

AGENDA ITEM 15C

Brighton & Hove City Council Scrutiny Panel on Climate Change Adaptation

Date: **11th January 2010**

Subject: **How is the Council through its Local Development Framework Preparing for Climate Change and in particular adaptation?**

Report of: **Assistant Director, City Planning**

1. The Government's view of planning's role in tackling Climate Change

1.1 Planning has a fundamental role in delivering sustainable development in a changing global context¹.

1.2 Planning is central to the delivery of the new homes that are needed; it supports the business development necessary to create jobs and prosperity; and enables the delivery of the infrastructure which provides access for everyone to essential transport, energy and water and underpins sustainable communities. In making this contribution to a prosperous economy and to a high quality of life for all, planning has a key role in helping to tackle climate change. The government has published a Climate Change Supplement² setting out how it considers planning will help tackle climate change; the key principles expected of local planning authorities are to:

- Make a full contribution to delivering the Government's Climate Change Programme and resource efficiency policies, and in doing so contribute to global sustainability;
- In providing for the homes, jobs, services and infrastructure needed by communities, and in renewing and shaping the places where they live and work, secure the highest viable resource and energy efficiency and reduction in emissions;
- Deliver patterns of urban growth and sustainable rural developments that help secure the fullest possible use of sustainable transport for moving freight, public transport, cycling and walking; and, which overall, reduce the need to travel, especially by car;

¹ Town and Country Planning and Compulsory Purchase Act 2004

² PPS1 Delivering Sustainable Development and its Planning and Climate Change supplement

- Secure new development and shape places that minimise vulnerability, and provide resilience, to climate change; and in ways that are consistent with social cohesion and inclusion;
- Conserve and enhance biodiversity, recognising that the distribution of habitats and species will be affected by climate change;
- Reflect the development needs and interests of communities and enable them to contribute effectively to tackling climate change; and
- Respond to the concerns of business and encourage competitiveness and technological innovation in mitigating and adapting to climate change.

2.0 Brighton & Hove's Local Development Framework - Core Strategy

2.1 The Core Strategy is the main planning policy document within the Local Development Framework (LDF - the new plan making system introduced by the Town and Country Planning and Compulsory Purchase Act 2004) which will replace the current Local Plan. Its role is to provide an overall strategic vision and policy framework for the city to 2026. It sets out the scale, location and timing of future development and identifies the supporting physical, social and environmental infrastructure that will be required. It determines where major new development will go and how and where new infrastructure will need to be provided. It goes on to identify local priorities to help improve the provision of services and quality of life across Brighton & Hove's neighbourhoods. These priorities have been derived from a number a number of city-wide programmes and strategies and the Core Strategy will help to coordinate and deliver their objectives. It will supersede a large part of the Local Plan and later Plans must conform to it. The Core Strategy is also required to comply with national (Planning Policy Statements) and regional planning policy (the South East Plan) and will be subject to an independent public examination in 2010.

2.2 The Core Strategy will be supported by a Development Policies and Site Allocations Development Plan Document and Supplementary Planning Documents (SPDs). Particularly relevant to this report is the Sustainable Building Design SPD.

3.0 The proposed provision for new development, its spatial distribution, location and design takes account of climate change and the need for adaptation.

3.1 As the strategic planning document, the Core Strategy should clearly identify where in the city development will take place. The spatial vision for the city seeks to accommodate future

development and change in the most sustainable manner. By 2026 the aim is to work towards becoming a zero carbon city with lower carbon emissions supported by sustainable and renewable sources of energy and ensure the city is resilient to the predicted impacts of climate change. The Spatial Strategy identifies seven Development Areas. The approach to identifying these development areas was to direct development to built up areas of the city with good sustainable transport links (the city's sustainable transport corridors) and close to a main shopping centres to ensure that transport impacts are minimised.

