Background paper 3

The regulatory framework: legislation, policies, standards and guidance

The following is a brief review of the legislation and public policies at central and local government levels that relate to this study, and of the main sources of officially-recognised standards and guidance that influence or condition their implementation.

National and international level

EU legislation

There are a number of policy instruments employed at the European level, the most important of which are EU regulations and EU Directives. Directives are legally binding on EU member state governments. They determine the required outcomes, without dictating the means of achieving these. The failure to achieve the required results can result in the imposition of heavy fines. Many directives relate to health, safety and environmental issued. Of particular importance to this study are the Directive on the Energy Performance of Buildings and the Landfill Directive. There are a series of other relevant directives relating to greenhouse gas emissions, water, urban wastewater, ambient air quality, environmental noise, waste and environmental impact assessment.

The UK -The Climate Change Bill

This bill is currently going through Parliament and will legally commit current and future UK governments to meeting national targets for reductions in carbon dioxide emissions (of at least 26% by 2020 and at least 60% by 2050).[1] It will be the first legal framework of its kind anywhere in the world. The bill will require governments to publish 5-yearly carbon budgets and set up a Committee on Climate Change that will advise on the levels of carbon budgets, the balance between reductions and the use of carbon credits, and whether the 2050 reduction target should be increased.

The Government will be required to assess climate change risks and empowered to set up carbon trading schemes and pilot waste reduction schemes. The Climate Change Bill follows on from the Government's Climate Change Programme, published in 2006, setting out policies and priorities for action in the UK and internationally, and the Climate Change and sustainable Energy Act 2006 obliging the Government to report annually to Parliament on greenhouse gas emissions in the UK and action to reduce these emissions.[2]

The Renewables Obligation (RO) and Renewable Transport Fuel Obligation (RFTO)

The Renewables Obligation (introduced in 2002 under the Utilities Act of 2000) requires UK electricity suppliers to increase their renewable generation capacity to 15% by 2015 (from a level of 5.5% in 2005-6).[3] Under the Microgeneration Strategy

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[1] Parliament UK. *Climate Change Bill [HL] 2007-08*. <http://services.parliament.uk/bills/2007-08/climatechangehl.html>.

[2] Office of Public Sector Information. 2006. *Climate Change and Sustainable Energy Act 2006*: 2006 *Chapter 19.* <www.opsi.gov.uk/ACTS/acts2006/60019--a.htm#2>.

[3] The Carbon Trust. *Renewable Obligation*. <www.carbontrust.co.uk/climatechange/policy/renewables_obligation.htm>; Ofgem. Renewables Obligation - What is the Renewables Obligation (RO)? <www.ofgem.gov.uk/Sustainability/Environmnt/RenewablObl/Pages/RenewablObl.aspx>.

of 2006, the Renewables Obligation provides for a small level of subsidy to individuals and companies producing less than 50kW. Renewables Obligation Certificates are issued which can be sold in the market to major suppliers to help them meet their obligations. The Strategy also allows for micro-generators to sell their surplus power to suppliers, again on an open market basis.

As part of the 2004 Energy Act, the Renewable Transport Fuel Obligation Programme obliges fuel suppliers to ensure that 5% of all UK transport fuel sold comes from a renewable source by 2010. According to the Department for Transport, the transport sector is responsible for 25% of emissions and the RTFO expects to reduce the carbon emissions from road transport in 2010 by about 2.6-3.0 million tonnes.[4]

Climate Change Levy (CCL)

The Climate Change Levy is a tax on the use of energy in the non-domestic sector.[5] It was originally expected to raise fuel bills by 8-10% but offsets this through cuts in employers' National Insurance contributions. Its aim is to encourage users to improve energy efficiency and reduce emissions of greenhouse gases. Energy intensive business users can receive an 80 per cent discount from the Climate Change Levy, in return for meeting energy efficiency or carbon saving targets.

There are exemptions or partial exemptions for Combined Heat and Power (CHP) and electricity from renewable sources. Gas is charged at £0.0015 per kilowatt hour and electricity at £0.0043 per kilowatt hour. These rates have been frozen since the CCL was introduced in 2001 but will now rise in line with inflation. However, as recent fuel costs have risen substantially, and continue to outpace the general level of inflation, the relative weight of the cost savings incentives behind the CCL is correspondingly reduced.

Carbon Trading Schemes

A UK Emissions Trading Scheme (ETS) was launched by Defra in 2002 followed by the EU Emissions Trading Scheme that began in 2005. According to Defra, as greenhouse gases have the same effect wherever they are emitted 'the rationale behind emission trading is to ensure that the emission reductions take place where the cost of the reduction is lowest thus lowering the overall costs of combating climate change'. Participating companies are allocated allowances and emissions trading allows companies to emit in excess of their allocation of allowances by purchasing other companies' surplus allowances from the market.

The UK ETS was a voluntary scheme involving 33 organisations and resulting in savings of 7.2 million tonnes of CO_2e[6], as against a target of just under 4 million

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[4] Department for Transport. *About the RTFO Programme*. <www.dft.gov.uk/pgr/roads/environment/rtfo/aboutrtfo>.

[5] Defra. *Climate Change agreements*. <www.defra.gov.uk/environment/climatechange/uk/business/ccl/index.htm>; see also HM Revenue & Customs. <www.customs.hmrc.gov.uk>.

[6] Carbon dioxide equivalent: The Carbon Trust. *Glossary to Carbon Footprinting*. <www.carbontrust.co.uk/solutions/CarbonFootprinting/carbon_footprinting_glossary.htm>.

tonnes. It ended in December 2006.[7] It is being replaced by the Carbon Reduction Commitment (CRC) scheme, announced in the Energy White Paper 2007 and starting in 2010, applying mandatory emissions trading to cut carbon emissions from large commercial and public sector organisations.[8] This covers both electricity and direct energy use by large business and public sector organisations whose annual half-hourly metered electricity use is above 6,000 MWh (equivalent to an annual energy bill of around £500,000).[9] This would include major retailers trading on Oxford Street. Boots, for example, has 2,500 stores in the UK and Ireland, and an annual energy bill of £30 million.[10]

CRC covers about 10% of UK economy-wide emissions. It is aiming to be 'light touch', relying on self-certification of emissions and will focus on emissions outside Climate Change Agreements and the EU ETS. (The EU Energy Trading Scheme, introduced in the European Council's Trading directive of 2003 is a cap and trade scheme covering the power sector and energy-intensive industrial sectors responsible for about 46% of European emissions. It is now in its second phase 2008-12 covering all greenhouse gases.)[11]

Domestic and personal carbon schemes; carbon offsetting

In partnership with the Energy Saving Trust the Government has set up the ACT ON CO_2 advice line providing individuals with advice on how to measure and reduce their carbon footprint. This covers energy efficiency, micro-generation and renewable energy, water efficiency and waste reduction. It links with offers from energy companies who are required to provide help to reduce energy use at home - including subsidies for energy saving measures.[12]

There is currently no policy relating to domestic and personal carbon trading but such a scheme could be envisaged in the future as a consequence of deepening impacts of climate change or fuel rationing as a consequence of peak oil or peak gas effects on supply. Such theoretical energy rationing schemes go under various names such as personal carbon allowances, tradable permits, carbon rationing and domestic tradable quotas. According to David Fleming, Domestic Tradable Quotas (DTQs) are a scheme of 'national carbon allowances' for rationing and reducing the use of fossil fuels, by sharing out access to fuel among every individual and organisation in the economy.[13]

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[7] Defra. *UK Emissions Trading Scheme*.
<www.defra.gov.uk/environment/climatechange/trading/uk/index.htm>.
[8] Defra. *Carbon Reduction Commitment*.
<www.defra.gov.uk/environment/climatechange/uk/business/crc/index.htm>.
[9] The Carbon Trust. *Carbon Reduction Commitment*.
<www.carbontrust.co.uk/climatechange/policy/CRC.htm>
[10] The Carbon Trust. *Private Sector carbon Management*.
<www.carbontrust.co.uk/carbon/PrivateSector/default.htm>.
[11] The Carbon Trust. *The EU Emission Trading Scheme.*
<www.carbontrust.co.uk/climatechange/policy/eu_ets.htm>.
[12] Defra. *Action in the UK - Individual and community action*.
<www.defra.gov.uk/environment/climatechange/uk/individual/index.htm>; Energy Saving Trust.
<www.energysavingtrust.org.uk>.
[13] Fleming, D. *Domestic Tradable Quotas (DTQs): A practical policy response to climate change and oil depletion*. <www.dtqs.org/>.

