Householder Guide to the Greening SPD

June 2021

THE ROYAL BOROUGH OF
KENSINGTON
AND CHELSEA

Key information about this Guide

What is the Householder Guide to the Greening SPD?	The Council has produced a Greening Supplementary Planning Document (SPD) described below. Whilst consulting on a draft of this SPD, residents indicated that they would find it helpful to have a short guide for householders, so they do not need to read through the entire SPD, which focuses mainly on new build developments. We have produced this guide in response to that request to assist householders looking at undertaking upgrades to their homes that save energy and are green. The aim is to provide best practice guidance for undertaking such projects. This Guide sits alongside the Greening SPD with further detail set out in the SPD.
What is the Greening SPD?	The Greening SPD has been written so that new and existing buildings can deliver the best possible standards to reduce harmful carbon emissions. It covers a range of planning policies and guidance to improve energy standards, reduce pollution, promote future clean technologies, minimise flood risk, deliver urban greening and biodiversity net gain.

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1 Introduction

1.2 Climate Change is one of the greatest challenges of our times and in October 2019, the Council declared a Climate Change Emergency. The Council is committed to reduce carbon emissions not only through its own operations but also tackling this challenge holistically. This means that there must be a step change in how we, and our businesses, residents and local organisations, operate so that the Council is carbon-neutral by 2030 and that the Borough can become carbon-neutral by 2040.

1.3 Our planning policies are part of this holistic approach and must promote and require best practice in the built environment. Our Greening Supplementary Planning Document (SPD) covers all facets of planning that can contribute towards reducing carbon emissions and promoting a healthier borough. It includes guidance on our energy policies both for new build and retrofitting the substantial historic stock that we have, guidance on the reduction of toxic emissions and controlling air pollution, urban greening, flooding and biodiversity.

1.4 This guidance sits alongside the Greening SPD and focuses on matters that are applicable to householders in a shortened and simplified format. The Householder Guide to the Greening SPD is not a statutory planning document and is only intended to be used as a guidance document.

1.5 Not all householder projects will require planning permission. This will depend on the nature of the work and the property. Historic buildings and properties located in conservation areas require planning permission for a wider range of projects than buildings without historic status or conservation considerations.

How to find out if your project needs planning permission

1.6 To determine if your project requires planning permission please refer to the *Do you need permission?* page of the planning portal using the link below. The planning portal provides thorough guidance on common householder projects through interactive guides and clearly outlines what needs to be considered at each stage of a project.
https://www.planningportal.co.uk/info/200125/do_you_need_permission

What to do if you need planning permission

1.7 If your project requires planning permission, please refer to the *How to make a planning application* page of the RBKC website using the link below. This contains link to application forms and provides guidance on how these should be submitted to the Council.

https://www.rbkc.gov.uk/planning-and-building-control/planning-applications/guidance-and-advice/how-make-application/how

1.8 If your house is listed, you can find further information on the Council's website Listed buildings | Royal Borough of Kensington and Chelsea (rbkc.gov.uk). If you are at all in doubt about whether consent is needed, contact the Council's Planning Line.

1.9 If you need any help with an application or further advise, please contact the Council's Planning line on 020 7361 3012.

2 Key concepts and terms explained

Circular Economy and Whole Life Cycle Approach

The two concepts below are not a planning requirement for small scale householder applications. However, we encourage householders to understand and use these principles when looking at a whole house refurbishment or extension project.

"**Circular Economy** is one where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste. For the built environment this is about prioritising retention and refurbishment over demolition and rebuilding." For more information please refer to page 12 – 19 of the Greening SPD.

Whole Life-Cycle Approach
This approach recognises the carbon inherent in materials as well as their transport and manufacturing. Therefore, it will promote local sourcing and procurement. It will also help us reduce construction waste or enable it to be disposed of in a sustainable way. Please refer to page 20 – 24 of the Greening SPD.

Householders should reduce their construction waste and ensure that waste is recycled or disposed of in a sustainable way.

Where the project allows, enough storage area for waste disposal, including recycling should be planned for both inside and outside the building.

Energy Hierarchy

We require the energy hierarchy to inform the design, construction and operation of new buildings. However, these concepts can also apply to householder extensions and refurbishment projects. This is a sequential approach with four essential strands presented in the diagram below. The key elements are then described in more detail in the text.

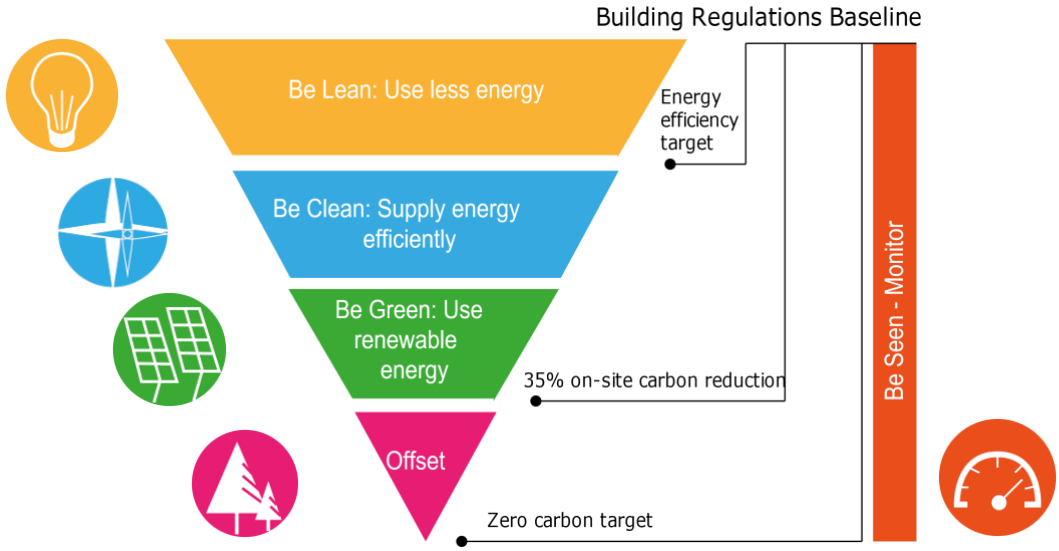

Figure 1: Energy Hierarchy showing how new buildings can meet net zero carbon by following this sequential approach

