

AGENDA

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The Panel will hear from:

Meyrick Gough, Water Planning Strategy Manager, Southern Water
Mark Prior, Head of Sustainable Transport, Brighton and Hove City Council
Martin Eade, Coast Protection Engineer, Brighton and Hove City Council
Martin Randall, Assistant Director – City Planning, Brighton and Hove City Council

16. ANY OTHER BUSINESS

The City Council actively welcomes members of the public and the press to attend its meetings and holds as many of its meetings as possible in public. Provision is also made on the agendas for public questions to committees and details of how questions can be raised can be found on the website and/or on agendas for the meetings.

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Meeting papers can be provided, on request, in large print, in Braille, on audio tape or on disc, or translated into any other language as requested.

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Date of Publication 04.01.10

Agenda Item 12

To consider the following Procedural Business:

A. Declaration of Substitutes

No substitutes are permitted on ad hoc scrutiny panels.

B. Declarations of Interest

- (1) To seek declarations of any personal or personal & prejudicial interests under Part 2 of the Code of Conduct for Members in relation to matters on the Agenda. Members who do declare such interests are required to clearly describe the nature of the interest.
- (2) A Member of the Overview and Scrutiny Commission, an Overview and Scrutiny Committee or a Select Committee has a prejudicial interest in any business at a meeting of that Committee where –
 - (a) that business relates to a decision made (whether implemented or not) or action taken by the Executive or another of the Council's committees, sub-committees, joint committees or joint sub-committees; and
 - (b) at the time the decision was made or action was taken the Member was
 - (i) a Member of the Executive or that committee, sub-committee, joint committee or joint sub-committee and
 - (ii) was present when the decision was made or action taken.
- (3) If the interest is a prejudicial interest, the Code requires the Member concerned:
 - (a) to leave the room or chamber where the meeting takes place while the item in respect of which the declaration is made is under consideration. [There are three exceptions to this rule which are set out at paragraph (4) below].
 - (b) not to exercise executive functions in relation to that business and
 - (c) not to seek improperly to influence a decision about that business.
- (4) The circumstances in which a Member who has declared a prejudicial interest is permitted to remain while the item in respect of which the interest has been declared is under consideration are:
 - (a) for the purpose of making representations, answering questions or giving evidence relating to the item, provided that the public are also allowed to attend the meeting for the same purpose, whether under a statutory right or otherwise, BUT the

Member must leave immediately after he/she has made the representations, answered the questions, or given the evidence;

- (b) if the Member has obtained a dispensation from the Standards Committee; or
- (c) if the Member is the Leader or a Cabinet Member and has been required to attend before an Overview and Scrutiny Committee or Sub-Committee to answer questions.

C. Declaration of Party Whip

To seek declarations of the existence and nature of any party whip in relation to any matter on the Agenda as set out at paragraph 8 of the Overview and Scrutiny Ways of Working.

D. Exclusion of Press and Public

To consider whether, in view of the nature of the business to be transacted, or the nature of the proceedings, the press and public should be excluded from the meeting when any of the following items are under consideration.

NOTE: Any item appearing in Part 2 of the Agenda states in its heading the category under which the information disclosed in the report is confidential and therefore not available to the public.

A list and description of the exempt categories is available for public inspection at Brighton and Hove Town Halls.

AGENDA ITEM 14

BRIGHTON & HOVE CITY COUNCIL

OVERVIEW AND SCRUTINY COMMISSION AD- HOC PANEL ON CLIMATE CHANGE

7.00pm 2 DECEMBER 2009

COMMITTEE ROOM 3, HOVE TOWN HALL

MINUTES

Present: Professor MacKerron (Chair)

Also in attendance: Councillors Janio, Mitchell and Wakefield-Jarrett

Other present: Thurstan Crockett (Head of Sustainability & Environmental Policy, Tom Hook (Head of Overview & Scrutiny), Karen Amsden (Overview & Scrutiny)

PART ONE

6. PROCEDURAL BUSINESS

Declarations of Interest: Vicky Wakefield-Jarrett (VW-J) declared that she was a member of the Sussex Wildlife Trust and Tony Janio (TJ) declared that he sat on the Southern Regional Flood Defence Committee.

