

PAN 09

Householder guidance on energy efficiency for historic houses in Conservation Areas

December 2016

Brighton & Hove City Council's Local Development Framework



Planning Advice Note



Brighton & Hove
City Council

Summary

This planning advice note offers guidance for householders on energy efficiency improvements for historic houses in Conservation Areas where planning issues might arise.

It applies to the typical Regency, Victorian and Edwardian solid walled houses built before 1914 that make up the majority of the city's historic built environment.

Approximately 40% of Brighton and Hove's housing was built before 1919. This is a higher proportion than the UK average of 25%. Older houses are generally less energy efficient than more modern houses. Pre-1919 houses emit on average 9 tonnes CO² per year, whereas a post 1930 house emits on average 4.5.

Because of their significance and valued character, alterations to the appearance of historic houses in Conservation Areas are subject to planning restrictions. This document aims to clarify how energy efficiency improvements can be made in a sensitive and effective way.

Brighton & Hove City Council encourages residents to reduce energy use and carbon emissions in their historic homes, to ensure that they can be heated affordably, and will be comfortable, healthy and warm to live in for years to come.

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*Now reformed as
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Energy & Industrial
Strategy*

With thanks to the professionals and stakeholders who input into this document.

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Introduction

Deciding how to make home energy improvements in Conservation Areas can be daunting, and the planning process can seem complicated. This guidance aims to help householders with decision-making and provide basic information to clarify where planning permission is needed and what approach is likely to gain planning permission.

What this guidance covers:

- Information for householders on external energy efficiency improvements for historic houses in Conservation Areas *where planning issues might arise*;
- Planning terms that you might need to know;
- When planning permission is needed for energy efficiency measures;
- When Building Regulations apply and the Building Control Body must be contacted; and
- What is likely to gain planning permission.

What this guidance doesn't cover:

- Energy efficiency measures in Conservation Areas *where there are no planning issues*;
- Listed Buildings or buildings in the curtilage of a Listed Building
- Flats and flatted development in Conservation Areas
- Buildings in Conservation Areas *that are not residential*
- Most Modern Houses in Conservation Areas built after 1914

There are many ways energy bills can be reduced through simple strategies that don't involve planning. Some of these are listed on page 7.

Historic homes can be made more energy efficient through relatively minor interventions whilst retaining their special character and appearance. Major work, like refurbishing or replacing historic windows can be done in a way that maintains their character and appearance whilst reducing heat losses and draughts.

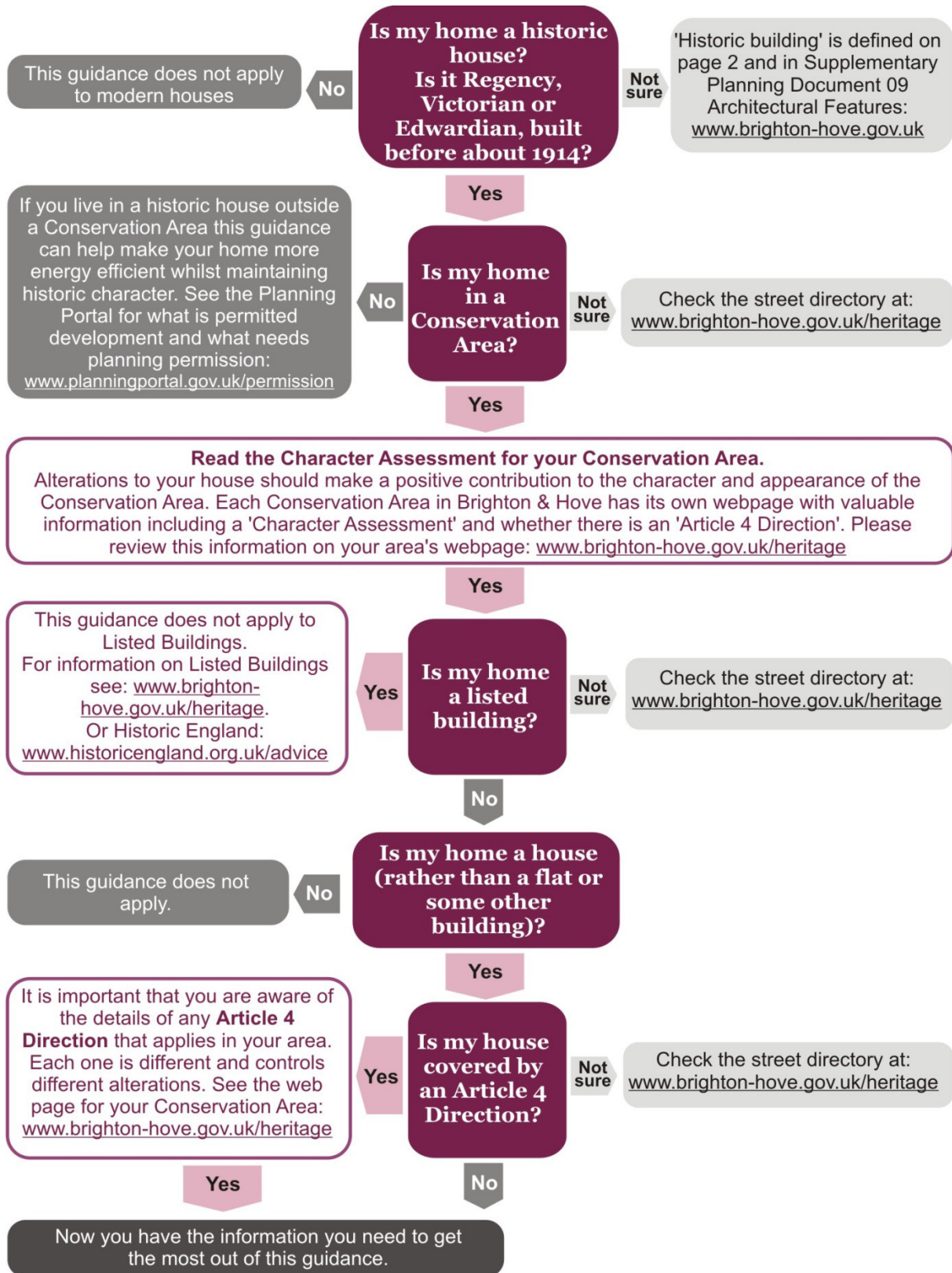
Where major energy efficiency and renewable energy measures are proposed, it is important to consider how these can be undertaken in a way that complements the historic context of your home and successfully achieves planning permission.