- 3.2 This approach to accommodating growth in the city has been screened against all types of flood risk and a Strategic Flood Risk Assessment³ has informed the spatial strategy and the identification of Development Areas whereby development has been steered to areas of lowest flood risk first. Data was collected from a number of sources including the Council, the Environment Agency, East Sussex Fire and Rescue Service and Southern Water, to understand historic incidents of flooding, current flood management and risks and the impact of climate change on flood risk. Using this information, a series of accompanying maps were prepared highlighting historic flood incidents from sewer, groundwater, surface water and tidal flooding, and Flood Zones identifying the flood risk under future climate change scenarios.
- 3.3 It has not been possible, consistent with wider sustainable objectives for the city, for all the proposed development areas to be located within the area of low probability of flooding. Two of the Development Areas - Brighton Marina, Gas Works and Black Rock Area and the Shoreham Harbour area are both in the highest risk of flooding (Zone 3). Before development could be considered in these areas a more detailed flood risk assessment was required. This provided consideration of the flood hazards in more detail, identified areas of different flood risk within the larger site and identified broad measures to enable development to take place safely. For Brighton Marina, Gas Works and Black Rock this provided a framework for managing flood risk whilst allowing necessary development to occur. Regarding Shoreham Harbour this more detailed assessment identified that parts of the area were of differing levels of risk and concluded that, in the short term, the more vulnerable uses such

³ SFRA – the role of a Strategic Flood Risk Assessment is to provide the evidence to ensure that flood risk is taken into account at all stages of the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest flood risk taken into account the likely impacts of climate change.

as residential development should be directed to parts of the development area that lie in a lower area of flood risk. A Memorandum of Understanding on Flood Risk has now been signed by the development partners including the City Council and Environment Agency, believed to be the first in the country, to ensure that all flood risks and issues are identified and that means of addressing the risks and issues safely are in place before major development can take place.

4.0 New development will be planned to make good use of opportunities for decentralised and renewable or low carbon energy;

- 4.1 All new development is required to minimise carbon dioxide emissions and resource use; maximise the potential for sustainable construction methods and minimise demolition and construction waste. This will help to reduce the city's ecological footprint ahead of South East Plan targets⁴.
- 4.2 The main Core Strategy policy addressing these issues is the citywide policy CP1 Sustainable Buildings which sets out:
 - the minimum standards of building design for all new development, including zero carbon or carbon neutral status for all new residential development involving 3 or more units (including conversions); and
 - the need for all new development to demonstrate, among other things, how they avoid contributing to an increase in the city's current level of greenhouse gas emissions and help to reduce resource use.
- 4.3 Policy CP1 actively supports a move towards zero carbon development and if this cannot be achieved 'carbon neutral development'.⁵ It entails the application of an energy hierarchy which implies maximising the capacity for improvements to a building's fabric as the first priority, followed by incorporation of low and zero carbon technologies.
- 4.4 In the case of new residential developments (including conversions, extensions and changes of use), should a developer satisfactorily prove that recommended energy standards cannot be fully met on-site, contributions towards environmental

⁴ BHCC refreshed 2020 Community Strategy contains targets and aspirations for the city to reduce CO₂ emissions by 3.5% each year (2003-2004 baseline);

⁵ Zero Carbon - A development that achieves zero net CO₂ emissions from energy use on site, on an annual basis.

improvements to the city's existing housing stock may be sought. These will be secured via a S106 agreement and be used to fund improvements in the environmental performance of existing buildings in the vicinity of the development.

- 4.5 The standards the council is setting are ambitious and are sometime ahead of the national timetable for the delivery of sustainable buildings. However, they are achievable and this has been demonstrated by several schemes across the city and through the use of the Sustainable Building Design SPD (supplementary planning document) and Sustainability Checklist. The policy builds in flexibility for developers and a framework for securing carbon compensation measures when the ability to meet standards is compromised by other factors (site restrictions, financial viability, and delivery of other citywide benefits).

5.0 New development will be planned to minimise future vulnerability in a changing climate;

- 5.1 Through City-wide Policy CP10 Managing Flood Risk in the Core Strategy, any proposals for new development will need to take account of the findings of the Brighton & Hove Strategic Flood Risk Assessment with regard to all types of flood risk.