Party Whip There had been no party whip.

7. CHAIRMAN'S COMMUNICATIONS

There were none.

8. MINUTES OF THE LAST MEETING

The minutes of the meeting on 09.09.09 were agreed.

9. FUTURE MEETINGS

The following dates of future meetings were agreed by the Panel:

11th January 2010 at 4pm in Committee Room 1, Hove Town Hall
1st February 2010 at 10am in Committee Room 3, Hove Town Hall
26th February 2010 at 2.30pm in Committee Room 1, Hove Town Hall

10. WITNESSES

Jorn Peters, Regional Planner, South East England Partnership Board: introduced himself by saying he had been a regional planner for the South East England Regional Assembly which had now been superseded by the South East England Partnership Board. Mary Mears sat on the South East England Partnership Board.

He is a town planner, so his focus was on spatial planning issues. His aim today was to:

- Provide a regional context for Brighton & Hove (B&H)
- Describe good practice
- Highlight the guidance that the Assembly and the Partnership Board have produced

The Partnership Board was implementing its current Regional Spatial Strategy (South East Plan) which sets out a 20 year framework for the development of the region, as well as working on a new single Regional Strategy. This represented an integration of the current regional spatial and economic strategies and the Government expected a clear focus on climate change.

The current development of a regional vulnerability assessment would provide evidence for how to address climate change adaptation in the new strategy. A key aim was to identify particular vulnerabilities in the region, for example:

- critical infrastructure, which had recently been disrupted by severe weather
- flood risk areas
- vulnerable groups in deprived communities
- areas that lack urban green, so could lead to urban overheating

This information would be used as evidence to inform the prioritisation of growth and the type and location of adaptation measures.

He hoped that the Partnership Board's approach can inform any assessment that B&H undertakes of its own vulnerabilities. The city could also look at the Board's information to compare how we perform against other areas, in the region, in relation to our vulnerability and preparedness for climate change impacts.

Good areas of performance for B&H included:

- level of provision of hospitals and emergency rest centres

Poorer areas of performance for B&H included:

- % of people living in deprived communities
- % of old people in poor health
- Extent of urbanisation

Jorn was working with Hastings on a European project (in conjunction with the Netherlands and Germany) to explore amongst other activities how to assess urban heat and its potential impact. Details of the project can be seen at <http://www.future-cities.eu/>

He believed that local authorities needed some help to implement the policies in the South East Plan. They would also benefit from technical advice on making new developments resilient i.e. greening the development.

The Partnership Board was always looking for good examples of policies and the recently published draft replacement London Plan (for details see <http://www.london.gov.uk/shaping-london/london-plan/strategy/>) included for example:

- Targets for surface area to be made porous/greened over in a specific timeframe
- Establishing a drainage hierarchy from storage (preferable) to sewer discharge

Beyond technical guidance the Partnership Board could provide organisational guidance. For example on the use of Sustainability Appraisals to integrate adaptation considerations into the planning process and the use of partnership working to overcome cross-sectoral barriers to climate change adaptation.

Questions to Jorn Peters

Gordon MacKerron (GMK): agreed that it is a challenge to integrate regional economic and spatial strategies. It was valuable to hear about the project in Hastings which was addressing the urban heat issue. This is also relevant to B&H due to our urban density. He is glad that adaptation **measures** were being prioritised, but we are keen to prioritise adaptation **processes**. What were the differences?

JP: The technical aspects, such as increasing the resilience of new developments, are adaptation measures but processes, for example in terms of partnership working, have to be prioritised as well in light of limited resources. There are a lot of different things that can be done to adapt to climate change.

The assessment of vulnerabilities can enable one to focus on the right adaptation measures. For example if urban heat is a bigger issue than flood risk in a specific area, then one can get developers to focus on reducing urban heat.

Gill Mitchell (GM): felt that the evidence from Jorn was very timely as hopefully next week Council would be agreeing its Core Strategy, which has sustainability at its core. Why were urban/deprived areas more vulnerable to urban heat?