Be Lean: Reducing Energy Demand

As the first step in the sequential approach described above, energy demand of buildings can be reduced. This can be done by insulation, optimising the design of buildings to take full benefit of sun orientation or natural ventilation for example. Please refer to page 25 – 37 of the SPD for more detail.

*"**Zero carbon**: Zero carbon, requires no net release of carbon dioxide and other greenhouse gas emissions into the atmosphere. Net-zero carbon refers to balancing the amount of emitted greenhouse gases with the equivalent emissions with no reliance on fossil fuels, using on-site renewable or offsetting elsewhere as a last resort.*

Be Clean: Supply energy efficiently

This is about reducing dependency on fossil fuels and promoting more localised heat networks, but this is more relevant for larger schemes unless new technology emerges. Refer to page 38 – 41 of the SPD for more information.

Be Green: Use Renewable Energy

The Government's recent Ten Point Plan for a Green Industrial Revolution declares the phasing out of gas boilers. Section 7 of the SPD provides guidance on using alternative means such as heat pumps and other forms

of renewable energy which are suitable in the Borough such as photo voltaic solar panels. For more information please refer to page 42 - 47 of the Greening SPD.

Heat Pumps

*"**Heat pumps:** These are classed as renewable because it uses natural elements. There are two main types – air-source and ground-source heat pumps. An air-source heat pump extracts warmth from the air, it is a box that can be fixed to an exterior wall or roof or stand alone. A ground-source heat pump requires generous outside space and is buried under the soil."*

The diagram below explains how heat source pumps work.

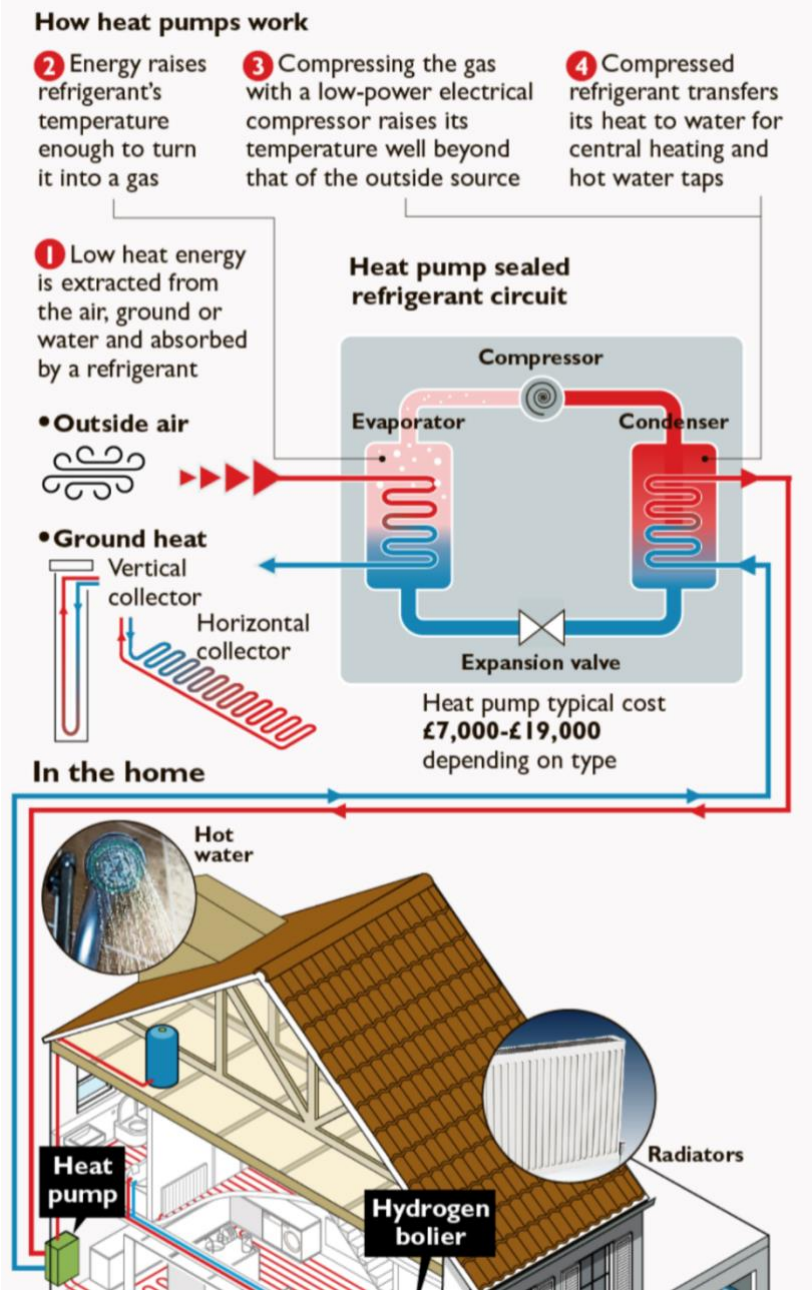

Figure 2: Working of air source and ground source heat pumps

What do I need to consider for my home?