This guidance is based upon current national and local policy. It is not a policy document but a practical guide.

It is the home-owners responsibility to comply with planning and building control requirements.

Where planning permission is not needed, for peace of mind you can apply for a Lawful Development Certificate. This is not the same as planning permission but is proof that your household building work is lawful.

When does this planning guidance apply?



What are the relevant planning terms?

Conservation Areas

These are areas of special architectural or historic interest, which require careful management to protect their character and appearance. They are designated by the local authority. In Brighton & Hove there are currently 34 Conservation Areas. Each area will have a 'character statement' that sets out clearly what makes it special. This is an important source of information for you when making changes to your home in a Conservation Area. The planning authority will always seek to conserve elevations that face a public highway, but there may be more flexibility on other elevations.

Permitted Development Rights

Some minor changes to your house can be made without needing to apply for planning permission. This is called Permitted Development (PD). PD Rights are granted by Parliament, not the local authority. In some areas such as Conservation Areas, PD rights are more restricted. This may mean you will need to apply for planning permission for projects in a Conservation Area that would not need planning permission in other areas. The Government's 'Planning Portal' website provides information on Permitted Development

www.planningportal.gov.uk/permission. It is important to be aware of whether an Article 4 Direction has changed your permitted development rights, see below.

The government periodically make changes to Permitted Development rights. It is therefore recommended that applicants check online at www.planningportal.gov.uk/permission or with the planning authority via the council website www.brighton-hove.gov.uk/planning.

Sometimes PD Rights are removed by a planning condition on a previous planning condition.

The advice on Permitted Development rights in this document is correct at time of publication, December 2016 (version 1), but will be updated if changes are made.

Article 4 Directions

An Article 4 Direction is a control applied to a particular area by the local authority. It enables the council to make sure proposed changes to buildings meet policies to protect the character of Conservation Areas. An Article 4 Direction removes permitted development rights so planning applications must be submitted for projects that would otherwise be 'permitted'. There are no fees for these applications. Usually they only relate to facades of the building facing a street, public footpath or open space, but sometimes they refer to the rear too. Each Article 4 direction is different so check if there is an Article 4 covering your house and what it relates to.

Building Regulations

Approved Document Part L1B 'Conservation of fuel and power in existing dwellings'

Guidance on Building Regulations covering energy efficiency can be found in Approved Document L1B which explains requirements for existing domestic buildings. Energy efficiency upgrades are generally required where thermal elements (windows doors, walls, etc.) are substantially replaced or renovated, but not for repair work (e.g. when window frames are kept and glass replaced). Certain classes of historic buildings can be exempted; these include historic buildings in Conservation Areas where the external appearance is valued e.g. where surface materials (walls and roofs) and the details of windows, doors, and roof-lights contribute to the character of the area.

While not all buildings in a Conservation Area are of historic interest, many have original features that contribute to the character of the area. Removing such features can have an adverse impact on its character. Paragraph 3.9 (Part L1B) states with regards historic buildings in Conservation areas:

When undertaking work ... the aim should be to improve energy efficiency as far as is reasonably practical. The work should not prejudice the character of the host building or increase the risk of long-term deterioration of the building fabric or fittings.

This means the energy efficiency should be improved as far as can be, but not to a point where there is risk of damage to the appearance and character or to the physical fabric of the building.

What planning policy is relevant?

At both the local and national level, planning policy considers both heritage and energy efficiency to be important. The balance between these two will be considered on a site by site basis when the planning authority assesses a planning application.

Heritage policy	Energy efficiency policy
National Planning Policy Framework	
<p>17: Core Principle:</p> <ul style="list-style-type: none"> • always seek to secure high quality design and a good standard of amenity for all existing and future occupants of land and buildings; • take account of the different roles and character of different areas • conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations' <p>126. Local planning authorities should set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment... In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance.</p>	<p>17: Core Principle: Development should: 'support the transition to a low carbon future....encourage the re-use of existing resources, including conversion of existing buildings and encourage the use of renewable resources'.</p> <p>95: To support the move to a low carbon future, local planning authorities should... actively support energy efficiency improvements to existing buildings;</p>
Brighton & Hove City Plan Part 1	
<p>Policy CP15 Heritage: The city's historic environment will be conserved and enhanced in accordance with its identified significance, giving the greatest weight to designated heritage assets and their settings and prioritising positive action for those assets at risk through neglect, decay, vacancy or other threats. The council will ensure that the city's built heritage guides local distinctiveness for new development in historic areas and heritage settings. Where proposals are promoted for their contribution to mitigating climate change, the public benefit of this will be weighed against any harm which may be caused to the significance of the heritage asset or its setting.</p> <p>See also saved Local Plan policy HE6, on Conservation Areas¹.</p>	<p>Policy CP8 Sustainable Buildings: The council will seek that all new development incorporates sustainable design features to avoid expansion of the city's ecological footprint, help deliver the principles of the One Planet approach, radical reductions in greenhouse gas emissions, particularly CO2 emissions, and mitigate against and adapt to climate change.</p> <p>Development proposals ... are required to demonstrate how the development:</p> <p>b) contributes to a reduction in the city's... greenhouse gas emissions, delivering significant reductions in fuel use and emissions via...fabric performance; energy efficiency measures; and low carbon solutions</p> <p>e) improves the sustainability of existing buildings</p>
Historic England Hierarchy of Conservation Principles	
<ol style="list-style-type: none"> 1. Repair 2. Replace/Renew 3. Restore 4. Alter 	<p>Energy policy² essential principles</p> <ul style="list-style-type: none"> • Be lean (use low energy, energy efficient approaches e.g. insulation) • Be mean (manage energy carefully, e.g. thermostats) • Be green (use renewable energy)

¹ <http://www.brighton-hove.gov.uk/content/planning/planning-policy/development-plans>

² For full explanation of energy policy see City Plan Part One, Policy CP8 Sustainable Buildings

What are the most efficient ways to save energy?