According to the Carbon Trust, an offset is an 'emissions reduction, commonly resulting from a project undertaken in the developing world, which has been sold to compensate for emissions elsewhere. Offsets are commonly used to net off corporate emissions so that an organisation can claim to be carbon neutral.'[14] In practice, problems have been reported with the verification of carbon offset schemes with different ways being used for measuring them. The Carbon Trust advocates a three stage approach, with the priority being given first to the reduction of an organisation's direct transmissions, then to reducing emissions in the supply chain. Carbon offsets can then be brought in to enable an organisation to achieve carbon neutrality.[15]

The Energy Saving Trust, the Carbon Trust

The Government established the Energy Saving Trust in 1993. This is a non-profit organisation offering free advice on reducing emissions of carbon dioxide CO_2 through promoting the sustainable and efficient use of energy.[16]

The Energy Saving Trust has a particular focus on the impacts of individuals and households, offering advice on energy savings products, home improvements and micro-generation. Its starting point is that, in 2005, 42% of the UK's 554 million tonnes carbon dioxide emissions came from every day energy use in homes (27%) and from individual passenger travel (15%).[17]

Later this year, the Energy Saving Trust will launch the Green Homes Service aimed at overcoming the information barrier preventing homeowners from carrying out effective retrofitting measures.

Whereas the Energy Saving Trust is particularly targeted at individuals and the domestic building sector, The Carbon Trust concentrates on businesses and organisations. It is the body set up by the Government in 2001 to enable the non-domestic sector (commercial and public sector organisations) to become more carbon efficient and develop and innovate low carbon technologies.[18] The Carbon Trust is business or organisation focused rather than building focused although an effective carbon reduction strategy would obviously include energy savings in buildings alongside carbon reductions in production processes and transportation.

The Carbon Trust provides advice to organisations on how to measure their carbon footprints and on the internationally accepted standards for corporate emissions reporting, such as ISO 14064 and the Greenhouse Gas (GHG) Protocol developed by the World Resources Institute and the World Business Council for Sustainable Development to cover project emissions reporting and corporate emissions reporting. Its corporate emissions reporting standard provides a methodology for calculation of

[14] The Carbon Trust. *Glossary to Carbon Footprinting*.
<www.carbontrust.co.uk/solutions/CarbonFootprinting/carbon_footprinting_glossary.htm>.
[15] The Carbon Trust. *Three stage approach to developing a robust offsetting strategy*.
<www.carbontrust.co.uk/Publications/publicationdetail.htm?productid=CTC621&metaNoCache=1>
[16] Energy Saving Trust. *Corporate.* <www.energysavingtrust.org.uk/about_us>.
[17] Ibid.
[18] The Carbon Trust. <www.carbontrust.co.uk/default.ct>.

a carbon footprint (which should cover all GHGs and be expressed in carbon equivalent, CO_2e).[19]

Corporate Social Responsibility and standards for environmental management

The Carbon Trust web-site is an effective source of information and guidance for businesses intending to incorporate Corporate Social Responsibility (CSR), as it relates to climate change, into their business strategies. Government policy, through a range of instruments, is directed at making it increasingly cost effective for business to reduce the carbon emissions resulting from their energy use and its generation. However, there is ample evidence that many businesses are also taking a more proactive stance towards their environmental policies from a CSR point of view.

There are several reasons behind this. Large, national and international companies, in particular, have a marketing advantage to gain or maintain through being seen to be environmentally-friendly. Implementing environmental policies can save costs and facilitate support from government and local government for new investment. Senior executives and shareholders, including institutional investors, are increasingly environmentally-conscious. While some companies are more proactive than others, few enjoy the bad publicity that comes with being exposed as environmentally-harmful by green pressure groups.

The process is important not only for the companies involved but because, in order to meet the requirements of continuous improvement in environmental performance that such polices normally involve, they also need to take measures to green their supply chains. Large companies can therefore use their position of relative market dominance to draw smaller suppliers into a widening net of improved environmental standards in production.

There is also a widening range of support for companies wishing to become more green, not only from Government-supported organisations like the Carbon Trust, or the Building Research Establishment (BRE) (see BRE Environmental Assessment Method (BREEAM) below), but from a growing range of companies offering research, information, advice, guidance and support tools such as specialist software.

The International Standards Organisation (ISO) is the de facto body for the international certification of environmental performance. Based in Geneva, ISO is a non-governmental body that is based on a network of representatives of national standards institutes for 157 countries. Apart from ISO 14064, relating to greenhouse gas emissions, ISO 14001 provides a standard for a more general Environmental Management System (EMS) to monitor improved performance by organisations across a range of environmental areas.

In Scotland, the Business Environment Partnership (BEP), was set up in 1998 to provide free and subsidised assistance with environmental management to small to medium sized businesses throughout Scotland. It has helped 54 companies ranging in size from 2 to 240 staff achieve recognition under ISO14001 and BS8885.[20]

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[19] The Carbon Trust. *Glossary to Carbon Footprinting*.
<www.carbontrust.co.uk/solutions/CarbonFootprinting/carbon_footprinting_glossary.htm>

[20] Business Environment Partnership. *Welcome to BEP Environmental Management Systems*.
<www.thebep.org.uk/index.php?page=iso-home>.

Implementing an EMS is time consuming and can be expensive. Despite the number and range of small businesses operating in Soho, and elsewhere in Westminster and London, there is little or no focused public sector support for this approach directed towards SME's.[21]

Regulation of waste

Under the EU Landfill Directive, by 2010, England will need to reduce the amount of biodegradable municipal waste diverted to landfill to 75 per cent of that produced in 1995, going down to 50 per cent in 2013 and 35 per cent by 2020.[22]

In April 2005 the Landfill Allowance Trading Scheme was launched to provide a framework for local authorities to help meet these targets. Though not yet implemented, it aims to provide a cost effective way of enabling England to meet its targets under the Directive.[23] The Government also provides specific grant funding to local authorities for improved recycling and composting.

Defra has implemented a wide range of measures to help businesses and local authorities in their management of waste. Its policies for sustainable management of waste are set out in its Waste Strategy for England 2007.

According to its web site [24]: 'Defra helps businesses by funding a range of delivery programmes that provide resource efficiency advice. Between 2005 and 2008, part of this support has been provided under the Business Resource Efficiency and Waste (BREW) Programme, which has been returning landfill tax to business. BREW is provided £284 million of funding over the Spending Review period 2005-2008, as part of a larger £650 million programme to create 'a low carbon, resource efficient future'. BREW funding has been delivered through a number of bodies working on business resource efficiency.

However, as a result of the Comprehensive Spending Review, BREW will case to exist and funding is now being focused on 'a shift from funding environmental support to individual companies, to influencing the wider business community to take action.' Whereas 'previously individual companies were given free or low-cost environmental support that reduced costs, increased sales and in time raised profits for the companies concerned, in the future companies will increasingly be supported by an improved evidence base for change.'[25]

Among the main beneficiaries of the soon to be defunct BREW, were the Carbon Trust and Waste and Resources Action Programme (WRAP). WRAP is another government-initiated private company set up to channel funding and offer support. Its aim is to help 'individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change.'[26]

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[21] ISO 9001 is a standards system developed for small and medium sized enterprises, but is concerned with quality management in general, rather than environmental management.
[22] Defra. *What happens to waste.* <www.defra.gov.uk/ENVIRONMENT/waste/topics/index.htm>.
[23] Defra. *Landfill Allowance Trading Scheme.*
<www.defra.gov.uk/Environment/waste/localauth/lats/index.htm>.
[24] Defra. *Business Resource Efficiency and Waste Programme (BREW).*
<www.defra.gov.uk/environment/waste/brew/funding0809.htm>.
[25] Ibid.
[26] WRAP. *What is WRAP?* <www.wrap.org.uk/wrap_corporate/about_wrap/what_is_wrap/index.html>.