- Broadly speaking, air source heat pumps are usually more practical to install than ground source heat pumps.
- Heat pumps are significantly cheaper to operate than direct electric heating.
- The potential noise and visual impact of air source heat pumps will need to be mitigated through careful design.
- A noise and vibration assessment will be required for air source heat pumps where planning permission is needed.

Solar PV

What is Solar PV?

A photovoltaic (PV) cell is a device that converts sunlight into electrical energy. Unlike solar thermal panels the size of the system is not limited by the building's energy demand as excess electricity can be exported to the grid. Instead, the potential for CO_2 emission improvements will be largely determined by the amount of suitable roof space that is available.

How does it work?

The PV cell has one or two layers of a semi-conducting material so when light shines on the cell it creates an electric field across the layers causing electricity to flow. The greater the intensity of sunlight the greater the flow of electricity.

1 Solar PV on a flat roof integrated with a green roof, University of Greenwich
2 Example of integrated tiled PVs

What do I need to consider for my home?

- Solar PV works best in full sunlight so consider the positioning on the roof. South facing roofs or walls are best.

- While PV may be constrained in conservation areas or on listed buildings, it is still typically possible to integrate PV where it is not visually prominent from street level.
- Consider if there is any shading from nearby buildings or trees.
- Consider the movement of the sun throughout the day and over the year. Overshadowing can impact on the overall performance.
- Proposals should maximise solar availability through their massing and roof design and by selecting heating solutions that limit competition for roof space (for example use of ground source heat pumps in place of air source heat pumps where feasible).
- There are increasingly recognised design solutions that can address competing requirements for accessible roofs or provision of green roofs alongside PV.
- Use of battery storage (batteries can be used to store the electricity generated for use later when it is needed) can help to maximise the proportion of generated electricity from solar PV that can be used on-site and reduce wider constraints in terms of connection to the distribution network. This is expected to make a further contribution as to the costs of storage reduce.

Be Seen: Monitor
We recommend householders implement smart metering into their homes to monitor their energy usage and water consumption. Refer to page 48–50 of the SPD for more detail.

Air Quality

Householders can help improve air quality by using the cooling hierarchy outlined in section 5 of the Greening SPD (please see page 36 – 37). This means using air conditioning as a last resort. The transition to electric vehicles will take place as the Government moves to start phasing out petrol/diesel vehicles. Installing electric charging points within certain parameters does not require PP. You can find out more information on page 77 of the SPD.

Urban Greening

Green infrastructure provides wide ranging benefits including reducing pollution, climate change and its impacts and supporting a circular economy. Please refer to page 81 - 97 of the SPD for more information.

***"Urban Greening:** Urban greening describes the act of adding green infrastructure elements. Due to our dense built environment, green roofs, street trees, and additional vegetation are the most appropriate elements of green infrastructure.*

Green infrastructure

The provision of green infrastructure can be as straight forward as planting grass and plants in your front or back gardens which will attract wildlife whilst also improving natural drainage. Whilst permeable paving is also good in improving drainage, it doesn't have the other benefits that natural greening can bring. Other types of green infrastructure which could be used by householders are rainwater gardens, green/blue roofs and green walls. Rainwater gardens are small deeper areas planted with local vegetation. As they may store water occasionally the plants chosen should be able to live with water. Rainwater from the roofs can be discharged into them and will enhance natural drainage. Roof water can also be managed in green/blue roofs.

Figure 3: from left to right and top to bottom: rainwater garden (*Susdrain website*[1]), green roof on Acklam Road Mosque, green wall at 32 Kensington Park Road (photo credit: photoBECKET) and green roof section profile *(Susdrain website*[2]*).*

What do I need to consider for my home?

- Space uptake for green infrastructure and interdependencies with other renewables (for example, Bio-solar" roofs that combine photovoltaics with green roofs).
- **Historic environment for green roofs and walls:** The appearance of a green roof could be considered incongruous with the building characterwhen viewed from the street. If delivered sympathetically to their context they can add support to the historic environment. Green walls are likely to need listed building consent or planning permission where they relate to designated heritage assets, and each case will be considered on its merits.
- **Structural issues:** The slope of the roof and the loading requirements of green and blue roofs mean that there may be implications for structural design.

[1] https://www.susdrain.org/delivering-suds/using-suds/suds-components/infiltration/rain-gardens.html
[2] https://www.susdrain.org/delivering-suds/using-suds/suds-components/source-control/source-control.html

- **Maintenance:** is key to ensure green infrastructure functions at its best. Light, water and soil conditions can vary throughout the year so this should be addressed. Other issues such as light pollution and fire risk should also be considered.

Private gardens – permeable surfaces.
Private front and rear gardens are very important to provide natural drainage and cooling, support biodiversity, well-being and enhance the setting of the built environment. The use of impermeable surfaces in front and rear gardens and landscaped areas should be avoided. Planning permission is required to pave an area bigger than 5 sq. m in front gardens. Planning permission is not needed in the following cases:

- if you use porous materials for paving; or,

- make provision to direct water run-off from the hard surface to a permeable or porous area or surface within your property boundary.

The Planning Portal[3], the Government[4] and Susdrain[5] have produced guidance on permeable surfacing in gardens. **Whilst porous material or permeable paving may not need planning permission, we strongly encourage householders to use natural planting where possible.** This could also have a role enhancing wildlife and reducing carbon.

Minimising Flood Risk – Refer to page 98 - 106 of the SPD for more information.