When considering how to make historic houses more energy efficient, it's worth first thinking about measures that have no impact or little impact on historic features and fabric.

There are lots of ways to reduce energy use and bills; many of them cheaper and easier than the measures explored in this document. These include:

Reducing electricity consumption through:

- low energy lighting, e.g. LEDs, CFLs
- low energy appliances (A* to A*** ratings)
- efficient controls

Improving heating through:

- efficient replacement gas boiler
- upgraded heating controls

Reducing heat losses through:

- draught proofing
- lagging pipework and hot water tank
- loft insulation
- internal window shutters
- heavy curtains for doors and windows

The cheapest way to reduce energy use and bills is through behaviour change, for example:

- turning off heating and lighting in rooms not in use
- turning down the thermostat
- taking shorter showers
- ensuring energy is not being used when and where it is not needed

The measures covered in this document are generally those that may need planning permission. However, special attention has been paid to windows and doors, as the planning authority frequently receives queries about these.

This document seeks to support energy efficiency improvements to historic houses in Conservation Areas in ways that preserve their character.

Energy efficiency measures at a glance

This table provides information on:

- An estimate of costs³ for each measure when applied across the whole house. Note that costs are subject to variation with different products and in different situations and can only be confirmed by obtaining quotes for works.
- An estimate of how much the measure will reduce an average annual energy bill.
- Whether planning permission is needed.
- Whether Building Regulations apply.
- Follow the page number for full information.

Page	Energy efficiency measure	Estimated cost ⁴ for the whole house	Estimated annual energy bill saving	Is planning permission needed?	Do Building Regulations apply?
All windows and doors					
11 & 17	Draught proofing (all windows and doors)	Up to £1K	Up to £50	No	No
11 & 17	Secondary glazing (all windows and doors)	£1-3K	£100-300	No	No
Windows					
12	Replacement frames and single glazing (low-E) (all windows)	Over £3K	Up to £50	No	No
12 & 18	Slim profile double glazing (all windows and doors)	Over £3K	£50-100	Maybe	Yes
13	Replacement double and triple glazed	Over £3K	£100-300	Maybe	Yes
Doors					
18	Replacement Doors	£1-3K	Up to £50	Maybe	Yes
Insulation					
21	External Wall Insulation	Over £5K	Over £300	Yes	Yes
22	Flat roof insulation (whole roof)	Over £5K	£100-300	Maybe	Yes
Renewable technologies (estimated energy bill savings exclude FIT and RHI payments)					
23	Biomass Heating	Over £5K	Depends on fuel cost	Maybe for store & flue	Yes
26	Solar photovoltaic panels 4kW	Over £3K	£50-100	Maybe	Yes
26	Solar thermal hot water panels	Over £3K	£50-100	Maybe	Yes
27	Solar photovoltaic roof slates 4kW	Over £5K	£50-100	Maybe	Yes
28	Air source heat pumps	Over £3K	£100-300	Maybe	Yes

³ Cost estimates use information from Energy Saving Trust, Historic England and Historic Scotland.

⁴ All costs are estimated current to December 2016, but are subject to change over time

Energy efficiency measures explained

Windows

Windows are a crucial element of historic streetscapes. Their style, proportions detailing, method of opening and materials denote architectural style, period and use. Alterations to windows can have a dramatic effect on individual buildings, and cumulatively, whole streets and historic areas.

Windows are the architectural feature most at risk of loss and most vulnerable to alteration and replacement in historic buildings so receive special attention in this guidance. Draught-proofing and secondary glazing offer ways of reducing heat loss without involving high costs or needing planning permission. They are included here because they enable historic character to be maintained effectively.

Policy: Architectural Features Supplementary Planning Document 09

- Original or historic windows should be retained unless beyond economic repair.
- New and replacement windows must closely match the originals in their style, method of opening, proportions and external details.
- On street elevations, original material must also be matched.
- Energy efficiency in repaired, replaced and new windows will be encouraged.
- Where trickle vents are required these must be concealed.
- Where a building has lost its original windows they should be reinstated with windows matched using historic evidence or based on original windows in the locality.

Building Control considerations

Building Regulations apply where the whole window and frame is replaced. Replacement glazing should be certified by a registered installer (under the relevant competent person scheme) or through approval from the Building Control Body (BCB). The BCB will check the replacement window(s) and, if satisfied, issue a compliance certificate. Exemptions from energy efficiency standards exist for houses in a Conservation Area but only where compliance with the efficiency requirements would unacceptably alter the character or appearance. However, the best energy efficiency standards are encouraged.

Draught-proofing



Saving on bill	Cost (house)	Permission needed?
Up to £50	Up to £1K	No

What is it?

Draught proofing is designed to close up gaps that appear between the window and its frame as the window ages, to reduce cold draughts entering and heat being lost.

What are the technical considerations?

Professional installation is recommended for draught proofing sash windows. The staff and parting bead of sash windows can be replaced with a system incorporating brush seals. The gap between casement windows and their frames can be improved by DIY installation of mastic bead and release tape or weather strips, or professional fitted systems can be rebated into the joinery.

Secondary glazing



Saving on bill	Cost (house)	Permission needed?
£100-300	£1-3K	No

What is it?

Secondary glazing improves insulation, draught-proofing and noise and eliminates the need to draught proof the window. The system is secured to the inside of the window frame or reveal and can be demountable for removal in summer. It can be hinged or sliding to facilitate opening for ventilation and cleaning. It can be cheaper than installing new slim profile double glazed units and is capable of achieving similar performance when well fitted.

