash in lieu contribution will only be considered acceptable in instances where it has been clearly demonstrated that no further savings can be achieved on-site. Any carbon offset contribution is to be secured via Section 106 agreement and is payable upon commencement of the scheme. See section 4.4 of this guidance note for further information on the methodology for calculating cash in lieu contributions.
 - Minimise unregulated carbon emissions from any part of the development, including plant and equipment; unregulated emissions should be reported separately to regulated emissions within the energy assessment.
 - Use low carbon heat - Given the drive for decarbonisation, developers should use a low carbon heating system (e.g. heat pumps) wherever possible to avoid the need for expensive retrofit before 2050. In line with the GLA's guidance, direct electric heating will not be accepted in the majority of cases as it will not provide any on-site carbon savings in line with the energy hierarchy, and it is likely to result in higher energy bills and increase the risk of fuel poverty for occupants. Developers will be expected to use low carbon heating systems unless they can demonstrate that it is not feasible to do so.
 - Be future-proofed to achieve zero-carbon emissions on-site by 2050.
 - Mitigate the risk of overheating - Schemes may be required to undertake dynamic overheating modelling in line with the guidance and data sets in CIBSE TM52 and TM49 respectively and provide evidence of how the development performs against the overheating criteria as per the GLA's Energy Assessment Guidance.

The emissions data should be displayed in the sustainability statement and the GLA's Carbon Reporting Spreadsheet in accordance with the GLA's Energy Planning Guidance; this should include:

- a) A breakdown of the anticipated carbon dioxide emissions in tonnes at each stage of the energy hierarchy⁸; and
- b) A breakdown of the percentage reduction in regulated carbon dioxide emissions achieved at each level of the energy hierarchy.

⁸ The GLA's Part L 2021 technical FAQs provide a step-by-step approach to report CO2 emissions at each stage of the energy hierarchy. Available at: <https://www.london.gov.uk/programmes-strategies/planning/planning-applications-and-decisions/pre-planning-application-meeting-service/energy-planning-guidance>

Sections 5 and 6 set out the **supporting evidence** which will need to be provided at the planning and post-construction stages respectively.

4.3 Mixed Use

Mixed use developments that comprise either more than nine residential units or over 500m² of non-domestic floor space (GIA) will be classified as a major mixed-use application. The respective domestic and non-domestic elements should therefore be designed in accordance with the requirements for major development proposals, as outlined in section 4.1.2 and 4.2.2 of this document.

For the application to be deemed compliant, carbon dioxide reduction calculations will need to be provided for the domestic and non-domestic elements of the development, and for the site as a whole. The domestic and non-domestic emissions should be presented separately within the energy statement.

4.4 Cash in Lieu Contributions

Cash in lieu contributions may be collected by way of an offset payment for any development that fails to achieve the necessary emissions reductions onsite or does not secure the zero carbon performance required for major development proposals (in accordance with the methodology outlined in the GLA's Energy Assessment Guidance). Cash in lieu contributions will only be accepted where the Council is satisfied that on-site savings have been maximised.

The methodology requires that each tonne of carbon dioxide shortfall is offset at a cost of £95 per tonne for a period of 30 years, as detailed in the below formula:

$$\text{Carbon shortfall (tonnes of CO}_2\text{e)} \times \text{£95 per tonne CO}_2\text{e} \times 30 \text{ years} = \text{Offset Payment}$$

The requirement to pay a financial contribution is subject to viability. If it is not viable to provide the required cash in lieu contribution the onus will lie with the applicant to demonstrate, through the submission of a viability appraisal, the level of contribution that is viable. Applicants will be required to submit all the inputs and assumptions used to assess viability of the proposed scheme through an open book approach.

Where it is deemed appropriate, the Council will subject an applicant's proposals and submitted viability assessment(s) to independent examination and may seek payments from applicants for the costs of the independent examination.