The two most prevalent flood risk sources for the Borough are surface water and sewer water. New developments should both be protected from flood risk and minimise it. Flood Risk Assessments (FRAs) will be required for householder planning applications if the site is within a designated flood risk zone (see figure 4 below). The Environment Agency has produced standing advice[6] for FRAs for minor extensions, change of use and different uses in Flood zones 2 or 3. The Government has published useful guidance on how to prepare flood risk assessments[7], how to assess them[8] and flood resilience and resistance measures[9].

[3] https://www.planningportal.co.uk/info/200130/common_projects/45/paving_your_front_garden
[4] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7728/pavingfrontgardens.pdf
[5] https://www.susdrain.org/delivering-suds/using-suds/suds-components/source-control/pervious-surfaces/pervious-surfaces-overview.html
https://www.susdrain.org/delivering-suds/using-suds/suds-components/source-control/other-permeable-surfaces/index.html
[6] https://www.gov.uk/guidance/flood-risk-assessment-standing-advice
[7] https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications
[8] https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities
[9] https://www.gov.uk/guidance/flood-risk-and-coastal-change#Flood-resilience-and-flood-resistance

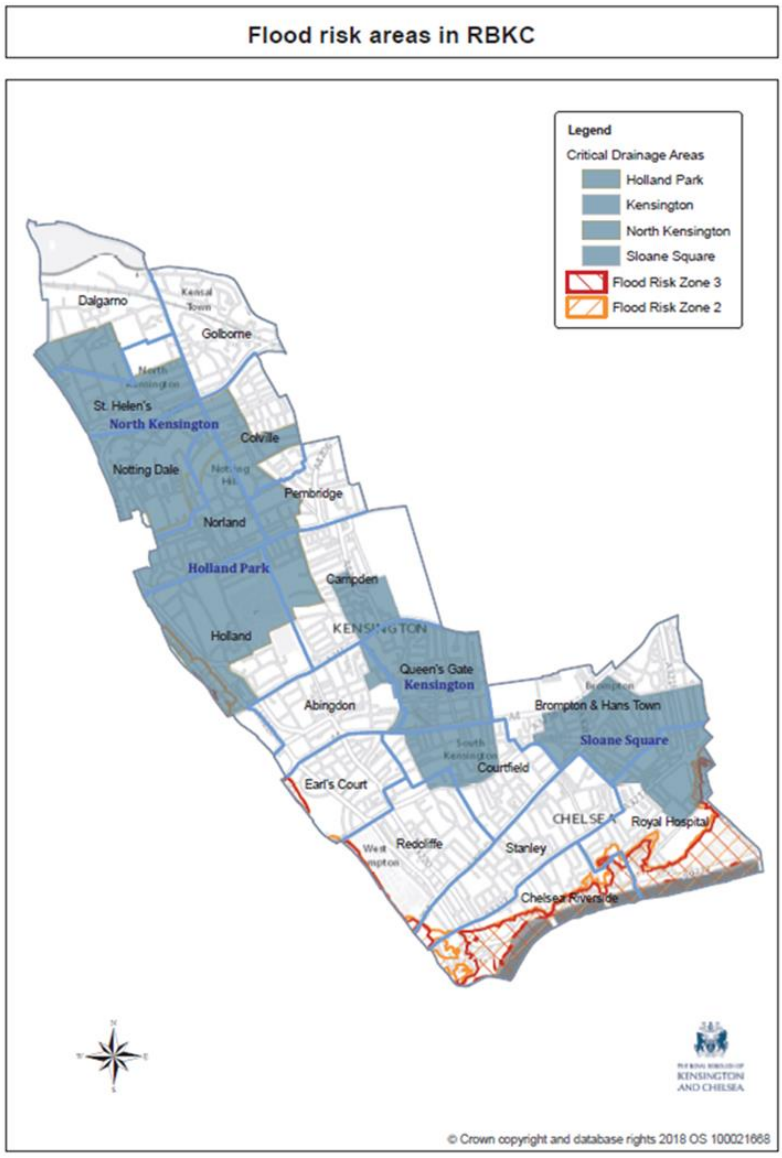

Figure 4: Flood risk areas where a flood risk assessment is required.

Sustainable Drainage Systems

The Council requires an overall reduction in surface water run off so once developed, sites will provide an improvement. Sustainable Drainage Systems (SuDS) will reduce surface water run-off rates and are required throughout the Borough for small-scale development at ground and below ground levels. In order to comply with the Council's requirements, the vegetation cover could be increased, and permeable surfaces could be implemented in front and rear gardens. Physical constraints: space, buildings layout, orientation, land uptake, soil conditions should all be considered to design the correct SuDS. A SuDS strategy should support relevant planning applications. It is encouraged that a drainage engineer is engaged to design the SuDS and ensure compliance with Building Control regulations.

The Council has specific online guidance to meet the policy[10] and explains what is required in the SuDS strategy. For more information please refer to page 105 – 114 of the Greening SPD.

Biodiversity

We are looking to use the opportunities available in new development to improve biodiversity so there is a net gain. Householders are also encouraged to consider their impact on biodiversity and take steps to mitigate any negative impacts if possible. For more information please refer to page 115 – 122 of the Greening SPD.

[10] https://www.rbkc.gov.uk/planning-and-building-control/planning-policy/flooding/sustainable-drainage-systems

3 Retrofitting existing buildings

Householders are encouraged to consider sensitive and appropriate retrofitting of traditionally constructed buildings to secure improvements in energy efficiency.

Retrofitting Existing Buildings

The table below outlines what retrofit works require planning permission, including when the property is located within a conservation area. It also outlines when listed building consent is required for retrofit works on historic properties with listed building status. For more detailed guidance on appropriate retrofitting works, please refer to page 51 – 71 of the Greening SPD.