What are the technical considerations?

Ensure the design is relatively unobtrusive by careful alignment of divisions of the glazed panels hidden behind sash meeting rails or casement frames and bars, the use of slim frames and appropriate colour. Ensure the proposed system does not compromise the use of existing internal shutters.

Replacement sashes and/or sash frames with 'low-e' single glazing



What is it?

The window can be wholly replaced, or parts can be made up, with new sashes and/or a new frame to be combined with existing elements of the original window. Use of modern more efficient single glazing gives a slight improvement compared to historic glass. Energy efficient 'low' e (low emissivity) coatings reduce thermal radiation and improve performance. Combined with draught proofing this can reduce heat loss through the glass and frame.

Is planning permission required?

Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. Where the new sash box frames match the existing exactly (in material and dimensions) planning permission is not needed. Where windows use different materials or dimensions, permission is likely to be needed.

What are the technical considerations?

New sash frames should exactly match the original in material and dimensions. Draught proofing is also recommended.

Saving on bill	Cost (house)	Permission needed?
Up to £50	Over £3K	Maybe

Slim profile double glazing

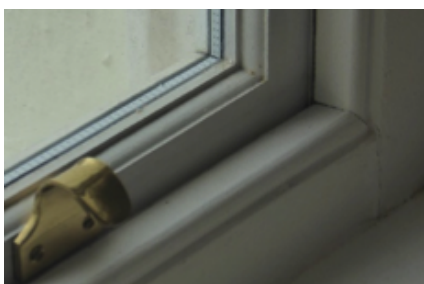


Image: Maria Hawton Mead

What is it?

Historic window frames have slender components designed to take one glass pane. Gas filled 'Slim profile' double glazed units are thin enough to fit into existing historic frames as they have widths of just 10–14mm. They reduce heat loss compared to single glazing. Cost is higher than normal double glazing, but will depend on the complexity of the frame.

In 'Slim Vacuum double glazed units' the gas is removed. This improves performance whilst narrower widths of 6.5mm can be achieved. Vacuum slim-line glazing is more expensive than standard slim-line glazing.

Saving on bill	Cost (house)	Permission needed?
£50-£100	Over £3K	Maybe

Is planning permission required?


Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. If the existing window is beyond repair it will be acceptable to replace with new if joinery sections replicate the original. Slim profile double glazing is encouraged and planning permission is not required where units are installed in existing frames, or installed in replacement sash frames that exactly match the existing window, in dimension and material.

Replacing any historic stained or etched glass is generally not accepted. Also false glazing bars are not usually acceptable - multi-pane windows can be problematic as many units being fitted in one window is difficult and expensive.

What are the technical considerations?

All profiles, rails and glazing bars should replicate the original. Draughtproofing is recommended.

When matching a historic window: what features need to be matched?

Matching a historic window	All the following features should match the original window, or a typical historic window in the locality
	<p>Method of opening (sash or casement)</p> <p>The number of panes</p> <p>The width of glazing bars</p> <p>The depth of the meeting rail</p> <p>Presence, absence and style of horns</p> <p>The depth of bottom rail</p> <p>Plus:</p> <p>The material (steel? wood?)</p> <p>All other dimensions</p>

Double and triple glazed replacement windows



What is it?

Double or triple glazing consists of 2 or 3 panels of glass filled with inert gas. Because these units have widths of 16mm upwards, the existing window is usually replaced as historic frames cannot accommodate these widths. Replacement requires careful specification as joinery dimensions must match the original window. Matching is unlikely to be achievable with triple glazing but may be achievable in double glazing, depending on the design and scale of the existing window.

Is planning permission required?

Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. Permission is required where an Article 4 Direction controlling windows is in place. It may be difficult to get permission for street facing windows, or any others visible from the highway.

Double glazing may be easier to accommodate sympathetically in casement windows if dimensions are matched.

Saving on bill	Cost (house)	Permission needed?
£100-£300	Over £3K	Maybe

What are the technical considerations?

Essential: External joinery section, meeting rails and glazing bars should replicate the original.

Encouraged: Windows should be replaced in a consistent manner across each elevation and draught stripping replacement windows.

May be acceptable: Subject to detailing it may be possible to get permission for standard double glazing at the rear, when not visible to the street, but triple glazing may only be acceptable in some casement windows.

Generally not acceptable: Double glazing in multi paned windows; uPVC windows on elevations visible from the street or public open space; and replacing historic stained or etched glass.

Summary: window alterations at a glance

This table illustrates at a glance the relative costs of different energy efficiency improvements that can be applied to windows, it indicates their relative effectiveness and what planning issues arise.

Windows	Cost	Energy efficiency improvement	Planning Permission	Planning Issues
Draught-proofing	Low	Fair	N/A	N/A
Secondary glazing added	Low-Med	Very good	N/A	N/A
Slim-line double glazed units installed into existing frames. Draught proofing provides further improvement.	Med	Good	N/A	N/A
Replace windows using slim-line double glazed units	High	Good	Permission may be needed. Check with planning via the council website.	Where frames match original windows exactly in design, detail & material permission is not needed.
Replace windows using double glazed units	High	Very good	Permission may be needed. Check with Planning via the council website	Frames must match in design, detail & material. Standard double glazing may be acceptable at the back of property if not seen from the street. On street facing elevations permission may be very difficult to achieve due to the more substantial frames needed to house standard double glazing.
Replace windows using triple glazed units	Very High	Very good	Permission may be needed. Check with planning via the council website.	Frames must match in design & material: very difficult with triple glazed units. Triple glazing may be acceptable in casement windows at the back of the property if not seen from the street. On street facing elevations permission is very unlikely due to the more substantial frames needed to house standard triple glazing.

Doors

Historically doors were constructed of solid timber, usually with four or six timber panels. These solid doors have reasonable thermal properties and most of the heat loss usually occurs around the perimeter.

Later Victorian doors may have glazed upper panels and fanlights above. Larger houses may even have glazed side lights (windows). See SPD09 for further information.