4.5 Opportunities for Decentralised Energy Networks

Major development proposals (domestic, non-domestic and mixed-use) are encouraged to be 'Multi Utility Service Company' (MUSCo) ready and explore opportunities for connection to district heat networks, in accordance with Merton's Core Planning Strategy Policy CS15 (part d); Policy DM EP1 of Merton's Sites and Policies Plan (2014)⁹, and Policies SI2 and SI3 of the new London Plan (2021).

⁹ Merton Sites and Policies Plan (2014): Policy DM EP1 Opportunities for Decentralised Heat Networks - <https://www.merton.gov.uk/planning-and-buildings/planning/sites-and-policies-plan-and-policies-maps>

Heat-mapping and feasibility studies undertaken by AECOM in 2017¹⁰ /2018¹¹ identified two district heat network opportunity areas in Merton linked to two major regeneration schemes: Morden town centre and South Wimbledon (High Path estate). Any development occurring within these identified opportunity areas should fully investigate the scope for connection to current or planned district heating networks, where viable, and should commit to providing a site-wide heating network, suitable for connection to wider district networks now or in the future.

Further information on district heat potential is available via the GLA's interactive [London Heat Map](#).

Given that the carbon savings from gas engine combined heat and power (CHP) systems are declining due to the decarbonisation of the national electricity grid, and increasing evidence of adverse air quality impacts, developers will be required to consider low and zero carbon heat sources.

Any development proposing to utilise large scale decentralised energy, whether through the use of a communal heat pump or by connection to a district heat network, will need to demonstrate that they have referred and adhered to the technical design principles and concepts outlined in the GLA's [London Heat Network Manual II](#), to enable connection to a current or future district heating network. Developers will need to provide the information set out in Sections 5 and 6 below.

5. PLANNING STAGE EVIDENCE REQUIREMENTS

At the planning stage, all proposals resulting in the creation of one or more new dwellings or 500m² GIA should submit the relevant evidence set out below to support the sustainability statement.

5.1 Domestic

5.1.1 Carbon emissions

- 'As Designed' SAP Compliance Reports and detailed DER and TER worksheets for the proposed development for each stage of the energy hierarchy¹²;
- The Carbon Emissions Reporting spreadsheet (available [here](#)); **AND**
- Supporting evidence relating to renewable technologies and / or decentralised energy where applicable as set out in section 5.3 and 5.4 below.

5.1.2 Water efficiency

- A Water Efficiency Calculator for New Dwellings, representing the dwellings 'As Designed', demonstrating that the proposed dwelling(s) will achieve internal water consumption rates of no greater than 105 litres per person per day.

5.2 Non-Domestic

5.2.1 Carbon emissions

- 'As Designed' BRUKL Compliance Reports and detailed BER and TER worksheets for the proposed development for each stage of the energy hierarchy¹³;
- The Carbon Emissions Reporting spreadsheet (available [here](#)); **AND**
- Supporting evidence relating to renewable technologies and / or decentralised energy where applicable as set out in section 5.3 and 5.4 below.

¹⁰ AECOM (2017) District Heating Feasibility – Phase 1: Heat Mapping and Energy Masterplanning (https://www.merton.gov.uk/assets/Documents/www2/merton_heatmapping_study_fullreport.pdf).

¹¹ AECOM (2018) District Heating Feasibility – Phase 2: Developments and Financial Modelling (<https://www.merton.gov.uk/assets/Documents/www2/Merton%20DH%20Financial%20Modelling%20Report%20FINAL.pdf>).

¹² Full SAP outputs will need to be provided. RdSAP is not sufficient.

¹³ Full SAP outputs will need to be provided. RdSAP is not sufficient.

5.2.2 BREEAM

- A **BREEAM design stage certificate** demonstrating that the proposed development will achieve a BREEAM rating of no less than 'Very Good' standard, for development proposals requiring a BREEAM Assessment.