This programme offered help to SMEs on how to improve on recycling.[27] WRAP is to be discontinued and it is unclear what there will be anything to replace it under the new Environmental Transformation Fund (see 5.128).[28]

Recognising the degree of confusion among businesses about the range of publicly-funded schemes providing business support (grants, subsidies and advice) the Government is undertaking to reduce the 3,000 schemes that already exist to 100 or less by 2010. Yet another programme, the Business Support Simplification Programme, has been set up by the Department for Business Enterprise and Regulatory Reform (BERR) to guide this process.[29]

In the meantime, the business sector, particularly small businesses that make up the bulk of occupiers in Soho have nothing in the way of focused public support for their contribution to making the area more sustainable.

Planning policies and guidance

Central government lays down the framework for planning in relevant Acts of Parliament and in published guidance – previously Planning Policy Guidance Notes (PPGs), being supplanted by Planning Policy Statements (PPS). Central Government legislation and guidance is interpreted at the local authority level in published plans and guidance, previously in the form of a Unitary Development Plan, gradually being replaced by a new system of Local Development Frameworks, intended to be a more flexible portfolio of related planning policy documents and guidance.

Planning Policy Statement 1: Delivering Sustainable Development

PPS1 sets out the Government's general objectives for the planning system and its understanding of how spatial planning can help deliver sustainable development. Effective protection of the environment and prudent use of resources are two of the four aims of the Government's 1999 Sustainable Development Strategy.[30] This policy statement lays out the general principles for how development plan policies should address these issues, focusing in particular on climate change mitigation and adaptation, protection of the countryside, flood risk and waste management and improved resource use efficiency.

A Supplement to PPS1, published in December 2007, sets out the Government policy for planning for climate change in further detail. This document is mainly concerned with strategic matters, including Regional Spatial Strategies (including the London Plan – see below) and Local Development Documents. There is a particular focus on delivering renewable and low-carbon energy generation through the planning system.

There is also a section on local requirements for sustainable buildings which requires that 'planning policies should support innovation and investment in sustainable

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[27] WRAP. *Recycle at Work* <www.wrap.org.uk/businesses/start_recycling_at_work/index.html>.
[28] WRAP. *SME Recycling Programme*. <www.wrap.org.uk/businesses/sme_recycling_programme/index.html>.
[29] BERR - the Department for Business Enterprise and Regulatory Reform. *Business Support Simplification Programme*. <www.berr.gov.uk/bbf/simplifying-business-support/page44805.html>.
[30] The others are: social progress which meets the needs of everyone' and 'the maintenance of high and stable levels of economic growth and employment'. PPS1. p2.

buildings and should not, unless there are exceptional reasons, deter novel or cutting-edge developments'.[31] Local policies for sustainable buildings should focus on development area or site specific opportunities; specify national sustainable buildings standards; be consistent with policies on decentralised energy and not require local approaches to forms of construction or measures of performance ' except for reasons of landscape or townscape'.[32]

Conservation Area legislation and guidance

The Planning (Listed Buildings and Conservation Areas) Act 1990 (Section 69 and 70) gave powers to local planning authorities to define an area, 'the character or appearance of which it is desirable to preserve or enhance' as a Conservation Area.[33] It aims at protecting the character of a neighbourhood or area as a whole, rather than specific buildings, which are covered by the Listed Buildings legislation. Demolition requires particular consent within a Conservation Area and any new developments should preserve or enhance the existing distinctive character.

The Government's guidance for Conservation Areas is covered by Planning Policy Guidance Note 15: Planning and the Historic Environment (PPG15), published in 1994. Section 4 deals with Conservation Areas and sets out in some detail the requirements for local planning authorities to carefully consider, define and provide a rationale for the designation of such areas.

PPG15 emphasises (4.2) that the quality of historic areas depends on much more than the quality of individual buildings, and takes into account such things as layout and property boundaries, mix of uses and a range of architectural, street and urban design factors.

Conservation Area status is not be seen as an end in itself and policies will always need to be developed to clearly identify what it is about the area that needs to be preserved or enhanced and the means whereby that objective can be met, including generating awareness and encouraging local property owners to take the 'right sort of action for themselves'. (4.9)

Regional level

Greater London Authority and the London Plan

The Mayor of London has responsibility for strategic planning in Greater London, the GLA being the regional authority.[34] Strategy spatial development policies are set out in the London Plan, first published in 2004 and most recent alterations dating from October of 2007. The plans of the London boroughs should conform generally with The London Plan. The Mayor should be consulted on planning applications of

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[31] Department for Community and and Local Government. 2007. *Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1*. p12. <www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/ppsclimatechange/>.

[32] Ibid. p17-18.

[33] The Planning (Listed Buildings and Conservation Areas) Act 1990 was basically a consolidation of previous legislation concerning Conservation Areas and Listed Buildings included in previous Planning Acts and other legislation. The 1969 Civic Amenities Act first gave local Authorities the power to designate Conservation Areas and Listed Buildings legislation goes back even further.

[34] Mayor of London, the London Assembly and the Greater London Authority. Planning: what is the Mayor's role in planning? <www.london.gov.uk/gla/planning.jsp>.

strategic importance, and has the power to refuse planning permission on strategic grounds.[35] Some elements of Westminster's Draft Core Strategy (see below) relate to development policies set out in the London Plan.

Section 4A of the London Plan deals with 'London's metabolism: using and managing natural resources'. This covers a number of areas including waste. Under the EU landfill directive and other directives on waste, the Mayor works with the government, the boroughs, the Environmental Agency, statutory waste disposal bodies and operators to minimise waste.

Minimum targets for London (30% by 2010; 33% by 2015) are in line with Government legislation although, in the Plan, the previous Mayor set out his aim of trying to increase them to 50% and 60% respectively and limit waste incineration to non-recyclable residual waste. Energy recovery from advanced conversion techniques (gasification, pyrolysis or anaerobic digestion – see glossary), rather than incineration, is promoted as an option once reduction, re-use, recycling and composting routes have been exhausted. A self-sufficiency target aims to increase the level of waste being managed within London from 60% to 85% by 2020.

The new Mayor has not said anything about revising waste targets as part of his initial set of priorities. However, unlike the previous Mayor, he has committed to working together with the London boroughs in the London Waste and Recycling Board, set up by the government last year with with a £60 million budget, and now with £24 million of additional funding from the LDA.

Other London Plan policies set out the strategic framework for reducing pollution and improving air quality (4A.6) and energy efficiency and renewable energy (4A.7; 4A.9). These policy aims are to be achieved through, among other things, doubling the Combined Heat and Power (CPH) capacity of 2000 by 2010, integrating land use and transport policy (3.A), promoting sustainable design and construction (4.C) and seeking to reduce the environmental impacts of transport. Other policies relate to efficient use of water (4A.11), reducing noise (4A.14) and developing policies for tackling the effects of climate change in London identified in the work of the London Climate Change Partnership (4A.15).

Section 4B deals with urban design issues and promotes the principles of design for a compact city (4B.1), maximising the potential use of sites (4B.3) suggesting plot ratios for new developments of 3:1 to 5:1 (about the current level of intensity of existing development in Soho). The new Mayor has reversed the previous emphasis on promoting tall buildings and will amend the London View Management Framework, which replaced the Government's 1991 Regional Policy Guidance RPG3A, to help reinstate the view protection of St Paul's and the Palace of Westminster originally provided.

Policy 4B.10 commits the Mayor to work with strategic partners to protect and enhance London's historic environment. Policy 4B.11 requires the boroughs to do the same and to take into account the strategic London context in their conservation policies. Policy 4B.13 commits the Mayor and requires the boroughs to support conservation-led regeneration where they bring existing buildings into relevant use and meet other community and regeneration objectives.

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[35] Ibid.

The Greater London Authority has published several sources of good practice that are relevant to this study including *Sustainable Design and Construction: the London Plan Supplementary Guidance,* 2006, which sets out essential and preferred standards; the *London Renewables Toolkit,* 2004; and *Living Roofs and Wall Technical Report: Supporting London Plan Policy,* 2008.