Policy: Architectural Features Supplementary Planning Document 09

Doors

- Original doors should be retained or, if beyond repair, replicated in timber.
- On street elevations, reinstated doors must match traditional designs typical of the area.
- Glazing will be allowed in upper panels where this would not harm the group value of the building.
- Where a building has lost its original door it should be reinstated with a purpose-made timber door based on historic evidence or on original doors in the locality.

Fanlights

- Original door surrounds and fanlights must be retained and moulding and glazing bar details replicated in any restoration work.
- Fanlights and side lights must not be over-boarded.

Building Control considerations

Building Regulations apply only where the door and frame or window and frame are replaced (the 'controlled fitting'). New doors should meet prescribed minimum performance standards. Whilst historic buildings can be exempted from the thermal standards expected of replacement doors, the best possible performance is encouraged. Replacement glazing should be certified by a registered installer (under the relevant competent person scheme) or through approval from the Building Control Body.

Draught proofing of front doors



Saving on bill	Cost (house)	Permission needed?
Up to £50	Below £1K	No

What is it?

Draught proofing fills the gaps between door and frame made from movement over time. Draught proofing can also be fitted to letter boxes and key holes where draughts enter.

Internal lobbies, fitting heavy curtains to doors and using a draught excluder on the inside of the door all help reduce draughts.

Is planning permission required?

Planning permission is not required for draught proofing of doors.

What are the technical considerations?

Encouraged:

- The gap between the door and frame can be improved by DIY installation of brush, or compression seals, or professionally fitted systems can be fully rebated into the joinery.
- If the door is being refurbished rebate the draught stripping into the door is preferred to mounting it on the door where it can be seen.

Secondary glazing in Front Doors and Fanlights



Saving on bill	Cost (whole house incl windows)	Permission needed?
£100-300	£1K-£3K	No

What is it?

Secondary glazing systems can be secured to the frame of the single glazed upper panels and to the window or fanlight over the door. The system can be demountable for removal in summer months.

Is planning permission required?

Planning permission is not required for secondary glazing.

What are the technical considerations?

- Etched glass or stained glass should not be lost but secondary glazing can be used to improve thermal performance.

Replacement slim-profile double glazing units in Front Doors and Fanlights



What is it?

See windows section for description of slim profile double glazing.

Is planning permission required?

Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. Planning permission is not required when replacing plain glass with slim profile glazing in a front door if the external joinery sections remain unchanged and the glazing unit sits behind the reveal.

Where an Article 4 Direction controlling doors is in place, and where there is a visible change to the door planning permission may be required.

Permission on side or rear elevations is not normally required.

Saving on bill	Cost (whole house incl windows)	Permission needed?
Up to £50	Below £1K	Maybe

What are the technical considerations?

- If the existing door and fanlight the door is beyond feasible repair it will be acceptable to replace with new if joinery sections are the same as the original. Draught-proofing is recommended.
- Historic stained glass or etched glass should be kept where it exists

Replacement doors



Is planning permission required?

Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. Where an Article 4 Direction is in place controlling doors, and where there is a visible change to the door planning permission may be required.

Permission on side elevation or rear elevations is not normally required.

What are the technical considerations?

- Original doors should be retained unless beyond repair and replaced to match the historic design.
- Original door surrounds and fanlights, etched or stained glass should be retained.
- Secondary glazing can be used to improve thermal performance.
- Draught proofing is recommended.

Saving on bill	Cost	Permission needed?
Upto £50	£1-£3K	Maybe

When matching a historic door: what features need to be matched?

Matching a historic door

All the following features
should match
the original door,
or a typical historic door
in the locality



Fanlights

Panelling

Moulding style and depth

Door furniture

Plus:

Any glazing

Traditional painted finish
(not stained or varnished)

The material

External Wall Insulation

See the Planning Advice Note 08 'Householder guidance on external wall insulation' for detailed information.

Planning permission for External Wall Insulation is unlikely to be granted for front elevations and those visible from the highway or public open space. However, permission may be granted for rear elevations especially where they are not visible from the street or public open space and on some side elevations that are not prominent and which have little architectural detailing. Where applicants seek to insulate solid walls of historic buildings in Conservation Areas, internal wall insulation is a way of improving the thermal performance of walls without affecting the historic façade and does not require planning permission.

Policy: Architectural Features Supplementary Planning Document 09

- Original historic terracotta, faience and tile cladding must always be retained and repaired. It must not be removed, covered over or painted.
- Existing render should be retained and repaired and all finishes and details should be matched in replacement work. Mouldings must be retained and where they are repaired should be re-run to the original profile
- Any fair-faced facing stone, Coadestone or other artificial or reconstituted stone decorative features must not be removed, rendered, tiled or painted over.
- Good quality original fair-faced brickwork, flintwork and mathematical tiling must not be rendered, tiled over or painted.
- Where the original rainwater goods are a notable feature of a building's appearance, they must be retained or replaced in cast iron or cast aluminium to the same design and profile on street elevations.

Building Control considerations

Building Regulations Part B4 (External Fire Spread) may be required where the building to be treated is close to another property. Building Regs apply for Part L. Exemptions exist for traditional breathable construction and Conservation Areas but the best possible performance is encouraged.

External wall insulation



*Example of 'hybrid insulation': external wall insulation is installed on the side and rear of the property, and internal wall insulation is fitted internally on the front wall.
 Image: Low Carbon Trust*

Saving on bill	Cost (house)	Permission needed?
Over £300	Over £5K	Yes

What is it?

External wall insulation is a highly effective way of improving the thermal performance of a building. Solid boards of insulation material typically 50 – 120mm thick are applied to the external wall of the building and then finished with rendering or cladding. It will almost always significantly change the appearance of an historic building, especially if the building is brick or flint faced. It impacts on projecting eaves, window and door reveals and external mouldings and other decorative details.