5.3 *Renewable and low carbon technologies*

5.3.1 Solar PV

Any development proposing the use of solar PV must provide:

- A roof plan showing the proposed layout of solar PV; **AND**
- The sustainability statement should confirm the roof area proposed for solar PV, the proposed solar PV capacity, and an estimate of the electricity that the photovoltaic modules will generate.

5.3.2 Air Source Heat Pumps

Where the use of air source heat pumps (ASHPs) is considered appropriate, a high specification of energy efficiency will be expected to ensure the system operates efficiently and to reduce peak electricity demand. The following information will also be required:

- Clarification as to how the ASHP will operate alongside any other heating/cooling technologies being specified for the development (i.e. how will the ASHP operate alongside communal heating systems, solar thermal, etc. if they are also being proposed by the applicant);
- Whether any additional technology is required for top up or during peak loads (e.g. confirming the approach to generating hot water and the integration of thermal storage) and how this has been incorporated into the energy modelling assumptions;
- An estimate of the heating and/or cooling energy the ASHP would provide to the development and the electricity the heat pump would require for this purpose;
- Details of the Seasonal Coefficient of Performance (SCOP) and Seasonal Energy Efficiency ratio (SEER) which has been calculated for the energy modelling. This should be based on a dynamic calculation of the system boundaries over the course of a year i.e., incorporating variations in source temperatures and the design sink temperatures (for space heat and hot water). Details of the assumptions should be included in the energy assessment, including manufacturer datasheets showing performance under test conditions for the specific source and sink temperatures of the proposed development and assumptions for hours spent under changing source temperatures;
- The expected heat source temperature and the heat distribution system temperature with an explanation of how the difference will be minimised to ensure the system runs efficiently. The distribution loss factor should be calculated based on the above information and used for calculation purposes;
- Evidence that the heat pump complies with the minimum performance standards as set out in the Enhanced Capital Allowances (ECA) product criteria for the relevant ASHP technology;
- Evidence that the heat pump complies with other relevant issues as outlined in the Microgeneration Certification Scheme Heat Pump Product Certification Requirements document at: <http://www.microgenerationcertification.org>;
- A calculation of the CO₂ savings that may be realised through the use of this technology;
- An estimate of the expected heating costs to occupants, demonstrating that the costs have been minimised through energy efficient design;

- Confirmation that end-users will be supplied with regular information to control and operate the system e.g., at point of occupancy and maintenance visits; **AND**
- A commitment to monitor the performance of the heat pump system post-construction to ensure it is achieving the expected performance approved during planning.

Developments proposing to use any other renewable / low carbon technologies (e.g., ground or water source heat pumps) will need to provide the evidence requirements set out in Appendix 2 of the GLA's Energy Assessment Guidance.

5.4 Decentralised Energy

Any development proposing to utilise large scale decentralised energy, whether through the use of a communal heat pump or by connection to a district heat network, will need to demonstrate compliance with the technical standards set out in the [London Heat Network Manual II](#) to enable future connection to a district heating network.

The London Heat Network Manual II provides guidance for applicants and designers and should be consulted on matters associated with:

- information on designing developments to allow connection to District Heat Networks (DHNs); and
- key design considerations for the generation, transmission, and consumption equipment for DHNs such as:
 - various heat sources including hybrid systems;
 - primary and secondary heat distribution network design and key characteristics (e.g., flow and return temperatures) to optimise operation and reduce losses and overheating risk;
 - the approach to be taken when specifying pipework insulation;
 - and thermal storage provision.

The following evidence will need to be provided:

- Information on the proposed heating system, including datasheets and plans confirming the proposed heating system specification;
- A scale drawing of the proposed plant room and layout, including space requirements for heat exchangers, in accordance with the minimum plant room specification requirements detailed in Table 6 'General indicative space requirements for heat exchange substation equipment for building plant rooms' in the London Heat Network Manual II;
- Information on the proposed heat distribution system and its operating temperatures, as well as any heat sources or sinks. Developments will need to demonstrate how return temperatures have been minimised.
- Confirmation of the proposed heat network parameters in line with Table 8 'Heat network parameters' in the London Heat Network Manual II.