A number of London-wide organisations have been set up to deal with sustainability issues including the London Sustainable Development Commission, the London Climate Change Partnership, the London Energy Partnership, the London Building Partnership, London Sustainability Exchange, London 21, London Hydrogen Partnership and the London Renewables Steering Group. The Green Homes Advice Service and Green Homes Concierge Service are part of the previous Mayor's Green homes Programme.

Local Government level

Westminster City Plan and Draft Core Strategy

The Westminster City Plan is the 'sustainable community strategy' for the city, required under the Local Government Act 2000.[36] It sets a vision for Westminster from 2006-16 and the key aims and priorities to achieve this vision. The City Plan is the 'umbrella strategy' for all other strategies and plans developed by partners.[37]

The 'One City Programme' sets out the Council's five year city-wide vision from 2006 'to deliver a world class city, built on the delivery programmes of Order, Opportunity, Renewal and Enterprise.' 'One City' replaces the previous 5-year 'Civic Renewal' programme, which has run between 2001 and 2006 and focused on 'renewing and regenerating' the built environment in the heart of London. 'The focus of the new programme is on communities: empowering people to play a fuller life in the city.'[38]

The Westminster City Plan sets the context for the City's Local Development Framework. At the heart of the LDF is the Core Strategy document, which sets out the basic vision for the pattern and location of development and is intended to be the 'spatial expression' of the City Plan.[39] Most local authorities have yet to agree their Core Strategy, including Westminster City Council and, whilst this is the case, the Unitary Development Plan of 2007 remains in force as the key statutory document. Westminster is currently in the consultation phase of its Draft Core Strategy. An initial sustainability appraisal has been undertaken for the Issues and Options for the Core Strategy.[40]

The Draft Core Strategy identifies the following strategic challenges:[41]

1. How to mitigate against climate change and ensure that the City plays its part in delivering sustainable development

[36] Department of Planning and City Development, Westminster City Council. May 2007. Westminster's Local Development Framework: Issues and Options relating to the Core Strategy.
[37] Mayor of London, the London Assembly and the Greater London Authority. Planning: what is the Mayor's role in planning? Op. cit.
[38] Tribal Resourcing. *About Westminster*. <www.tribalresourcing.com/westminsterfirst/about-wm.htm>.
[39] Ibid.
[40] Westminster City Council. *Sustainability Appraisal (SA) and Appropriate Assessment (AA)*. <www.westminster.gov.uk/environment/planning/ldf/sustainability-appraisal-report.cfm>.
[41] Ibid.

2. How and where to accommodate growth and change and how to maintain economic diversity and vitality
3. How to strike the balance between growth in housing and employment whilst meeting our housing challenges
4. How to support Westminster's role as a world class City while maintaining local distinctiveness
5. How to build cohesive, tolerant and neighbourly communities
6. How to balance the needs of the night time economy with a large and growing residential population and the needs of the day time economy.

Soho already plays a significant role in addressing the second, fourth and sixth of these challenges, and has a potential key role to play, according to the findings of this report, in addressing the first.

Unitary Development Plan policies

Soho forms part of Westminster's Central Activity Zone (CAZ) according to the 2007 Unitary Development Plan (UDP), and retained within the Draft Core Strategy. In Chapter 1, the UDP sets out policies to maintain the special existing character of land uses within the CAZ an along its principal frontages. The UDP also encourages mixed-use development, to introduce residential accommodation, where increases in commercial floor space are being proposed.

The UDP will remain the statutory plan until the City's LDF Core Strategy is adopted (2010 at the latest). Transport policies are covered in Chapter 4 while, in Chapter 9 of the Plan, the City Council sets out a thoroughgoing set of environmental policies. The 17 policies cover all aspects of the environment including buildings and land, environmental appraisal, planting, landscaping and open space, noise and air pollution, light pollution daylight, sunlight and environmental quality, waste management and nature conservation and biodiversity

The Supplementary Planning Guidance (SPG) on Sustainable Buildings in 2003 supplements environmental policies in the Unitary Development Plan, in particular Policy ENV 1: Sustainable and Resource-Efficient Buildings and Policy SC21 in Chapter 10, which sets standards and controls for 'green buildings'. Policy SC21 on Green Buildings states: 'The City Council will encourage and may require, subject to other policies in the Plan (particularly those in Chapter 9. Conservation and Design), the construction/refurbishment of buildings in accordance with methods recommended by BREEAM.

Developers are asked to consider sustainable design principles and complete the sustainable buildings element of the Environmental Performance Statement (see Policy ENV2 and Annex 9.1(which includes a checklist of questions about all aspects of the environment contained in the Council's policies). The Council requires this to be submitted with any application and considers in its assessment. An independent Sustainability Appraisal is required on all large developments, and encouraged on

medium-sized developments.[42] While the Council recommends the use of BREEAM methods, but welcomes the use of other methods such as Arup's SPEAR™, Housing Corporation Sustainability Works™ and WSP Group SAT™.

Chapter 10 of the UDP sets out the principles and policies for Urban Design and Conservation. However, there is almost no reference to sustainability in these policies, or indeed in the many supporting supplementary planning guidance policies, most of which date from before the publication of the SPG on Sustainable Buildings in 2003.

Policy Des9 covers conservation areas, largely reiterating national policy guidance with the specific requirement that 'buildings identified as of local architectural, historical or topographical interest in adopted Conservation Areas will enjoy a general presumption against demolition. However, demolition may be permitted where the building concerned makes 'a negative or insignificant contribution to the character or appearance of the area' or the proposed replacement results in 'an enhancement of the character or appearance of the area.'[43]

Some sites in Soho around Tottenham Court Road tube station form part of a proposed cross-borough 'Opportunity Area'[44] providing up to 5,000 new jobs and 1,000 under the GLA's Alteration to the London Plan of September 2007. There are planning briefs for the affected sites. Within the Draft Core Strategy a number of buildings in the Study Area around the Oxford Street and Charing Cross Road junction are viewed as potential development sites, some of which have planning briefs relating to the proposed Crossrail line 1 route. The Berwick Street area and Marshall Street Baths are regarded as Opportunity Sites within Soho proper (see Figure BP 3.1).

[42] A 'large development' includes any residential development over 50 units or office development over 2,000m^2. A 'medium-size development' includes any residential development from 10 to 50 units, office development from 200 to 2,000m^2 or entertainment uses (Class A3/D2) over 500m^2.

[43] Westminster City Council. 2007. *Unitary Development Plan of the City of Westminster*. p529.

[44] Mayor of London, the London Assembly and the Greater London Authority. Park Royal Opportunity Area Planning Framework. 'The Opportunity Area Planning Framework is a non-statutory planning document issued by the Mayor of London. It is consistent with, and derives from the London Plan and other Mayoral strategies. Its purpose is to assist with the delivery of cross-borough projects, provide clarity to developers and investors, and guide borough planning decisions and policies.' <www.london.gov.uk/mayor/planning/park-royal.jsp>