On front walls in conservation areas where EWI is unlikely to be acceptable, a 'hybrid' system can be considered. This is where Internal wall insulation is applied to the front and EWI is applied to the side and rear. This enables a high standard of insulation whilst preserving the appearance of the building.

Is planning permission required?

Planning permission is required for external wall insulation.

- On front walls in Conservation Areas it is unlikely to be acceptable because of the impact on the façade and streetscape.
- External wall insulation may be acceptable on side and rear walls of houses in Conservation Areas not visible from the highway or public open space, depending on the design and material of the building and subject to detailing.
- Planning Permission is unlikely to be granted for EWI even on rear elevations where there is architectural detailing such as corbels under eaves and windows, or decorative line work across the front of the building and other mouldings. Facing stone or good quality original fair-faced brickwork, flintwork and mathematical tiling must not be rendered over.

What are the technical considerations?

- A large proportion of the older building stock in Brighton and Hove are constructed of 'breathable' moisture permeable materials. 'Breathable' insulation materials should be used with these walls to avoid build-up of condensation in the layers of the wall which can lead to long term damage. Vapour permeable insulation should be used to allow moisture to transfer through the walls along with a lime based insulating render - cement based products are not suitable for traditional buildings as they do not allow them to breathe. Vapour permeable paints should also be used.
- Care should be taken to ensure alterations required to roof eaves, window and door reveals and the wall foot (where the wall meets the ground) do not affect the buildings appearance or its ability to shed rainwater.

Flat roof external insulation

Policy: Architectural Features Supplementary Planning Document 09

- Where a roof is visible from the street, its form and shape must not be altered.
- Bays must always be retained and all original detailing and mouldings retained or replicated.

Building Control considerations

Building regulations apply. Where flat roofs are being renovated or an additional insulating layer is being added the whole roof should be improved to achieve a minimum thermal performance standard as set in Building Regulations.

Exemptions apply for Conservation Areas and traditionally constructed buildings, however, best possible performance is encouraged.

Flat roof external insulation



What is it?

Historic buildings rarely have a main flat roof. They may have an area of flat roof at the apex of the roof pitches, over bay windows or on rear or side extensions. Insulation of flat roofs can significantly improve thermal performance as roof areas can account for 25% of heat loss from a home. Where there are internal height restrictions, external flat roof insulation may be the best option. Flat roof external insulation is where insulation is installed above the roof deck. Rigid insulation boards can be placed below the weatherproof membrane or above the weatherproof membrane (these are called 'warm roof deck' and 'inverted warm deck' construction respectively). Internal roof insulation does not require permission.

Saving on bill	Cost (house)	Permission needed?
£100-300	Over £5K	Maybe

Is planning permission required?

Where an Article 4 Direction is in place planning permission may be required. Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. Planning permission is required for alterations to a roof where:

- Any alteration would project by more than 150 mm from the existing roof plane.
- Any alteration would be higher than the highest part of the roof.

Planning permission is unlikely to be granted where works alter the profile of a prominent roof.

What are the technical considerations?

- Flat roof insulation raises the roof height by around by around 100 – 200mm.
- Care must be taken to preserve the historic roof profile, eaves or verge details and any other significant features. Where a flat roof is surrounded by a parapet, insulating the roof is unlikely to affect the appearance of the house.
- Consideration should be given to additional weight of solar panels if being added later.

Biomass Heating

Policy: Architectural Features Supplementary Planning Document 09

Flues: Where planning permission is required, flues will not be permitted on visible street elevations. They will be permitted on other external elevations provided the location is the least obtrusive achievable and that the size and/or length are kept to the minimum possible.

What are the Air Quality Management considerations?

Find out whether you are in the Air Quality Management Area (AQMA) or in a Smokeless Control Area on the council website (search for 'air quality').

To prevent local air quality impacts on the existing AQMA, biofuel combustion is discouraged from use in the AQMA.

If you live in a smoke control area, an exempt appliance must be installed; open fireplace wood burning is illegal (Clean Air Act 1956). Exemptions are given for approved appliances used with compatible fuels listed on the Council website.

Biomass heating



Image: Brighton & Hove Eco Open Houses

What is it?

Biomass heating for homes refers to burning wood (logs or pellets) to generate heat for space and water heating and is considered a 'renewable' fuel.

Wood burning stoves are generally used to heat a single room and may have a back boiler for hot water (HW). They offer greater efficiency than an open fireplace.

Pellet boilers can be fully automated and sized to meet all HW and space heating needs. The boiler, water tank and hopper can all be located in an external housing close to the building. Energy boxes and cabins with wood pellet systems can be purchased factory made ready to plug in.

The Renewable Heat Incentive or RHI (at time of writing) provides payment for heat generated by biomass only boilers and biomass pellet stoves with integrated boilers, a stove is not eligible. Biomass fuel used by RHI participants must be sourced from a supplier on the Biomass Suppliers List (www.gov.uk).

Saving on bill	Cost (house)	Permission needed?
Depends on fuel cost	Over £5K	Maybe for flue & store

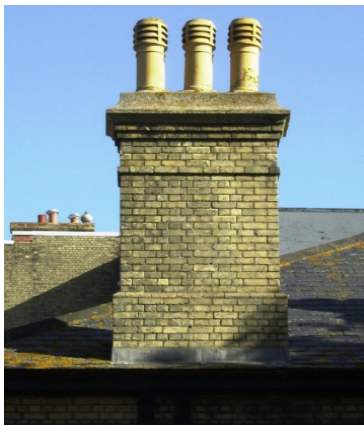
What are the technical considerations?

A biomass boiler installed internally does not need planning permission, but some elements of a biomass system may need planning permission, such as external fuel stores, flues and chimneys.

What are the Building Control considerations?

All new wood heating systems have to comply with building regulations. The best way to ensure this is to use an installer who is a member of a Competent Person Scheme.

Flues and chimneys



What is it?

For biomass systems a flue that meets the regulations for wood-burning appliances must remove and disperse combustion emissions; it could be a new insulated stainless steel flue pipe or an existing chimney.

Is planning permission required?