Example 1 – Surface Water Flooding

Surface water flooding is a particular risk in Brighton & Hove because of the highly urbanised nature of the city and in particular “muddy” flooding in suburbs of the city when surface water runs off the Downs. Groundwater flooding is also a potential risk due to the high permeability of the underlying chalk South Downs, and linked to this is the potential for sewer flooding if infrastructure becomes inundated with groundwater. Ground water flooding, surface water flooding, flooding from sewers and flooding from run-off from agricultural land following periods of high rain fall have all occurred in the city within the last 10 years. Where a risk is identified then planning applications will be required to be accompanied by a site specific flood risk assessment identifying how flood risk will be mitigated and minimised. Further the council will produce a Surface Water Management Action Plan to manage surface water flood risk and help mitigate the effects of climate change on the city.⁶

⁶ Surface Water Management Plans (SWMPs) are identified in Planning Policy Statement 25 (PPS25) as a tool to manage surface water flood risk on a local basis by improving and optimising coordination between relevant stakeholders. In August 2009, the council was awarded a £250,000 grant by Defra to develop a Surface Water Management Plan.

Example 2- Coastal Erosion

The Core Strategy proposes, through policy SA1 The Seafront, a strategic planning policy approach to the coastline recognising the need for on-going regeneration and maintenance of the seafront in an integrated and coordinated manner. With respect to the coastline east of the Marina the council will continue to monitor the cliffs in order to understand more fully how the cliffs will react to changing climate in the next 50 years in order to plan for and take appropriate measures to safeguard coastal communities, important infrastructure (A259 & Trunk Services) and coastal access in the longer term in accordance with recommendations in the Beachy Head to Selsey Bill Shoreline Management Plan. Further the emerging Core Strategy adopts a risk-based approach to all new cliff development and will ensure proposals are examined rigorously in respect of cliff stability. This will be informed by the ongoing research being undertaken jointly with the council and the University of Brighton into rates of cliff erosion (INFORM). An increasing understanding of the evolution of the cliffs, in the light of climate change and the natural forces that affect them will enable the council to properly manage the coastline and plan for the future.

6.0 Climate change and adaptation considerations should be integrated into all spatial planning concerns;

- 6.1 Climate change considerations are also embedded in the Core Strategy through area-based policies and other city-wide policies including those around the provision of new homes and improving public spaces, biodiversity, sustainable travel and air quality:
- CP5 Biodiversity emphasises the role that the green network of open and green spaces from the seafront to the Downs can provide in the ameliorating the effects of climate change. A Nature Conservation and Development SPD is being prepared to support implementation of this policy.
 - Through CP3 Public Streets and Spaces, the importance of encouraging street trees wherever possible within the public urban realm is emphasised.
 - Through Policy CP8 Sustainable Transport the council will be able to implement proposals to reduce the necessity for car travel by promoting choice through providing sustainable transport options by improving public transport and positive measures to encourage walking and cycling (provision of cycle routes and parking and improving the public realm).

- CP10 Managing Flood risk sets out the approach to managing and reducing flood risk. It sets a commitment for the council to produce a Surface Water Management Plan.
- Special Area policy, SA1 The Seafront sets out the council's commitment to ensure the ongoing maintenance of the city's coastal defences; and encourage the provision of shade and shelter at the seafront.
- CP4 Healthy City sets out the council's commitment to ensuring healthy urban planning – the need for development to maximise positive impacts on health.

7.0 Mitigation and adaptation should not be considered independently of each other, and new development should be planned with both in mind;

Example 1 – Nature Conservation and Development SPD

In providing nature conservation features, all developments should ensure that adaptation to and amelioration for the effects of climate change are fully taken into account (the SPD indicates the likely climate change impacts include extended periods of summer drought, periods of heavy rainfall in winter, warmer summers, strong winds and more intense summer storms); and suggests as an example, installing green roofs helps to reduce summer temperatures in urban areas, slows storm water runoff and can lower energy consumption.

Example 2 – Urban Heat Island Effect

On hot days urban areas can have temperatures 20 to 60% higher than the surrounding countryside. This is due to a phenomenon called the 'urban heat island effect' that causes air temperatures in large cities to be warmer than in neighbouring suburbs and rural areas. Warmer air temperatures can impact on air quality, public health and the demand for energy.