Key		
Acceptable and no Planning Permission (PP) or Listed Building Consent (LBC) needed.	Likely to be acceptable - PP or LBC likely to be needed	Permission/consent needed, but not likely to be acceptable.

	Non-Heritage Building	Conservation Area Building	Listed Building
Reduce Energy Demand - Be Lean			
Insulation			
Cavity Wall	Acceptable if the construction allows.	Acceptable if the construction allows.	If construction allows, but LBC likely to be needed.
Solid Wall Insulation Internal	Need to avoid impermeable materials which will trap moisture and cause condensation.	Need to avoid impermeable materials which will trap moisture and cause condensation.	Likely to be unacceptable in most circumstances.
Solid Wall Insulation Internal External	Depends on the effect on the building's appearance and on the surrounding townscape. Need to avoid material which will trap moisture and cause condensation.	Will affect external appearance and affect the character of the CA. May be limited circumstances in which part of a building could be treated.	Likely to be unacceptable in most circumstances.

Floors - suspended	**Can be installed between joists or above floorboards.**	**Can be installed between joists or above floorboards.**	**LBC may be needed.** **Avoid installing below a suspended timber floor if it requires removal of existing floorboards. Minimise thickness to avoid harm to the appearance or integrity of architectural features, such as skirting boards, doors, architraves, panelling, fireplaces and stairs. Ensure that air movement in the floor void is not inhibited.**
Floors – solid	**Insulating solid floors can include adding a floating floor above or digging out and replacing the floor.**	**Insulating solid floors can include adding a floating floor above or digging out and replacing the floor.**	**LBC needed.** **For floating floor insulation, attention needed to the depth and associated impact on other areas or adjacent architectural features. The replacement of modern concrete floors may be acceptable**
Carpets and Rugs	**Adding (permeable) carpets or rugs to suspended timber floors or solid floors reduces radiant heat loss and draughts through floorboards. Sensitive and low-cost solution.**		
Roof – pitched	**Above ceiling joists (cold roof) or between rafters (warm roof).**	**Above ceiling joists (cold roof) or between rafters (warm roof).**	**May need LBC, but simply laying glass wool, mineral wool or sheep's wool between joists will not. An air gap or breathable system should be used in order to manage moisture.**
Roof – flat	**Below roof covering or between/below ceiling joists.**	**Below roof covering or between/below ceiling joists.**	**Likely to require LBC.**

	Non-Heritage Building	Conservation Area Building	Listed Building
Reduce Energy Demand - Be Lean			
Windows			
Repair of Original Windows	No pp required. Welcomed on traditional buildings particularly with additional measures to increase energy efficiency such as draft proofing.	No pp required. Welcomed on traditional buildings particularly with additional measures to increase energy efficiency such as draft proofing.	Like for like, localised repairs will not require LBC.
Replacement of Original Windows –single glazing	Planning permission not required for houses. Energy efficient replacements will be supported where permission is needed. Recommend following a design appropriate to the age and style of the building.	Preferably only if beyond repair. Strongly recommend design relates to the age and style of the building. Planning permission not normally required for houses. Replacements incorporating energy efficiency measures such as draft proofing will be supported where permission is needed, provided the design is appropriate. Otherwise, strongly recommend design which relates to the age and style of the building.	Only if beyond repair. Will need LBC. Single glazing to match original design.
Replacement of Original Windows - double glazing	Planning permission not required for houses. Energy efficient replacements will be supported where permission is needed. Recommend following a design appropriate to the age and style of the building.	Preferably only if beyond repair. Planning permission not normally required for houses. Energy efficient replacements will be supported where permission is needed provided the design is appropriate. Otherwise, slimline double glazing to a design appropriate to the age and style of the building is strongly recommended.	Unlikely to be acceptable.

Replacement of Non-Original Windows	PP not required in houses. Energy efficient replacements are will be supported where permission is needed.		LBC needed. Single glazing will be required on historic elevations. Double glazing only likely to be acceptable where slimline and replacing inappropriate replacement windows and on non-historic elevations.
Secondary glazing	This is an alternative to double glazing which retains the external appearance of the building and would normally be supported. No planning permission required.		LBC needed. Subject to appropriate detailing likely to be acceptable.
Installation of draft-proofing strips	A sensitive and low intervention approach. No planning permission required.		May need LBC if needs to be chased into windows or frames.
Reinstatement of internal historic shutters	A sensitive and low intervention approach. No planning permission required.		Will need LBC but likely to be acceptable if replicates original design.
Thick curtains or blinds	Sensitive and low cost solution		
	Non-Heritage Building	**Conservation Area Building**	**Listed Building**
Reduce Energy Demand - Be Lean			
Damp Proofing works			
Maintenance & Repairs	Maintain pipes and gutters Repair defective flashings Repoint brickwork	Maintain pipes and gutters Repair defective flashings Repoint brickwork	Localised and like for like repairs will not require LBC.

Cementitious render	**No PP required, but recommend this is avoided as it will contribute to a harmful build-up of moisture within the structure.**	**No PP required, but recommend this is avoided as it will contribute to a harmful build-up of moisture within the structure.**	**Likely to cause harm to the historic structure.**
Chemical damp-proof course	**No PP required, but recommend this is avoided as it may make damp worse long term.**	**No PP required, but recommend this is avoided as it may make damp worse long term.**	**Likely to cause harm to the historic structure.**
Cavity Membrane System			**LBC needed. Justification of the need will be required, and acceptability will depend on the existing features (e.g. exposed brickwork in front coal vaults) and on design details.**
	Non-Heritage Building	**Conservation Area Building**	**Listed Building**
Reduce Energy Demand - Be Lean			
Upgrading			
Services [11]	**Might include space heating and hot water systems, mechanical ventilation, comfort cooling, fixed internal and external lighting and renewable energy systems. Particularly appropriate where the existing services are close to the end of their economic life.**	**Might include space heating and hot water systems, mechanical ventilation, comfort cooling, fixed internal and external lighting and renewable energy systems. Particularly appropriate where the existing services are close to the end of their economic life.**	**LBC may be required depending on the impact on fabric and internal spaces. Ensure that existing routes and voids accommodating wiring, pipes, etc are re-used and intrusive interventions such as visible service ducts, openings through ceilings and cornices are avoided.**

[11] See Government's Domestic Building Services Compliance guide 2013 edition (incorporating 2018 amendments) and Non-Domestic Building Services Compliance Guide 2013 Edition.