If your house is covered by an Article 4 Direction planning permission may be required. Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission.

New Wood-burning boiler and stove flues are permitted development as long as:

- the flue is not to be fitted on a wall or roof slope that fronts a highway
- a flue on the rear or side elevation is no more than 1m above the highest part of the roof.

Saving on bill	Cost (house)	Permission needed?
Depends on fuel cost	Over £5K	Maybe

What are the technical considerations?

Essential

- Where a flue will be visible externally it should be discreetly located and should not impact on the street scene or public open space.
- Flues should be clear of windows and neighbouring properties
- Chimney cowls and caps should be sensitively chosen to match the colour of the original chimney pot and the shape should be sympathetic to the shape of the original chimney pot.
- Smoke free appliances and pellets that are smoke free must be used in smokeless zones

To be encouraged:

- Wherever possible existing chimneys should be used for flues for wood stoves

Generally not acceptable:

- the flue is not to be fitted on the principal or side elevation if visible from a highway

Biomass fuel storage



Image: Brighton & Hove Eco Open Houses

Saving on bill	Cost (house)	Permission needed?
Depends on fuel cost	Over £5K	Maybe

What is it?

Wood boilers are larger than gas or oil boilers and require space to store the fuel. This area will need to be accessible for deliveries and feeding the boiler.

For a modern house with 150sq/m of living space, approx. 8cubic/m is sufficient to store a year's supply of wood pellets and 12 cubic/m for logs.

Fuel storage attached to the house may be classed as an extension (Class A) not an outbuilding (Class E); check with the Planning Portal or the planning duty service for confirmation.

Is planning permission required?

This is a complex area for planning permission so it is always best to check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. Where an Article 4 Direction is in place planning permission may be required.

In Conservation Areas buildings and containers at the side of properties require planning permission. Also, planning permission is required where storage is proposed in a garden or yard (etc.) in front of the principal elevation of the building, which will normally be the front of the house.

Other than those situations referred to above, planning permission is not required for a storage building at the rear where it does not front a highway subject to the following limits and conditions:

- Outbuildings to be single storey with maximum eaves height of 2.5 metres and maximum overall height of four metres with a dual pitched roof or 3m from any other roof.
- Maximum height of 2.5m in the case of a building, enclosure or container within 2m of a boundary of the curtilage of the house.
- No verandas, balconies or raised platforms.
- No more than half the area of land around the original house would be covered by the addition or other buildings. 'Original house' means the house as first built or as it stood on 1 July 1948 if built before then (note previous owners may have built an extension).

What are the technical considerations?

Encouraged: Where a new out building is required, for a boiler or fuel storage, care should be taken to position it carefully away from sight from the highway

What are the Building Control considerations?

Clarification should be sought from the Building Control Body on whether the detached outbuilding is exempt from building regulations. Detached buildings within the boundaries of a property can be exempt from the Building Regulations if they are over 1m from the boundary and less than a certain size and do not contain sleeping provision. Installation of any services or fittings within such buildings would also be exempt from the need to make a Building Regulations application. An accredited 'competent' installer should install biomass systems.

Solar technologies

Solar panels



Saving on bill	Cost (house)	Permission needed?
£50-100	Over £3K	Maybe

What is it?

Solar Photovoltaic (PV) panels use solar radiation to generate and supply electricity directly to the home and via a connector to the national grid. The PV array is normally a series of flat plate panels that sit on the south facing roof. A 4kWp system generates annually around 3,800 kWh of electricity more than the average house uses, and saves nearly two tonnes of CO₂. The Government Feed-in Tariff or FIT (at time of writing) provides a payment for electricity generated, and fed into the grid.

Solar thermal collection panels or 'solar hot water' (SHW) use heat from the sun to warm water for domestic use. These provide heat to a water tank, to be stored until needed. Types of SHW include flat plate or 'evacuated tube collectors'. A typical solar water heating system is £3-5,000 for a 3.6m² system which can provide most of your hot water in the summer, but much less during colder weather. The Government Renewable Heat Incentive scheme or RHI (at time of writing) provides payment for heat generated.

Is planning permission required?

Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. If your house is covered by an Article 4 Direction planning permission may be required for roof slopes facing the highway. At present this applies to only a few Conservation Areas but controls may be placed on other areas in future so check with Planning before proceeding. Unless an Article 4 Direction is in place planning permission for solar equipment is not normally required on a house under the following conditions:

- Equipment on a building should be sited to minimise the effect on the external appearance of the building and amenity of the area.
- Panels should not be installed above the highest part of the roof (excluding the chimney) and should project no more than 200mm from the roof slope or wall surface.
- When no longer needed equipment should be removed as soon as practicable.

Planning permission is required where panels are proposed to be fitted to a wall fronting a highway.

What are the technical considerations?

Essential

- Panels should not be installed above the highest part of the roof (excluding the chimney) and should project no more than 200mm from the roof slope or wall surface.
- Panels should not sit above the highest pitch of the roof.
- When no longer needed equipment should be removed as soon as practicable.

Encouraged

- Panels should be positioned in a regular pattern to minimise the visual impact on the roof scape from the street. Panels should be carefully arranged around dormers to minimise visual impact from the street.
- Avoid over shading.
- When selecting panels choose discreet styles to reduce impact. Evacuated tube solar thermal are more visible than flat plate panels but require less space and are suitable for flat roofs as they can sit horizontally without performance being compromised.

Generally not acceptable

- Where planning permission is required it is unlikely to be granted on prominent roof slopes and walls.

What are the Building Control considerations?

Building regulations apply. The ability of the existing roof to carry the load (weight) of the panel will need to be checked and proven. Strengthening work may be needed. Building regulations also apply to other aspects of the work e.g. electrical installation. It is advisable to contact an installer for advice, ideally from Competent Person Scheme and Microgeneration Certification Scheme.

Solar photovoltaic roof slates



What is it?