Some of the causes are buildings blocking cooling of air at night; the capacity of some surface materials to retain heat and radiate it; and lack of evaporation of water from vegetation. Widespread planting in an urban area can help to decrease local surface and air temperatures while strategic planting directly cools the interior of homes and buildings, decreasing air conditioning costs and peak energy demand.

The draft Nature Conservation SPD details requirements for onsite measures to minimise 'urban heat island effect' via planting. The

SPD considers the impact of development upon immediate surroundings. In order to minimise such impact all development are encouraged to make one-off financial contributions towards trees and shrub planting schemes at a rate of £14,000 per hectare. Contributions will be secured via Section 106 agreements and abide by Brighton & Hove City Council's management of such agreements. Developers can make a contribution so that tree and/or shrub planting can be delivered by the council via planting schemes. This approach is supported by the Sustainable Building Design SPD, Trees and Development SPD and the Core Strategy.

Although there is much more still to be learned and done about the urban heat island effect in Brighton & Hove, the council considers it is begin to mitigate against the effects of increasing development in raising urban temperatures by contributing green infrastructure to assist in reducing temperatures.

8.0 Recent Examples of Development Proposals where climate change adaptation features have been incorporated:

One Brighton: zero carbon, zero waste development composed of 172 residential units. Planning application BH 2006/01761. Due for completion late 2009/10.

Earthship Brighton: community centre: zero carbon, zero waste, water neutral and sustainable materials. Planning application BH2001/00481. Completed in 2007.

Sackville Estate, Hove: mixed-use scheme with 92 zero carbon residential units .and BREEAM Excellent rating (70% in energy and water sections) for non-residential elements. Planning application BH2009/00761. Approved in July 2009.

Gladstone Row Brighton: 31 town houses and commercial offices. EcoHomes and BREEAM 'Excellent' rating at design stage. Planning application BH2006/01430. Completed in 2008.

Jurys Inn Hotel, Brighton: BREEAM 'Excellent' rating at Design and Post Construction stages. Planning application BH2005/05142. Completed in 2008.

Bellerbys College, Brighton: BREEAM 'Very Good' rating at design stage. Planning application BH2004/01236. Completed in 2007.

Jubilee Library: one of the most sustainable public buildings in the UK. Winner of a number of awards, including the 2005 Prime

Minister's Better Public Building. Planning application BH2001/00843. Completed in 2005.

Royal Alexandra Children's Hospital: achieved NHS NEAT Excellent rating. Winner of 2008 Prime Minister's Better Public Building Award. Planning application BH2003/03499. Completed in 2007.

Community Stadium, Brighton: first building of its kind in the UK to achieve BREEAM rating. Nearly 18% carbon savings from low and zero carbon technologies. Planning application BH2008/02732. Under construction. Due for completion in 2011.

i-360, Brighton: New tourist attraction, in the form of a 183 metre high spire and heritage centre Wind turbine, rainwater harvesting system. Planning application: BH2006/02369. Construction due to start in 2010.

Downsview Link College, Brighton: extension to existing building with sustainability features such as green roof, wind turbine and grey water recycling system. Planning application BH2004/01573. Completed in 2007.

Davigdor School, Brighton: BREEAM 'Very Good'. Two-storey extension. Solar panels and rainwater harvesting system. Planning application: BH2008/02655. Recently started on site.

Longhill School, Brighton: BREEAM 2008 'Very Good'. Five-storey link buildings. Ground source heat pump, solar thermal panels, rainwater harvesting and green roof. Planning application: BH2009/00737. Due for completion in October 2010.

Somerset Point & Wiltshire House, Kemp Town, Brighton: improvement to the building fabric of existing council housing. Overcladding of high-rise blocks with a permarock cladding system will make homes cheaper to heat, lead to carbon reductions and lower maintenance requirements in the future. Planning applications: BH2008/03813 and BH2008/03779. Works currently underway. Due for completion in Summer 2010.