JP: Deprived communities were more likely to lack the means and resources to adapt to climate change impacts like extreme heat. If an area is affluent then it will have more resources to carry out measures to address flooding or prevent the overheating of buildings, such as:

- Ventilation
- Improving the condition of the building
- Using resilient materials

Affluent green or rural areas were less likely to have a problem with overheating. In a dense urban or land-locked area, such as London or Oxford, people would suffer more in extreme weather events such as a heatwave. As B&H was situated by the sea, it should make it easier for the city to deal with urban heat.

Through the work in the European 'Future Cities' project they have also learnt that one could consider keeping air channels free from development, to enable the fresh air from the sea or the surrounding countryside to circulate.

Thurstan Crockett (TC): said that we do have an urban grid design that helps us with air channels from the sea.

Vicky Wakefield-Jarrett (VW-J): asked about the provision of emergency rest centres.

JP: Data was available from the Environment Agency and they can be used for people who have to be evacuated during serious events such as a flood to provide shelter for a limited time.

TC: Hove Town Hall was a building that was used for such a purpose.

Tony Janio (TJ): stated that he was not big on regional planning. In relation to the Local Development Framework, what powers do you have in relation to BHCC, DEFRA and the EA? In addition, how could you help us?

JP: Our South East Plan climate change policy (CC2) set out a planning framework for BHCC planners. The BHCC plans have to be in line with the South East Plan. The Partnership Board can also provide case studies and guidance to enable BHCC to comply with their plan. The Partnership Board has a large planning team compared to individual local authorities and staff can specialise and therefore provide a high level of expertise. They also have a close relationship with the Environment Agency and DEFRA.

TJ: Can you provide cross-boundary information?

JP: We talk to regional/national bodies who are experts in climate change, we look for good practice in local authorities and we disseminate what we learn from them. Climate change is a field which is quickly developing and we need to continue to share the latest research and policy examples.

GMK: I am interested in the prospects for jointly working with East and West Sussex. Do you provide guidance on joint working?

JP: Whilst not always explicitly stated in our policies, we generally encourage cross border working. In our Regional Flood Risk Appraisal for example, we encourage Local Authorities to work co-operatively to address flood risk, in particular where river catchments go across boundaries.

Tony Whitbread, Chief Executive of the Sussex Wildlife Trust: introduced himself by saying that he had worked for the Trust for 20 years and his aim tonight was to provide the context for the 2 documents he had provided for the Panel in the agenda papers for today's meeting.

His second paper provided information on the benefits of nature conservation and why biodiversity was important. A healthy biodiversity was an indicator that an ecosystem was

working well. It was a building block to conserving nature, which was essential to providing the services we all rely on.

His first paper 'Weathering the changes', which can be found at <http://www.sussexwt.org.uk/uploads/swt%20climate%20change%20summary.pdf> is based on a document produced by DEFRA which has been fine tuned for Sussex. It looks at adaptation and the natural environment. There were 4 principles to making the environment adaptable to nature, which recognised that nature is dynamic:

- Conserve what you have and save the best e.g. nature reserves and sites of nature conservation interest
- Don't damage it any more
- Create a robust and varied landscape. A lot can be done to make an area adaptable to change. An area with a varied vegetation structure will provide varied conditions for different species so, for example a heat-sensitive species can simply move from a sunny spot to a shady one, rather than have to migrate north. Varied local landscapes are important
- These first 3 are most important, but establishing ecological networks would also allow larger scale movement and migration, so allowing the continued functioning of nature in the long term. Overall the key need is to allow space for nature so it can move, migrate and adapt.

Professor John Lawton (Chair of an independent commission on ecological networks) gave a talk at a recent national Wildlife Trusts AGM in which he emphasised that the environment is going to change as a result of climate change. The above principles therefore needed to be used to develop Biodiversity action plans and environmental adaptation strategies. Nature conservation was important in its own right, but these four principles would help adaptation and so the continual provision of ecosystem services on which we all depended.

Questions to Tony Whitbread

TJ: Thank you for showing how the sustainability role deals with biodiversity. I had not previously thought of climate change and nature, due to focussing only on its effects on people. Should we move what is here northwards? Or should we adapt our local area to what is now in Northern France – to ensure the biodiversity of our region?