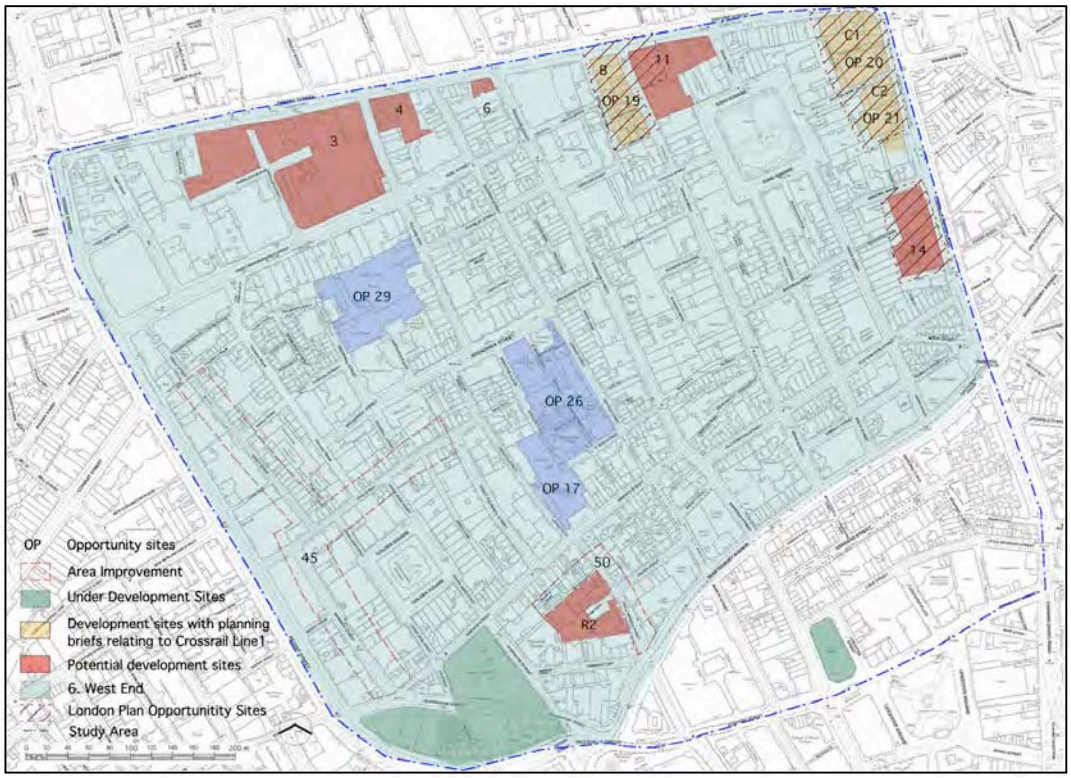

Figure BP 3.1: Local plans for Soho in Westminster's Unitary Development Plan and Draft Core Strategy

(Source: Westminster City Council on Ordnance Survey map)

The actual and potential development sites along the southern edge of Oxford Street are seen as an immediate area of focus for the regeneration of East Oxford Street in the *ORB – Draft Action Plan for Oxford, Regent and Bond Streets.* This part of the larger plan for improving the public realm in the area of these three key shopping streets. However, these sites are also an opportunity for Soho forming the northern boundary of the district. Whilst ORB aims to create new ''oases' along its length (on the northern side in East Oxford Street) and links through St Giles Circus to Covent Garden, northern Soho itself, and particularly Soho Square, is already an oasis off Oxford Street.

Soho is a community focus within West End Local Area Renewal Partnership of local service providers whose priorities include community project space, action on night-time anti-social behaviour, improving night-time transport options, extending and revitalising the Berwick Street market and improving the retail business mix.

A Soho Action Plan was adopted in 2007 following extensive local consultation and provides a 'sustainable communities' focus for Soho. It sets out a series of actions to be led by Council departments or other agencies for the short, medium and long term. Actions that relate, in particular, to the environment and to this study include[45]:

> 02. Develop a strategy to deal with ambient noise levels in Soho (including noise from late-night traffic, air conditioning units, patrons of licensed premises and waste collections): long-term; Community Protection Department.

[45] Westminster City Council 2007. *Soho Action Plan*: Your Thoughts in action, Booklet, London: Westminster City Council, pp44-50.

13. Undertake an audit of the street scene in order to establish a programme of streetscape improvements with local partnership funding including review and rationalise street furniture and signage: short-term; West End Team/Transportation

31. Continue to review loading provisions within Soho, also considering areas where the business mix has changed: long-term; Parking.

32. Support the Clear Zones Delivery Consolidation Scheme working with the Clear Zone Partnership to include Soho within the Clear Zone boundary. long-term; Transportation

46. Investment in an 'Open Spaces Strategy' including biodiversity and reviewing access for disabled people and looking at ways of enhancing golden Square: long-term; Parks and Leisure

47. Carry out a green audit of Soho and review recommendations for implementation: short-term; West End Team/Go Green/CPG/Landowners/English Heritage.

52. Introduce better signage as part of the wider scheme to 'waymark' the West End as part of the Central London Partnership Scheme.

55. Carry out a traffic survey, to include pedestrian priority: short-term; Transportation/West End Team

The 'Renewal' section also lists several improvement and regeneration actions around particular streets and areas including Beak, Kingly and Warwick Streets, Berwick Street, Marshall Street Leisure Centre and Great Windmill Street and Ham Yard.[46] Last year, the council adopted a planning brief for the Berwick Street Area which, with its concentration of residential population and active street market, provides a strong community focus in Soho. A planning brief for Marshall Street Baths was adopted in 2004.

Elsewhere the Action Plan deals with other transport issues, including the difficulties for bicycle access arising from the area's narrow and one-way streets. There are currently two planned strategic cycle routes through the areas as part of the London Cycle Plus Network that TfL intends to complete by 2010. Opportunities for cycle parking are limited and the planned environmental audit will look at places for cycle stands, along with recycling points, and places to locate on-street charging points for electric vehicles, as part of a greener Soho.[47]

The Soho Action Plan covers key economic and social sustainability issues but also reflects a major concern of the local community with environmental sustainability. Westminster City Council established a Go Green Board and in February 2007, 'committed to recovering its former pre-eminence as an exemplary 'green authority, and contribute to combating climate change'.[48] The aim in Soho is for it to follow the

[46] Ham Yard is identified in the UDP as a Major Development site with a permitted mixed use development, including 53 flats, by Windmill Development.
[47] Ibid. p36.
[48] Ibid.

Council's emerging Sustainable Communities agenda including the *Westminster Biodiversity Action Plan*.[49]

In addition to the *Soho Action Plan,* other adopted planning policies and documents that relate to the study area include the *Chinatown Action Plan, the Chinatown Economic Development Study* (2004) and the *Chinatown Draft Supplementary Planning Guidance* (April 2005), which has not yet been adopted. There is also a *Draft Strategy for Theatreland* and a *Coventry Street Improvement Scheme.*

Leicester Square, which forms part of a separate conservation area to the south of the study area was part of a major review of public spaces, called the West End Public Spaces Study.[50] Along with Soho, Chinatown and Covent Garden, it is part of the West End Stress Area, regarded by the City Council as 'saturated' with entertainment uses that are eroding the character of the areas. This has resulted in an action plan which is part of a Civic Renewal Programme. The Swiss Centre, a 60s building that is part of the study area on the boundary between Chinatown and Leicester Square is now being redeveloped with a new 11-storey building according to a Council planning brief.[51]

Apart from the Action Plans covering the study area, published policy documents include *Sustainable Buildings,* adopted as Supplementary Planning Guidance in 2003 (SPG), and a series of documents on conservation include the *Soho and Chinatown Conservation Area Audit,* and other documents providing general guidance including: *Conservation Areas - A Guide For Property Owners* (1992), *Repairs and Alterations to Listed Buildings* (1996) and *Development And Demolition In Conservation Areas* (1996) and a number of other supplementary planning guidance policies on more detailed conservation matters[52]. The SPG note*, Design Matters in Westminster,* gives very general design guidance on conservation areas and listed buildings.

Some of these documents are very effective in their own right. The *Soho and Chinatown Conservation Area Audit* and *Sustainable Buildings* guidance, in particular, are excellent. However, apart from a leaflet written by Gale and Snowden architects and published by the Social and Community Services Department, *Energy Efficiency in Conservation Areas,* the existing guidance makes little reference to sustainability issues and none provide design guidance specific to Soho.

The Gale and Snowden leaflet, billed as 'a general guide to upgrading the energy efficiency of residential accommodation within City of Westminster Conservation Areas', does cover the basic principles of sustainable renovation, at least as it applies to energy efficiency and to residential properties, although it has no date of publication and may now be out of date. Moreover, as it is not shown on the Planning documents web page, it is not easy to access and it is noted that it is to be distributed by Development Control and Building control, 'on request', which suggests some reluctance to disseminate it.

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[49] Ibid.
[50] Swiss Centre Site, W1, Draft Planning Brief for Public Consultation. 2002.
[51] Ibid.
[52] Westminster City Council. 2004. 'Design Matters in Westminster'. The SPG Note.

Sustainable Buildings covers, in brief, all the technical aspects of retrofitting sustainability measures mentioned in this paper, (although it should be updated soon to include the innovations in this rapidly developing area of practice). It is a very good starting point for property owners intending to take measures to green existing buildings or develop new sustainable buildings. It covers all aspects of sustainability: design, energy, air, water and drainage, land, landscape and wildlife, transport, waste, material, noise and site practices.