Gas boilers			**Provided existing pipe runs or risers are used, no LBC will be needed.**
	Non-Heritage Building	**Conservation Area Building**	**Listed Building**
Reduce Energy Demand - Be Lean			
Mechanical Ventilation with Heat Recovery (MHVR)			
MHVR	**More likely in buildings which already have mechanical ventilation, commonly commercial and industrial buildings. Size or location of air handling units or heat recovery units may mean that PP is required.**	**In conservation areas, the installation of external units to support the system will need careful consideration.**	**Introduction of mechanical ventilation is likely to need interventions in the fabric and internal appearance of rooms which could be problematic in the context of listed buildings. LBC needed.**
Lighting[12]			
Fittings	**Normally possible for existing buildings to use low energy light fittings.**	**Normally possible for existing buildings to use low energy light fittings.**	**Unlikely to need LBC if existing wiring runs used.**
Controls	**Automatic lighting controls can be installed.**	**Automatic lighting controls can be installed.**	**Unlikely to need LBC if existing wiring runs used.**

[12] Lighting standards should as a minimum follow the applicable Building Services Compliance Guide.

Improvements to Natural light	**May be able to be improved, but largely set by location, orientation and number, size and orientation of windows. Any change which affects the external appearance may require PP.**	**May be able to be improved, but largely set by location, orientation etc. of building. Any change which affects the external appearance may require PP and will be resisted if there is harm to the character/appearance of the CA.**	**May be able to be improved, but largely set by location, orientation etc. of building. Changes which affect number or size of windows likely to harm the special interest and will be resisted.**
	Non-Heritage Building	**Conservation Area Building**	**Listed Building**
Reduce Energy Demand - Be Lean			
Heating			
Heating Controls	**E.g. a time programmer or weather compensation.**	**E.g. a time programmer or weather compensation.**	**Unlikely to need LBC if wired into existing system.**
	Connect to Existing or Planned Heat Networks – Be Clean		
Connection to Heat Network	**As with new build the potential for a retrofitting scheme to connect to a heat network will be dependent on the availability of such networks in the area.**	**Applications will be looked at on their own merits, taking into account the effects on the character and appearance the conservation area.**	**Applications will be looked at on their own merits, taking into account the degree of intervention in the fabric of a listed building and the effects on its internal and external appearance.**

	Non-Heritage Building	Conservation Area Building	Listed Building
Make Use of Renewable Energy – Be Green			
Solar			
Photovoltaic Panels	**Subject to ensuring the load on the roof can safely be carried, and there is suitable safe access for installing and maintaining.** **Modestly sized solar equipment is allowed on houses and flats without planning permission but subject to conditions.[13]**	**PP needed in conservation areas if installed on an elevation facing a highway. Need to ensure that the visual effects are limited.** **Appropriate locations might include a roof slope set behind a significant parapet, or the flat area of a replacement or altered roof, or on a flat-roofed extension.**	**PP needed if the building is listed or in the curtilage of a listed building. LBC needed. Need to ensure that there is no harm to the fabric, appearance or any other aspect of the special interest of the building.** **Appropriate locations might include a roof slope set behind a significant parapet, or the flat area of a replacement or altered roof, or on a flat-roofed extension. Careful attention will be given to how they are fixed to original fabric.** **Details of the associated wiring, etc. will be needed.**
Stand alone Solar Equipment	**Subject to loading and access capacity. Allowed within the curtilage of houses and flats without PP, but subject to conditions.[14]**	**Subject to loading and access capacity. Allowed within the curtilage of houses and flats without PP if not closer to the highway than the building, but subject to conditions.[15]**	**PP required in the curtilage of a listed building. Need to consider the effect on the setting of the listed building.** **Details of the associated wiring, etc. will be needed.**

[1313] Check the General Permitted Development Order 2015 (GPDO 2015) for details - https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/14/crossheading/class-a-installation-or-alteration-etc-of-solar-equipment-on-domestic-premises/made

[14] Check GPDO 2015 for details - https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/14/crossheading/class-b-installation-or-alteration-etc-of-standalone-solar-equipment-on-domestic-premises/made

[15] Check GPDO 2015 for details - https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/14/crossheading/class-b-installation-or-alteration-etc-of-standalone-solar-equipment-on-domestic-premises/made

	Non-Heritage Building	Conservation Area Building	Listed Building
Make Use of Renewable Energy – Be Green			
Wind			
Wind Turbines	**Allowed on <u>detached</u> houses or detached buildings within the curtilage of a house or block of flats, subject to conditions.[16]**	**PP needed in conservation areas if installed on an elevation or land facing a highway. Need to ensure that the visual effects are limited.**	**PP needed if in the curtilage of a listed building, and LBC will be needed if attached to the listed building.** **Details of the associated wiring, etc. will be needed.**

[16] Check GPDO 2015 for details - https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/14/crossheading/class-h-installation-or-alteration-etc-of-wind-turbine-on-domestic-premises/made