TW: If one builds the right landscape, then nature will adapt itself. To do this we need high quality joined up green spaces. One may not be able to predict the future, but one needs to give space for nature.

VW-J: I can see that making space for nature can be integrated into planning, what role do you see for BHCC?

TW: You have limited space, which means that multiple objectives need to be achieved in one area. Therefore it is not possible to partition off areas for specific special interests, but make space so that objectives such as flood management, health, recreation and biodiversity can all be achieved in one area.

GMK: We are blessed with biodiversity, but would like to encourage this in new developments. There is a struggle to encourage/foster biodiversity in new developments. What would you advise, or would you rather that the space was left alone and not developed on?

TW: You should look at your current strengths such as the importance of your chalk grassland and the colonisation of butterflies and how this could be linked up to other areas. For example, Dorothy Stringer School has created an area of chalk grassland the size of a room which has drawn in butterflies. While physical connectivity is important, stepping stones are even more important. Then relatively small areas can add up to a whole significant area.

TJ: We have been exploring going for Urban Biosphere status for the City by UNESCO. Could this help?

TW: This work should be central. Establishing green infrastructure and interconnected spaces in urban areas leads to an urban biosphere.

GMK: I can see the conflicts that could arise between a limited range of possibilities. How do you resolve conflicts between multiple objectives?

TW: Direct conflicts arise when there are irreplaceable habitats. However, there may be some areas where one can vary habitats. So the constructive way forward is to look for multiple wins. One example is with urban heat island effects. These arise in land locked towns and can be removed by 20% of an area being green space. However, as a coastal town this is not as relevant to B&H.

GMK: How do your objectives deliver adaptation to climate change? For example, flood amelioration.

TW: This is a challenge. New rivers appeared in the heavy flooding of 2000 and it was a challenge to identify space needed for this water to go. This is exacerbated by the fact that flood amelioration needs to happen across other authorities' boundaries.

TJ: What about green roofs, do they help?

TW: One example is the Rolls Royce building in Chichester, one of the biggest in Europe. It has nesting areas, lots of flowering plants and space for bees. This increases the elements of biodiversity and delays the run off of water.

Graham Tubb, Head of Energy Policy at SEEDA: told the Panel that he would outline SEEDA's approach to Climate Change Adaptation and briefly describe the work of Climate South East. SEEDA's boundaries ranged in a clockwise direction from Milton Keynes to the Thames Estuary. Their primary focus was to improve the economic performance of the region. However their remit also contained sustainable performance.

SEEDA had come to a gradual acceptance of the need for climate change mitigation and was now looking at adaptation in areas such as:

- infrastructure
- built environment
- business continuity

It could have gone further, but they were working with the perceptions and understanding of the business community. He believed that climate change adaptation planning needed to be based upon:

- costs
- impact
- risks
- vulnerability

However this would pose problems when engaging with businesses. There was not a high understanding of the business benefits of adaptation work. Climate change adaptation had not been a high level consideration and the main way in which he had been involved has been in supporting Climate South East (the south east climate change partnership).

Their work on sustainable construction had been linked to climate change mitigation e.g.

- Reducing waste
- Improving the efficiency of resource use

This work, had then led to a better understanding of the need for climate change adaptation. The Regional Economic Strategy (2006) had 2 relevant component policies:

- Resilience to climate change
- Promoting and supporting new developments that support climate change adaptation

He was involved in promoting the importance of environmental technologies for the benefit of the region, both economically and for the environment. SEEDA was now refocusing its targets, including:

- Delivering through partnership
- Delivering key technologies e.g. green technologies

SEEDA had identified diamonds of growth and were offering a web based Wiki support tool for local authorities e.g. to reduce their ecological footprint. This web based guidance included a catalogue of carbon reduction initiatives. One of the areas it covered is indicator NI188 on adaptation. Local authorities could register as a user and SEEDA hoped that it will be a useful tool.

Their Single Regional Strategy will address Climate Change Adaptation e.g. engagement with NI188. The government will require SEEDA to address this issue. SEEDA had a green economy escalation programme e.g. a region-wide retro fit programme for public buildings, which BHCC is participating in. They hoped to apply the lessons learnt from this afterwards, to housing.