Each of these topics is set in the sustainability context and is illustrated with case studies. This document gives one or two examples of retrofitting on listed buildings of buildings in conservation areas, signposts the relevant conservation policy documents, and makes the point that Historic Buildings legislation takes precedence, in practice over other building legislation.

However, there is no systematic coverage of the challenges to retrofitting sustainability to historic buildings. An introductory guide can only cover building sustainability topics in general terms but there does appear to be a lack of any in-depth information in Westminster's published policy and guidance on retrofitting for sustainability.

Developers of property and owners intending to undertake efforts to green their buildings are faced with a multiplicity of policy documents covering conservation matters and some good, but limited guidance on making buildings more sustainable. This is very general and not related to the particular building or conservation area context. Additionally, conservation officers have no adopted policies or guidance that relates to the specific area of retrofitting in conservation areas and no reason to question or adapt long-established practices. From both sides, there is little incentive to encourage retrofitting in conservation areas.

Building regulations, certification and standards

Building Regulations part L and historic buildings

The Building Regulations govern the construction of all new buildings and most works carried out on existing buildings including where there is a change of use. They are the most direct way in which the Government can influence the energy performance of buildings and resulting carbon emissions.

Under the Building Regulations all new buildings have to meet defined target emission rates and this is easier to achieve with new buildings. New buildings, however, account for about 1.5% of the building stock each year so retrofitting sustainability represents a key task for the UK property and construction industry.[53]

In 2002, in order to help achieve its carbon emissions reduction target, the Government tightened the regulations for insulating buildings against heat loss, as set out in the Building Regulations Approved Document Part L, which also extended the range of works to existing buildings subject to the regulations. Part L.1 applies to dwellings and Part L.2 to non-dwellings.

[53] Harrabin, R. 2006. 'Buildings and climate policy'. *BBC News*. 24 March. <news.bbc.co.uk/1/hi/sci/tech/4837008.stm>.

Part L was revised in 2006 and set maximum carbon dioxide emissions for whole buildings, applying to new buildings and to renovation of existing buildings, with a total surface area over 1,000m². For new buildings, it is anticipated this will reduce carbon emissions by 25% from 2002 standards, which already represented a reduction of 15% over the previous standards.[54]

The Building Regulations Parts L.1 and L.2 state that the need to conserve the special characteristics of historic buildings should be recognised. Historic buildings include listed buildings, buildings situated in conservation areas, and other buildings of local architectural and historic interest. It notes that the advice of the local authority's conservation officer should be taken into account in achieving an 'appropriate balance between historic building conservation and energy conservation'. The interpretation of regulations with regard to historic buildings by building control bodies is guided by English Heritage's Interim Guidance Note on Building Regulations and Historic Buildings (2004).

English Heritage supports energy conservation with the proviso that this does not compromise the character and appearance of historic buildings. Some historic buildings should not be altered but, while many can be improved in terms of energy performance, this will probably not be to the standards of Part L of the Building Regulations.

Particularly with regard to replacement windows, English Heritage is concerned, for example, that double-glazing fundamentally changes the appearance of windows and therefore would always prefer refurbishment of existing windows and avoid replacement wherever possible. (This is also the position taken in the Government's Planning Policy Guidance Note 15 on Planning and the Historic Environment).

Rather than 'facsimile' replacement windows incorporating sealed double glazing which are regarded as 'failing to provide an adequate visual alternative owing to the frame thickness' English Heritage recommends other ways of improving window insulation including draught-stripping, secondary glazing (which may not be possible or appropriate in all cases), and the restoration of internal and external shutters.

Where windows in existing buildings are being replaced, for example, it will be necessary to get Building Regulations approval and normally new windows would be required to be double-glazed. The regulations allow some averaging out in the calculation of the U values that measure insulation, which may allow single glazing to be retained in some cases where there is double glazing elsewhere.

The emphasis in English Heritage guidance is on trying to understand how historic buildings work, taking a holistic approach and on trying to repair and minimise intervention, wherever possible. It notes that Part L requirements do not apply to normal repair and patching work, but only to elements that are 'substantially replaced' as part of the works.

Rather than trying to create a sealed building, which is the approach in modern building construction, historic buildings are more porous in their construction and need to 'breathe'. Adding insulation internally to historic buildings, for example, can lead to problems of interstitial condensation and needs to be carefully designed.

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[54] The Carbon Trust. *Building Regulations Part L 2006*. <www.carbontrust.co.uk/climatechange/policy/building_regs_partl.htm>.

Similarly, loose fitting doors and windows and open fireplaces created a generous rate of ventilation and, if this is restricted too much, problems of condensation, mould and fungal growth may arise. Since weather stripping and draught proofing can be a very effective way of improving the thermal performance of historic buildings without major alterations, this needs to be combined with measures to maintain an appropriate level of internal ventilation.

With listed buildings, as well as the constraints on window replacement and the use of external insulation to solid walls, which generally applies to all historic buildings, it may also be problematic to provide internal insulation to external walls because internal features and details may need to be retained. Although equal care needs to be taken, insulation of both pitched and flat roofs can be achieved in most cases, if the good practices outlined in the English Heritage document are followed.

The English Heritage guidance on the Building Regulations Part L provides a range of practical guidance on dealing with historic buildings of a certain era. With listed buildings, it assumes a certain model of a historic building. This does not really reflect the variety of buildings of different eras covered by the definition of historic building given in the guidance or that could be found in a conservation area such as Soho. Many of the nineteenth, or twentieth century non-domestic buildings in Soho, for example, have more in common, in the way they were planned and constructed, with modern buildings than the type of historic building conceived of in this document.

It is argued by English Heritage and others that older buildings perform much better than is commonly believed in energy terms, but differently to modern buildings. One feature of historic buildings, for example, is the thermal mass behaviour of heavy masonry construction. This can help in smoothing internal temperatures both in summer and winter and this is not reflected in the simple U value calculation.

It may also be true that people use historic buildings in different ways and may accept lower thermal comfort conditions than they would expect in an equivalent modern building. As things stand, the Building Regulations do not and probably cannot go beyond a simple and prescriptive approach to measuring building energy performance, and in these terms it is still probably the case that historic buildings perform well below the required standards.

This leaves building owners in a no-man's land in which any substantial improvement works to a building in a conservation area should attempt to meet the requirements of Part L to make a reasonable contribution to reducing carbon emissions. At the same time Conservation Officers advise on what and what is not acceptable in historic building terms, and the relevant guidance is fairly restrictive in its definition of what is acceptable.

The range of different possible historic buildings is large and the thermal performance of any particular building type is likely to be complex and particular to that type. As things stand, conservation officers are most likely to take refuge in a simplified and restrictive stance on what is acceptable in historic building conservation terms.

Drawing on a large range of case studies, a recent study undertaken by Ecological Development and funded by the Energy Saving Trust and the London Borough of Camden, *Conserving Buildings Saving Energy*[55], identified the following key issues:

- The existence of an opt-out from Part L for historic buildings, but the absence of clear guidance on how this works for building control officers and property managers
- Lack of dialogue between historic building officers, housing officers and property managers and building control officers on best practices for maximising energy efficiency for historic buildings
- The availability of well-established procedures for reducing heat losses through a range of improved glazing technologies
- The availability of a wide range of window and glazing products which can meet both aesthetic and energy-efficiency requirements in many situations where conservation issues are a priority
- Particular technical problems with reflections from double-glazed windows and with potential intrusion from flues and plumbing from condensing boilers.

The same study concluded that there was considerable potential for reducing air infiltration to existing windows in listed buildings; listed blocks of flats could be brought up to Part L standards whilst maintaining their architectural integrity and that lightweight secondary glazing systems have considerable potential as a simple and unobtrusive method of reducing noise and heat loss, but need further development.

All this suggests that there are indeed many ways of meeting both energy and historic building conservation requirements yet to be explored, and that greater efforts should be put into sharing knowledge and experience, rather than retreating to hardened defensive positions.

Building Regulations part N, ventilation, cooling and lighting issues

Building Regulations part N set out in detail the ventilation methods and requirements for different types of building. It covers the ventilation rates for dwellings and offices but refers to a range of other Health and Safety legislation and guidance and CIBSE (Chartered Institute of Building Services Engineers) guidance for determining ventilation rates for other types of building.