Solar Photovoltaic (PV) roof slates are designed to be used in place of ordinary roof slates. A system will typically cost about twice as much as an equivalent panel system but would be encouraged where panels are not appropriate. The Government Feed-in Tariff or FIT (at time of writing) provides a payment for electricity generated, and electricity fed into the grid.

What are the technical considerations?

Encouraged: Where slates are replaced, the council will accept the use of artificial slate where this would not harm the appearance of a uniform or consistent group of buildings.

Saving on bill	Cost (house)	Permission needed?
£50-100	Over £5K	Maybe

Is planning permission required?

If your house is covered by an Article 4 Direction **planning permission may be required** for roof slopes facing the highway. At present this applies to only a few Conservation Areas but controls may be placed on other areas in future so it is advisable to check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission.

Where the existing roof has a slate covering, the use of solar slates would be encouraged as an alternative to solar panels where visible.

What are the Building Control considerations?

Building regulations apply to electrical installation. The ability of the existing roof structure to carry the weight of the slates must be checked and proven. It is advisable to contact an installer for advice, ideally from Competent Person Scheme and Microgeneration Certification Scheme.

Air source heat pumps

Air source heat pumps



What is it?

Air source heat pumps (ASHP) produce heat. They take low temperature heat from the surrounding air and upgrade it to a higher temperature to heat water in a cylinder. ASHPs run on electricity but are classified as renewable technology. Heat pumps work more efficiently when homes have high levels of airtightness; older properties are generally less airtight, therefore it is always recommended that the fabric of the house be improved first. The Govt. Renewable Heat Incentive or RHI (at time of writing) provides payment for heat generated. The heat pump is housed in a box outside that is generally about 1-2m², they are fan operated and emit low level operational noise.

Saving on bill	Cost (house)	Permission needed?
£50-100	Over £3K	Maybe

Is planning permission required?

Because this is a complex area, it is advisable to Check with Planning via the council website www.brighton-hove.gov.uk/planning or on the Planning Portal: www.planningportal.co.uk/permission. Generally planning permission is not required in Conservation Areas unless installed on a wall or roof which fronts a highway and if nearer to any highway which bounds the property than any part of the building. To be permitted development, ALL the limits and conditions listed below must also be met:

- Development is permitted only if the ASHP installation complies with the [Microgeneration Certification Scheme Planning Standards](#) or equivalent standards.
- The ASHP's outdoor compressor unit (including housing) must not exceed 0.6 cubic/m.
- Only the first installation of an ASHP would be permitted development; additional ASHPs at the same property require planning permission.
- All parts of the ASHP must be at least 1m from the property boundary.
- Installations on pitched roofs are not permitted development. If installed on a flat roof all parts of the ASHP must be at least 1m from the external edge of that roof.

In addition, the following conditions must also be met. The air source heat pump must be:

- sited, so far as is practicable, to minimise its effect on the external appearance of the building and its effect on the amenity of the area.
- used solely for heating purposes.
- removed as soon as reasonably practicable when it is no longer needed for microgeneration.

It is advisable to discuss these limits and conditions with the Planning Authority.

What are the technical considerations?

Encouraged: Care should be taken to locate the external unit in a discreet position.

What are the Building Control considerations?

Building regulations apply in relation to the electrical safety of the unit. It is advisable to contact an installer who belongs to the Microgeneration Certification Scheme and the relevant competent person scheme.

Further information

Sources of advice, information and learning

Planning Portal	www.planningportal.gov.uk/permission
Energy Saving Trust (EST)	www.energysavingtrust.org.uk
EST Energy Efficiency Hotline	0800 512 012
Department of Business, Energy and Industrial Strategy	www.gov.uk/beis (info on the Green Deal, ECO, FIT, RHI)
Competent Person Schemes	www.competentperson.co.uk

National Heritage Organisations & Amenity Societies

Historic England	www.historicengland.org.uk
Society for the Protection of Ancient Buildings	www.spab.org.uk
Historic Environment Local Management	www.helm.org.uk (follow link to Climate Change)
Institute of Historic Building Conservation	www.ihbc.org.uk
Ancient Monuments Society	www.ancientmonumentsociety.org.uk
Sustainable Traditional Buildings Alliance	www.stbauk.org
The Georgian Group	info@georgiangroup.org.uk 020 7529 8920
Brighton Society	www.brighton-society.org.uk
Hove Civic Society	www.hovecivicsociety.org

Renewable Energy

Renewable Heat Incentive (RHI)	www.gov.uk
Feed in Tariff (FIT)	www.gov.uk
Biomass Suppliers List	www.gov.uk
Microgeneration Certification Scheme (MCS)	www.microgenerationcertification.org

Brighton & Hove City Council Planning Policy

All local planning policy can be viewed at: www.brighton-hove.gov.uk/planning

Brighton & Hove City Plan Part One

Brighton & Hove Saved Local Plan, Policy HE6 on Conservation Areas

Supplementary Planning Document 09 - Architectural Features

Planning Advice Note 08 - Householder guidance on external wall insulation

Funding

Energy Saving Trust: www.energysavingtrust.org.uk

Department of Business, Energy and Industrial Strategy: www.gov.uk/beis

Brighton & Hove Energy Services Co-operative: www.bhesco.co.uk

Your Energy Sussex: www.yourenergysussex.org.uk

Other helpful sources of information and learning

See examples of energy efficiency measures installed during Brighton & Hove Eco Open House events
www.ecoopenhouses.org

Courses on sustainable building www.brightonpermaculture.co.uk and www.lowcarbon.co.uk

**For further information contact:
Brighton & Hove City Council**

Planning Duty Service

Telephone: 01273 292222

Email: planning.applications@brighton-hove.gov.uk

Website: www.brighton-hove.gov.uk/planning

Building Control Body/Building Regulations

Telephone: 01273 292050

Email: building.control@brighton-hove.gov.uk

Website: www.brighton-hove.gov.uk/buildingcontrol

Heritage Telephone: 01273 292222

Email: conservation@brighton-hove.gov.uk

Website: www.brighton-hove.gov.uk/heritage