6. POST-CONSTRUCTION EVIDENCE REQUIREMENTS

Sustainable design and construction performance requirements will typically be secured through planning condition(s). This is usually applied at the pre-occupation stage (although pre-commencement conditions may also be applied in certain instances) with evidence of performance standards being submitted to the Local Authority for approval before the condition can be discharged. The wording and associated evidence requirements of a condition will vary in accordance with the type of development proposal (e.g., major/minor domestic, non-domestic or mixed-use development).

Typical sustainable design and construction evidence requirements have been summarised below for reference.

Please note: applicants should refer to the specific condition(s) and informative(s) that have been applied to their development proposal, as detailed in the issued Decision Notice, following planning approval.

6.1 Domestic

6.1.1 Carbon emissions

Evidence requirements for domestic post construction stage assessments must provide:

- 'As Built' SAP Compliance Reports and detailed DER and TER worksheets for the as built development. The output documents must be based on the 'as built' stage of analysis and must account for any changes to the specification during construction. The outputs must be dated and include the accredited energy assessor's name and registration number, the assessment status, plot number and development address. For the conversion or change of use of an existing building to create one or more new dwelling, a baseline DER Worksheet and 'As Built' DER worksheet should be provided for each dwelling. **AND**, where applicable:
- The completed Carbon Emissions Reporting Spreadsheet (available [here](#)); **AND**, where applicable:
- MCS certificates and photos of all installed renewable technologies.

6.1.2 Water efficiency

Evidence requirements for domestic post construction stage assessments must provide:

- Water Efficiency Calculator for New Dwellings, representing the dwellings 'As Built', demonstrating that the dwelling(s) has achieved internal water consumption rates of no greater than 105 litres per person per day; **AND**
- Detailed documentary evidence representing the dwellings 'As Built' showing:
 - the location, details and type of appliances/ fittings that use water in the dwelling (including any specific water reduction equipment with the capacity / flow rate of equipment); **AND**
 - the location, size and details of any rainwater and grey-water collection systems provided for use in the dwelling.

6.2 Non-domestic

6.2.1 Carbon emissions

Evidence requirements for non-domestic post construction stage assessments must provide:

- A copy of the Building Regulations Output Document from the approved software. The output documents must be based on the 'As Built' stage of analysis and must account for any changes to the specification during construction;
- The completed Carbon Emissions Reporting Spreadsheet (available [here](#)); **AND**, where applicable:
- MCS certificates and photos of all installed renewable technologies.

6.2.2 BREEAM

Evidence requirements for post construction stage assessments for non-domestic schemes of 500m² GIA or more must provide:

- A final **BREEAM certificate** demonstrating that the development has achieved a BREEAM rating of no less than 'Very Good' standard, for development proposals requiring a BREEAM Assessment.

7. FURTHER INFORMATION AND GUIDANCE

GLA guidance:

- Chapter 9 London Plan (2021) - https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf
- GLA Energy Planning Guidance - <https://www.london.gov.uk/programmes-strategies/planning/planning-applications-and-decisions/pre-planning-application-meeting-service/energy-planning-guidance>
- London Heat Network Manual II (2021) - <https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/energy/london-heat-network-manual-ii>

Merton guidance:

- Merton Core Planning Strategy (2011) – Policy CS15 (Climate Change) https://www.merton.gov.uk/assets/Documents/0328_merton_core_strategy_adopted.pdf
- Merton Sites and Policies Plan (2014): Policy DM EP1 Opportunities for Decentralised Heat Networks - https://www2.merton.gov.uk/merton_sites_and_policies_part_1_policies_jul14.pdf

Other guidance:

- BREEAM UK – www.breeam.co.uk
- Good Homes Alliance Overheating in New Homes Guidance (2019) - <https://goodhomes.org.uk/overheating-in-new-homes>