While Climate Change Adaptation had not been a key element of SEEDA's policies, the infrastructure of the organisation etc., had contributed to exploring this issue. SEEDA was no longer responsible for regeneration.

Climate South East (CSE)

Graham Tubb told the Panel that CSE was established in 1999 and arose from an initial report on climate change impact on the region. Brighton and Hove City Council had previously been a member of CSE but was no longer a member.

Having identified key sectors of importance to the region, if it was appropriate, then they developed adaptation plans for key sectors. The sector groups included:

- Business
- Health
- Communities

The primary focus was on adaptation, but there was some work on mitigation. One focus had been on adaptation and land use, including the ESPACE project in Hampshire. They have worked with small businesses to extend risk management to factor in climate risk e.g. flood damage to their business records. They have produced a report for Company Directors on their responsibilities and climate change.

The Global Investors Group had taken a strong line and will warn investors against companies whose boards who do not take Climate Change into account. (see Your Home in a Changing Climate (London) <http://www.london.gov.uk/trccq/docs/pub1.pdf>)

CSE was being transformed. Having been funded by subscription, it was now a Community Interest Company with access to funding.

Questions to Graham Tubb

VW-J: I appreciate that you are encouraging businesses to consider both adaptation and mitigation, but feel that if you are enticing people in with mitigation – that this is the wrong way in. What are the main risks of climate change to businesses such as BHCC?

GT: Businesses usually have a 2 year horizon, rather than the 10 years which is needed. They also tend to see it as planning to deal with bad weather. However, businesses need to see it as an issue which extends beyond the horizon of normal risk management. In respect of using mitigation as a tool for getting people in, this issue has been sold to businesses as ‘good housekeeping’ rather than saving the planet. They have been engaging businesses on issues such as:

- *Water use*
- *Waste reduction*

Once they have managed to engage with these businesses on mitigation issues, they then raise adaptation issues such as;

‘was your business affected by bad weather?’

They feel that by focussing on localised, small scale risks then this can serve as an indication to businesses of what is to come.

VW- J: What are the major sectors in B&H? For example Amex, does it have specific climate change issues?

GT: They have lots of staff, so transport will be a key issue. They are a multi-national organisation, so rely on the good storage of records. We would like to be able to engage big businesses and get them encourage good practices from their smaller suppliers. This is because small businesses have a limited amount of time to engage on issues such as climate change.

TJ: I do not understand the difference between resilience and adaptation. Also, other bodies are also doing these things to help businesses. So what can SEEDA do for B&H?

GT: We offer a regional focus. There is an Area Director who understands B&H. SEEDA has an annual £160m budget and can channel resources to key issues. They also work closely with DEFRA. They are able to lobby for the region e.g. getting money for Research and Development for wind energy work on the Isle of Wight. Partnership is our ethos.

TJ: How could you help us with our adaptation plan?

GT: We can offer the regional focus.

GMK: The importance of their connections with business. However, it is difficult when it is not obvious what the business aspects of adaptation are.

GT: There are 6 sector teams in SEEDA and I am responsible for the Environmental Technologies team. The issues include:

- *Attracting new environmental industries into the region*
- *helping existing businesses to expand*

They have sector development staff which are able to assist fast growing businesses and encourage them to develop. Climate change adaptation can be helped by these environmental technologies.

Justin Butler, Managing Director, Ambiental, <http://www.ambiental.co.uk/>

told the Panel that they had produced flood map models for BHCC. They were producing a flood map for the whole of the UK, down to buildings.

He had set up Ambiental in 2002, following a career in environmental consultancy. It started from an offshoot in Cambridge University. They were based in the Sussex Innovation Centre and provided a range of services including high resolution flooding risk assessments for:

- Sea water/coastal flooding
- River flooding
- Dam burst
- Groundwater
- Surface water

They were able to identify these risks down to the level of specific developments, and undertook this work both home and abroad. They did a lot of work with GIS and then communicated and analysed the flood risks identified. The company also assessed the risks of other perils such as terrorism and subsidence.