According to the City of Westminster's guidance on sustainable buildings, a basic principle of reducing energy use in buildings is to 'create a stable internal environment with an insulated and airtight external envelope'.[56] This can raise challenges as to how to provide sufficient fresh air to meet ventilation requirements in older buildings.

Often such buildings have been designed with high ceilings, which reduce the number of air changes required to meet ventilation requirement. If the original windows have been maintained and repaired and operate as originally intended, with

[55] Camden Council. 2005. *Conserving Buildings Saving Energy*. London: Camden Council. <www.camden.gov.uk/ccm/content/environment/planning-and-built-environment/sustainable-planning/green-historic-buildings.en>.

the level of occupation being as originally intended, then draught-proofing should not pose a problem.

However, where occupants are used to relying on leakage to provide background ventilation, where there has been a change of use and/or occupation is higher than originally intended and particularly where secondary glazing is installed over original windows, there is a danger that opening lights or occupants use of them may not meet the ventilation requirements. As well as not meeting the health standards, problems of mould and condensation could ensue.

Where new or replacement double-glazed windows are being installed, these problems may be overcome but, as noted, there is opposition on conservation grounds to their use in listed buildings and on the street facades of buildings in conservation areas. There are many reasons why opening windows may not provide the level of ventilation required or the optimum solution in terms of energy efficiency. The challenges of ventilating and cooling buildings and potential solutions are dealt with in detail in the next section.

There is extensive, if not general, use of other forms of ventilation and cooling other than opening windows in Soho and there are major design challenges in addressing this issue to improve thermal performance. The range of building types, conditions, uses and occupancy is so varied in Soho that almost all properties of any size need to be treated on an individual basis, with expert advice from a qualified heating and ventilating engineer. However, many of the basic principles and requirements are set out in the Building Regulations, Part N and in guidance manuals such as Westminster's *Supplementary Planning Guidance in Sustainable Buildings*.

Energy Performance Certificates (EPCs)

Energy Performance Certificates will shortly be required on all buildings for sale of rent. In homes for sale, they are included within the Home Information Pack (HIP). According to the Department for Communities and Local Government guidance, 'an Energy Performance Certificate is intended to inform potential buyers or tenants about the energy performance of a building, so they can consider energy efficiency as part of their investment or business decision to buy or occupy that building.'[57]

There is no requirement for buildings to achieve any particular EPC rating. At present, efficiency in energy use and carbon emissions is constrained only by Part L of the Building Regulations as it impacts on new buildings and alterations to existing buildings as noted above (generally through U value requirements with particular emissions targets for buildings of 1,000 m^2 or more).

The intention is to rely on market pressures on building owners rather than regulation to improve the thermal performance of their properties. Once the system is up and running, however, there is clearly a potential for a future government to incorporate EPCs into a property rating system as part of a putative carbon tax regime to pressure owners into making the necessary improvement to their buildings. Given the huge potential that still exists for improving the thermal performance of the existing building stock in the UK, this would provide a potential stick to accompany

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[56] Westminster City Council. 2003. *Supplementary Planning Guidance on Sustainable Buildings.* p21
[57] Department for Communities and Local Government. 2008. *Improving the Energy efficiency of our buildings: A guide to energy performance certificates for the construction, sale and let of non-dwellings.*

the existing small carrot of grants for insulation and other sustainability measures described below.

EPCs are a response to the EU Directive on the Energy Performance of Buildings. The type of EPC required depends on whether the building is being sold or let in parts or as a whole, whether it is divided into separate parts, whether it has shared or communal parts and whether it has common or separate heating systems.

Apart from where buildings or parts of buildings are being sold or let, EPCs are required for new buildings and where existing building modifications affect the parts of the building and the services provision in those parts. From October of this year, EPCs will be required on all non-domestic buildings and will be valid for 10 years.

EPCs take the form of labels that indicate how energy efficient a building is. These will show a rating from A to G, where A is the most efficient and G the least. The energy performance is shown as a Carbon Dioxide-based index. This type of rating is referred to as an asset rating and reflects the age and condition of the building as well as its building services characteristics. EPCs are produced by an accredited energy assessor and are stored on a national register.

The assessment takes account of the individual spaces or zones in use in the building and the activities that take place within them, as well as the heating and ventilation services and controls, lighting systems and controls and the form of building construction. Assessors use standard software to process the data. This is of two types – the Simplified Building Energy Model (SBEM) for smaller, simpler building types and the Dynamic Simulation Model (DSM) for larger, more complex non-residential buildings.

For dwellings, the method of assessment is the Standard Assessment Procedure (SAP) rating. Under the HIP scheme, this is currently applied to dwellings with more than four bedrooms and will be widened to include smaller dwellings when there are sufficient numbers of qualified assessors.

Where the full SAP rating can be used for new dwellings and is used to demonstrate their compliance with Part L of the Building Regulations, it requires many items that cannot be seen in a standard survey of an existing dwelling and would be too demanding to collect. A Reduced Data Standard Assessment Procedure (RdSAP) has been developed as the standard procedure for existing dwellings, with an improved procedure for inferring items of data missing from the required reduced set.[58]

The SAP system uses a labelling system like the EPCs for non-domestic properties. In the case of the SAP, however, there are separate energy and environmental impact (CO_2) ratings and both indicate the effects that may be achieved if improvements are made.

The basic SAP rating used in the first part of the label measures energy efficiency. From this, the Dwelling Carbon Dioxide Emission Rate (DER) can be derived from the heating and lighting loads per unit of floor area, subtracting savings from energy-generation technologies. The Environmental Impact Rating, used in the second part of the label, applies a correction factor to address the problem that the ratings for

[58] Ibid. p37.

larger properties tend to be too low and is a better reflection of the real carbon impacts of a dwelling.

SAP was first published by the Government and the Building Research Establishment in 1993 and, in their 2005 format the ratings are based on averaged and standardised financial costs per square metre for heating, hot water and lighting. Average fuel costs are estimated over a three-year period and updated every three years.

English Heritage (EH) has a number of concerns with the SAP and RdSAP procedures as they apply to historic or traditional dwellings. They argue that many existing buildings are not standard in their construction and the way they are used and that real, metered consumption data is preferable to the standardised estimates used in the SAP rating.[59] (The problem here is that occupants use buildings in different ways, so one user's metered reading may not necessary be an accurate guide for a new user, though it may indeed be a better guide than a SAP).

EH is particularly concerned that that the RdSAP involves no on-site assessment and that EPCs will include recommendations for building improvements that are automatically generated. While some of these relating to boiler systems and controls are not contentious, other such as wall insulation could potentially lead to problems of condensation in traditional dwellings.[60]

RICS has also been critical of EPCs suggesting that the recommended improvements include measures with unrealistically extended payback periods. RICS is pressing the Government to reduce VAT on energy savings measures and to focus efforts on the bulk of the housing market, older homes from the 1920s to 1960s that produce twice as much carbon dioxide as homes built after 1995.[61] They also suggest that the EPC should be applied flexibly to all residential property, not just those that are being bought and sold.

Despite the problems associated with the simplified and standardised methods of assessment, EPCs look set to become a principle instrument for government to address the issues of improving the energy performance of the existing UK building stock and reducing the carbon emissions it produces.

Code for Sustainable Homes and BREEAM

Although unlikely to have a measurable influence on the sustainability of Soho, mention should be made of the Government's Code for Sustainable Homes, if only as this adds to the complexity of, and possible confusion associated with, the variety of measures that have been adopted in relation to sustainable buildings. The Code for Sustainable Homes is another rating system that is applied to the construction of new homes. Unlike the Building Regulations, and like Energy Performance Certificates, it is a mandatory rating system but does not require the mandatory enforcement of particular standards. Additionally, it is intended to set a yardstick by

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[59] English Heritage. 2007. *Interim Guidance on Home Information Packs: Understanding SAP ratings for historic and traditional homes*, June, London: English Heritage.
[60] Ibid.
[61] Clark, P. 2007. 'EPC measures offer poor payback says RICS'.
Building. 12 October.

which more stringent environmental standards can be applied over time to the construction of new dwellings.