	Non-Heritage Building	Conservation Area Building	Listed Building
Make Use of Renewable Energy – Be Green			
Heat Pumps			
Air Source Heat Pumps[17]	**Installation on a house or block of flats or building within the curtilage of a house or block of flats does not require PP, subject to conditions.**[18]	**Subject to loading and access capacity. Allowed within the curtilage of houses and flats without PP if not closer to the highway than the building, but subject to conditions.**[19]	**PP required in the curtilage of a listed building. Need to consider the effect on the setting of the listed building. LBC needed if attached to the listed building.** **Effects on the internal and external appearance of the listed building and any interventions in its fabric will be critical factors in determining acceptability.** **Homeowners should be mindful that internal units can produce noise.**
Ground Source Heat Pumps	**Installation within the curtilage of a house or block of flats does not require PP.**[20]	**Installation within the curtilage of a house or block of flats does not require PP, notwithstanding location within a conservation area.**	**LBC needed. Acceptability will largely depend on the impact of the pump and all associated pipes and**

[17] Heat pumps are generally well-suited to historic buildings as they work efficiently when run on a constant low temperature. These buildings generally have thick masonry walls that can retain heat and release it slowly. Running heating on a constant low temperature can also be beneficial for historic buildings because they will heat up and cool down slowly. This means there will be less thermal movement caused by expansion and contraction, thereby reducing potential damage to the building such as shrinkage cracks.

[18] Check GPDO 2015 for details - https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/14/crossheading/class-g-installation-or-alteration-etc-of-air-source-heat-pumps-on-domestic-premises/made

[19] Check GPDO 2015 for details - https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/14/crossheading/class-b-installation-or-alteration-etc-of-standalone-solar-equipment-on-domestic-premises/made

[20] Check GPDO 2015 for details - https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/14/crossheading/class-c-installation-or-alteration-etc-of-ground-source-heat-pumps-on-domestic-premises/made

			fittings on the appearance and fabric of the building. The impact of the collector loop on the landscape, including archaeology, underground services and curtilage structures, also needs to be considered. Where there is known or suspected buried archaeology present, the project should include a Written Scheme of Investigation (WSI) for an archaeological watching brief in support of any application.
	Non-Heritage Building	Conservation Area Building	Listed Building
Other			
Living Walls			
Livings Walls	Likely to need planning permission – each case will be considered on its merits.		Likely to need listed building consent – each case will be considered on its merits.

Glossary

Terminology	Description
Air Quality Assessment (AQA)	Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific.[21]
Air Quality Focus Area (AQFA)	Air Quality Focus Areas (AQFA) are locations that not only exceed the EU annual mean limit value for nitrogen dioxide (NO2) but are also locations with high human exposure. AQFAs are not the only areas with poor air quality but they have been defined to identify areas where currently planned national, regional and local measures to reduce air pollution may not fully resolve poor air quality issues. There are currently 187 AQFAs across London. The list of Air Quality Focus Areas is updated from time to time as the London Atmospheric Inventory is reviewed and the latest list in the London Datastore should always be checked. AQFAs are defined based on GLA modelling forecasts that incorporate actions taken by the GLA and others as well as broader changes in emissions sources.
Air Quality Management Area (AQMA)	Air Quality Management Areas (AQMAs) are declared by the London boroughs in response to modelled or measured existing exceedances of legal air quality limits. The analysis underpinning AQMAs is often more spatially detailed than London-wide modelling and may include the identification of additional air quality hot spots or other local issues.
Biodiversity Net Gain (BNG)	This refers to the 10per cent increase in biodiversity which will be required by the Environment Bill 2019-21 once it receives Royal Assent.
Building Services Compliance Guide	For domestic and for non-domestic development provide guidance on complying with Building Regulations for refurbishments.

[21] Air quality - GOV.UK (www.gov.uk)

Terminology	Description
Building Research Establishment Environmental Assessment Method (BREEAM):	BREEAM is a holistic approach on environment standards that goes beyond carbon emissions, and supports quality assurance.
CIBSE TM59	Chartered Institution of Building Services Engineers. Design methodology for the assessment of overheating risk in homes (2017)[22]
CIRIA	The Construction Industry Research and Information Association, a neutral, independent and not-for-profit body. (CIRIA)
Circular Economy	Reducing waste and supporting the Circular Economy as one where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste.' (London Plan 2021)
Combined Heat and Power (CHP)	The combined production of electricity and usable heat is known as Combined Heat and Power (CHP) and is supplied to buildings or a network.
Critical Drainage Areas	The Surface Water Management Plan of the Borough identified Critical Drainage Areas which show a complex interaction of surface and sewer water flooding.
District Heating Network (DHN)	A network of pipes carrying hot water or steam, usually underground, that connects heat production equipment with heat customers. They can range from several metres to several kilometres in length. (London Plan 2021)
Ecological Constraints and Opportunities Plan (ECOP)	Can be used to help guide the design of the different elements of a development whilst taking account of its impacts on biodiversity.
Ecological Impact Assessments (EcIA)	Process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components, and usually performed as one element of an environmental impact assessment (EIA). (BS42020:2013 Biodiversity)

[22] CIBSE - Building Services Knowledge

Terminology	Description
Energy hierarchy	Shows how new buildings can meet net zero carbon by following a sequential approach.
EnerPHit	Energy performance standard that allows a slight relaxation in the space heating targets (20-25kWh/year depending on location), recognising that the form of the building cannot easily be changed in refurbishment, it also allows a slightly higher air permeability rate of 1 air change per hour at 50Pa.
Energiesprong	A performance standard for new build and refurbishment. It is suitable for residential development. The methodology involves a focus on achieving minimum performance standards for building elements and fixed services and, like the Passivhaus methodologies, account is taken of both regulated and unregulated emissions.
Embodied emissions	Non-operational greenhouse gas emissions associated with a building's lifecycle.
Environmental Impact Assessments (EIA)	The aim of an Environmental Impact Assessment is to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process.[23]
Flood Risk Assessment	A study to assess the flood risk to and from a development site.
Flood Risk Asset	Features with a flood risk management role which can influence the effects of flooding events. These are, for example, the embankment of the river Thames and Thames Water pumping stations.
Flood Zone	A geographic area within which the flood risk is in a particular range, as referred to in the National Planning Practice Guidance.