The flood risk slides that they were showing to the Panel tonight were derived from computer-based modelling of multiple flood sources including:

- London pluvial flood maps
- Cambridge river burst modelling
- Hull – pluvial / surface water flooding following the major events in 2007

In 2007, £3bn had been lost to pluvial flooding. Climate change meant that flooding was becoming more intense and lasting longer and bringing greater rainfall in winter. Research from Durham had found that there have been flood-rich and flood-poor decades. We were in a flood rich period at the moment which began in the late 80's and could continue for another 20-30 years. The validation of the model for B&H, came from tests carried out using recorded flood data from Hull City Council and was 80% accurate by this. Ambiantal had now modelled every major city in the UK and their maps were now being used to respond to the heavy rainfall recently. Their maps included topography from INTERMAP and information from the Environment Agency.

The slides of Brighton and Hove showed that there were pockets of risk in Shoreham, Portslade and Hove. There was a channel which included:

- Wellsbourne - an intermittent river that used to flow down what is now the London Road. Old Steine (which used to be Old Marsh Land)
- London Road
- Saltdean

In a scenario of 300mm in 24 hours – the Cockermonth event transposed to Brighton and Hove. This would present particular problems for emergency services (e.g. Preston Circus Fire Station) and businesses. The challenges were to communicate risk and develop resilience. This was concerning as B&H did not think that it was at risk of flooding. Coastal flooding could increase as the sea level rose. Ambiantal needed to work with Southern Water to find out more information about drainage issues.

His organisation also worked with architects to look out how climate change would impact on rainfall. He hoped that the proposed Flood Management Bill would gain assent. This would place a strong onus on local authorities to take flood risk into greater consideration. Local authorities needed to build capacity in relation to:

- Interpretation of risk
- Development of drainage policies
- Understanding the impermeability of B&H - as increasing the coverage of impermeable surfaces (e.g. tarmac'd drives; new developments etc) can increase local flood risk under conditions of increasing rainfall.

There was a need to:

- Identify risks
- Rank them
- Identify costed solutions

The following actions needed to be undertaken pro-actively before a flooding incident happened:

- Where possible, relocate critical infrastructure to lower risk areas
- Identify emergency planning/evacuation routes
- Re-interpret annual probabilities to understand what, say, a 1:100 year event would mean for B&H. This was important bearing in mind that Hull had two 1:100 year storms in one week

Questions to Justin Butler

GMK: I am interested in accuracy issues. An 80% accuracy level is very high. Given that you need drainage data for B&H, how accurate is your pluvial map?

JB: We have undertaken a number of tests both including and excluding drainage. In a 1:75 year event the drainage system rapidly becomes overwhelmed. Drainage becomes a minor issue in such significant weather events.

GM: B&H is vulnerable in terms of run-off from the Downs. Has this been taken into account?

JB: Each cell is in 5m grid squares. Overland flow and routeing from hills has been taken into account.

GM: One solution could be the creation of ground water levees to take the water down and out to the sea.

JB: There are a lot of potential solutions. Ambiental are undertaking a project in the Middle East where they are taking an optioneering approach to choosing between dam solutions. Here novel techniques can each be evaluated e.g. permeable surfaces. These can include both hard design solutions and sustainable awareness. There is also the need to raise awareness of risks.

VW-J: My initial observations are the effects on the transport links and the academic corridor. Following a flood in an area of high social housing (for example Moulescomb), the council may experience a high number of applications for emergency social security grants.

TJ: At the beginning of this Panel we assumed that 2° would happen and so we must assume that these random events will occur. You imply that we need to either build our capacity e.g. increase the number of green roofs or set up more emergency centres e.g. for police and fire brigade to deal with when we are under 2ft of water. Are you saying that we should move key services, such as the NHS, now – or what is the timescale?

JB: A serious event could happen tomorrow. An important part of adaptation is business continuity and relocation. One should ensure that the continuity of business / relocation

location is away from the HQ and / or is not susceptible to the same flooding mechanism (e.g. pluvial/ surface water flood).

TJ: I am assuming that insurance businesses have started to undertake this kind of work for private businesses.