The Code was introduced in April 2007 and aims to set 'a single national standard within which the home building industry can design and construct homes to a higher environmental standard, and giving homebuyers better information about the environmental impact of their new home and its potential running costs.' On 1st May 2008, it became a mandatory rating system. There is clearly overlap here with both the Building Regulations and EPCs although the Code covers a wider range of sustainability issues than just energy and offers standards for such things as waste, water, pollution, materials and ecology.

Government policy is to strengthen energy performance requirements in the Building Regulations in line with the six levels of the Code in 2010, 2013 and 2016. In 2010 it is proposed that new homes emit 25% less carbon than they do now – in line with level 3 of the Code. Over time it is envisaged that other aspects of the Code might become mandatory, under appropriate forms of regulation. It is also proposed to update the Code in line with changes to building and other regulations.

The Code for Sustainable Homes is based on the Ecohomes ratings developed by the Building Research Establishment (BRE). This is an environmental assessment method with a scoring system across 6 levels of ratings in 7 key areas:

- Energy efficiency/CO_2
- Water efficiency
- Surface water management
- Site waste management
- Household waste management
- Use of materials
- Lifetime homes (applies to Code Level 6 only)

The BRE have developed similar environmental assessment methods for both new-build and refurbishment of a range of other building types including office and retail, multi-residential buildings and others. Bespoke BREEAM assessments are available for non-typical buildings and a certified BREEAM assessment can be carried out by licensed assessors. BREEAM claims that its Offices assessment is the world's most widely used means of reviewing and improving the environmental performance of office buildings.[62]

According to the BREEAM web site BREEAM assessment methods and tools are designed 'to help construction professionals understand and mitigate the environmental impacts of the developments they design and build'.[63] A suite of BREEAM Tools has been designed for different stages of the construction process: 'for the manufacture of building materials (life cycle analysis of materials in BREEAM Specification: The Green Guide) through design stage (BREEAM Envest and

[62] BREEAM. *BREEAM: Offices*. <www.breeam.org/page.jsp?id=17>.
[63] BREEAM. *The BREEAM family.* <www.breeam.org/page.jsp?id=66>.

BREEAM Buildings) during construction (BREEAM Smartwaste) and post construction (BREEAM Buildings).'[64]

Grants, subsidies and tax relief

Government support for sustainability measures for businesses and households resembles something between a maze and an ever changing kaleidoscope and direct funding measures are elusive and, many would argue, inadequate or both. However, as far as we can ascertain some or all of the following provisions apply.

The Carbon Trust offers interest free Energy-Efficiency Loans for replacing or upgrading existing equipment. Small or medium-sized enterprises can borrow up to £100,000 as an unsecured, interest free loan repayable over a period of up to 4 years. Enhanced Capital Allowances (ECAs) allows a business to write off the whole cost of energy saving equipment against taxable profits in the year of purchase.

As previously noted, energy intensive business users can receive an 80 per cent discount from the Climate Change Levy, in return for meeting energy efficiency or carbon saving targets. There are exemptions or partial exemptions for Combined Heat and Power (CHP) and electricity from renewable sources.

The Environmental Transformation Fund (ETF) is a joint Defra-BERR initiative, started April 2008, aiming to accelerate the development of new low carbon energy and energy efficiency technologies in the UK, Domestic funds total £400 million for the 3-year period 2008/09 to 2010/11.[65] Funding will be channelled through schemes such as those operated by the Carbon Trust and BERR, and publicised via the relevant websites.

The ETF covers larger renewables technology programmes, but is also directed at the low carbon buildings programme and will fund Carbon Trust investments in low carbon technology businesses and Carbon Trust energy efficiency loans scheme for small and medium sized enterprises (SMEs).[66]

The ETF will also fund a new Green Neighbourhoods competition ' to demonstrate how communities can live a low carbon lifestyle the Green Neighbourhoods initiative will give a green makeover to up to 100 neighbourhoods in England with an aim to reduce their carbon footprints by more than 60%.'[67] Funding is 'potentially more than £10 million', has an element of matched funding and is to bid for by 'local alliances between householders, community groups, local authorities, energy suppliers, private companies, and banks.

The focus will be on hard-to-treat homes 'such as Victorian terraces and poorly insulated tower blocks which often have solid walls or no loft space', in addition to properties that have no connection to the mains gas network. The scheme is to be

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[64] Ibid.

[65] Funding for low carbon technologies: the Environmental Transformation Fund. (The fund also includes £800 million of joint Defra/DFID international funding for poverty reduction and environmental protection, and help developing countries to tackle climate change). <www.defra.gov.uk/environment/climatechange/uk/energy/fund/index.htm>.

[66] Ibid.

[67] Defra. *Benn takes the fight against climate change Into homes and communities*. <www.defra.gov.uk/news/2008/080402a.htm>.

delivered by the Energy Saving Trust, with the first successful projects being funded from April 2009.[68]

The Environmental Action Fund (EAF) is a Defra funding scheme for voluntary sector groups to further the Government's sustainable development objectives within England. Grants range from £25,000 to £250,000 per year. The main focus is on promoting sustainable lifestyles and consumption.[69]

The Landlords' Energy Savings Allowance is the government's response to the split incentives issue. It was introduced in 2004 to provide a £1500 tax allowance for landlords who invest in specified insulation measures. The take up has been low and the sustainable Development Commission has recommended that the government do more to promote the scheme to small landlords.[70]

The BERR Low Carbon Buildings Programme provides grants for the installation of micro-generation technologies in a range of buildings to include households, community organisations, public, private and the non-profit sectors.[71] Under Phase 1 of the programme, managed by the Energy Saving Trust, householders can apply for grants of up to £2,500 per property towards the cost of installation. Community groups, public and non-profit organisations are covered under Phase 2, managed by the BRE, for up to 50% of the cost of installing approved micro-generation technologies.

In Westminster, energy grants are available mainly to help those receiving State assistance with their fuel bills or to insulate their homes.[72] Grants are available from the utility companies towards the cost of loft and cavity wall insulation. For those on a benefit or tax credit the grant is normally 100%. Those not claiming any assistance can also usually claim a grant giving discounts of around 75% off the normal price. Householders are expected to shop around for the best deals.

Serious across the board Government measures to subsidise improvements in existing building performance and stimulated micro-generation have so far been lacking. The energy performance of millions of homes across the country could be improved through simple insulation measures. (A recent Mayoral/ Utility company scheme for giving all Londoners the chance of installing their own loft insulation for £50 was along the right lines). Environment Secretary Hilary Benn, is said to be contemplating a version of the feed-in tariff scheme that has proved so successful in Germany and elsewhere at accelerating micro-generation.[73]

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[68] Ibid.
[69] Defra. *Grants and funding: Schemes – Environmental Action Fund*. <www.defra.gov.uk/funding/schemes/eaf.htm>.
[70] House of Commons Communities and Local Government Committee.
[71] BERR. *Low Carbon Buildings Programme*. <www.lowcarbonbuildings.org.uk/home/>.
[72] Westminster City Council. *Energy Grants*. <www.westminster.gov.uk/environment/energy/grants.cfm>.
[73] Parliament UK. 2008. 'Examination of Witnesses (Questions 20-39), RT HON Hilary Benn MP, Ms Susanna May and Mr Paul Chambers', *Select Committee on Environment, Food and Rural Affairs Minutes of Evidence*, 20 February. <www.publications.parliament.uk/pa/cm200708/cmselect/cmenvfru/362/8022004.htm>.

In November 2007, RICS issued a 15-point plan for Reducing Energy Use in UK Buildings.[74] Among its key points are tax relief to make buildings more energy efficient, including a reduction in VAT to 5% for refurbishment and retrofit. The standard rate of VAT is imposed on refurbishment work with no VAT on new building. Reducing it or abolishing it, if only where improved sustainability performance can be shown, would provide a major boost to retrofitting.

[74] RICS. 2007. *Reducing Energy Use in UK Buildings – RICS 15-point Plan*. Among other key points were 'providing clear political leadership'; 'providing easier access to information'; 'reducing bureaucracy' and 'introducing a compulsory code for sustainable homes'