[23] Environmental Impact Assessment - GOV.UK (www.gov.uk)

Terminology	Description
Green Infrastructure	The multifunctional, interdependent network of open and green spaces and green features (e.g. green roofs).
Heat networks or district heating	A way of distributing heat (and more rarely, power) generated from a given energy source(s) across multiple buildings or sites.
Heat Network Priority Areas (HNPA)	These identify where in London the heat density is sufficient for heat networks to provide a competitive solution for supplying heat to buildings and consumers.
The London Energy Transformation Initiative (LETI)	LETI is a network of over 1000 built environment professionals that are working together to put London on the path to a zero carbon future. The voluntary group is made up of developers, engineers, housing associations, architects, planners, academics, sustainability professionals, contractors and facilities managers.
Life-cycle Assessment	Is a multi-step procedure through the life stages of a building. In the UK the BS EN 15978: 2011 standard is typically used.
Major Development	Generally, major developments are: • Development of dwellings where 10 or more dwellings are to be provided, or the site area is 0.5 hectares or more; • Development of other uses, where the floor space is 1,000 square metres or more, or the site area is 1 hectare or more. For a full definition, see Part 1 of The Town and Country Planning (Development Management Procedure) (England) Order 2015. (London Plan 2021).
Non-Road Mobile Machinery (NRMM)	Is a broad category which includes mobile machines, and transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads.[24]

[24] Non-Road Mobile Machinery (NRMM) | London City Hall

Terminology	Description
Passivhaus	A voluntary energy standard that has been developed to focus on improving building energy performance
Preliminary Ecological Assessments (PEAs)	The initial scoping assessment of an area of land, for its potential to support protected species, based on the habitats it supports and signs of protected species. PEA's are required to inform what further surveys for protected species are required, as part of the planning process.[25]
Regulated carbon emissions	These are the carbon emissions arising from energy used by fixed building services, which are defined in Approved Document Part L of the Building Regulations 2013.
Surface water	Rainfall that collects on the ground.
Sustainability Appraisal	Sustainability Appraisal (SA) is a tool used to appraise planning policy documents in order to promote sustainable development. Social, environmental and economic aspects are all taken into consideration. Sustainability Appraisal is a compulsory requirement under the 2004 Planning and Compulsory Purchase Act and the 2001/42/EEC European Directive. This means that Stafford Borough Council must carry out a Sustainability Appraisal.
Sustainable Drainage Systems (SuDS)	Using sustainable drainage techniques and managing surface water run-off from buildings and hardstanding areas in a way that reduces the total volume, flow and rate of surface water that runs directly into drains and sewers.
Sustainable Sourcing	Sustainable sourcing, or 'responsible sourcing' as it is also commonly known, addresses a range of issues, including but not limited to material traceability, health and safety, and environmental management through the supply chain; energy, resource and water use, greenhouse gas emissions, and ecotoxicity. Responsible sourcing is described in standard BES 60012[26]. (GLA Circular Economy

[25] https://ecologytraining.co.uk/2019/04/28/what-is-a-preliminary-ecological-appraisal-pea/
[26] https://www.bsigroup.com/en-GB/bes-6001-responsible-sourcing-of-construction-products/

Terminology	Description
	Statement Guidance, Consultation Draft, October 202).
Tidal Breach flood levels	The potential flood levels which could occur as a result of a breach of the tidal defences. The breach modelling data was produced by the EA in 2017 and carried out by Atkins. Information for the Borough can be accessed here[27] (please choose the flood risk – breach level no bedroom accommodation – tab).
Thermal bridging	Occurs where there is a direct connection between the inside and outside through one or more building elements which are more thermally conductive than the rest of the building envelope, resulting in heat loss outwards.
The Government's Building Services Compliance Guides	Guidance on complying with Building Regulations for refurbishments.
Unregulated carbon emissions	These result from processes that are not covered by building regulations, i.e. ICT equipment, lifts, refrigeration systems, cooking equipment and other 'small power'.
Urban Greening Factor	This is a land-use planning tool to help determine the amount of greening required in new developments.
Whole Life-Cycle Carbon Approach	To fully capture a development's carbon impact, a whole life-cycle approach is needed to capture its unregulated emissions (i.e. those associated with cooking and small appliances), its embodied emissions (i.e. those associated with raw material extraction, manufacture and transport of building materials and construction) and emissions associated with maintenance, repair and replacement as well as dismantling, demolition and eventual material disposal). (London Plan 2021)
Zero and net zero carbon	Zero carbon, requires no net release of carbon dioxide and other greenhouse gas emissions into the atmosphere. Net-zero carbon refers to balancing the amount of emitted greenhouse gases with the equivalent emissions with no

[27] https://lbhf.maps.arcgis.com/apps/webappviewer/index.html?id=931fa3b3294b4147a518648579b12d4a

Terminology	Description
	reliance on fossil fuels, using on-site renewable or offsetting elsewhere as a last resort.