GMK: This will inform any questions we have to the Association of British Insurers. Insurance could be the cattle prod for businesses.

GM: As local authorities produce their Surface Water Action Plan, the robustness of the plans should include whether there is the need to move essential businesses and the need for more forward planning. This could lead to nervousness about house prices.

JB: There is a duty of care to advise potential businesses. To advise people of simple methods to deal with flood events e.g. air brick protection.

TJ: There is a need to warn business in advance. However a balance needs to be struck between warning and scaring people.

JB: Panic of a sort has happened when developers see the focus on zonal priorities and its impact on their proposals. However I have not come across general panic.

TJ: Can you talk to our regional planners about not overdeveloping in this region?

Round table discussion

JP: with the new Regional Strategy, the focus is on developing the evidence so that we know where the problems are and can distribute future growth accordingly. Ambiental, is your data publicly available to inform regional and local planning?

JB: We licence out the data and so it is available now yes.

TW: One often thinks about extreme events, but what is extreme now, will become normal. E.g. measures such as increasing surface roughness can help by reducing run off. Which shows the need to bring agendas together such as biodiversity and flood risk. This would then lead to multiple benefits.

TJ: There are a myriad of means through which emergency adaptation measures could be progressed.

JB: Public acceptability is an issue. Lakes and water detention ponds work well in Holland as they are used to seeing water ponding, but in UK it is seen as a health and safety risk.

TC: What is important is who we hear from next in BHCC, particularly re: flood risk management and planning. We now need to hear more about what we are actually doing, in order to identify the gaps. For example the Eco Town status recently awarded to a proposed development at Shoreham Harbour looks to be in a vulnerable area, according to the evidence from Ambiental, and the implications need to be considered.

GT: It is encouraging that the Panel is taking a comprehensive approach as well the focus on adaptation, especially when five years ago this was seen as a sign of climate change denial. You are a pioneer for others to follow.

TW: It has been important to be invited to talk about environmental adaptation.

TJ: B&H is not just an urban area, there is the National Park and farms.

JP: It would be interesting to explore the potential conflict between urban green space (as an adaptation measure) and density (to accommodate growth) – On the issue of the most vulnerable business sectors, that are potentially those that depend to some extent on the weather and/or high water use – such as tourism and agriculture..

TJ: What is the difference between resilience and adaptation?

TW: Two concepts could be included in adaptation, resistance and resilience. Resistance refers to the tendency to oppose a change, for example a habitat not changing in character in spite of the forces acting against it; resilience refers more to responding with change so a habitat may change its structure and composition but still retain its essential qualities.

11. ANY OTHER BUSINESS

The meeting concluded at 9pm.

Signed

Chair

Dated this

day of

AGENDA ITEM 15a

Biographies of Witnesses

Meyrick Gough – Water Planning and Strategy Manager, Southern Water

Meyrick Gough has worked in the water industry for 18 years in a range of roles. He joined Southern Water in 1992 as a hydrologist and water quality modeller. From there he moved into the water resource planning area and helped to prepare some of the technical information for the water resource plans in 1994 & 1999. He then moved into operations and was the water supply manager for the Company's supply areas in Hampshire and West Sussex serving 1.1 million customers. He now works in the Corporate Strategy Planning team as the Water Planning and Strategy Manager, where he has overseen the development of the Company's 25 year Water Resources Plan, which was published on the 1st October 2009."

Martin Eade – coast protection engineer, Brighton & Hove City Council

I am a civil engineer, I joined the Borough Engineer's department of Brighton Borough Council in 1982 and was appointed coast protection engineer in 1998.

The role of the coast protection engineer is to maintain the City's coast defences and seek funding from central government to replace and upgrade them when they reach the end of their maintainable life. Day to day maintenance is funded from the general fund revenue budget, major capital replacement schemes are funded by grant in aid from central government.

Since 1998 I have been involved in the following major projects and activities –

1. two cliff stabilization schemes
2. established a cliff monitoring project with the University of Brighton
3. reconstruction of 2kms of seawall and Undercliff Walk
4. two strategic coast defence studies
5. represented Brighton & Hove during the preparation of the Selsey Bill to Beachy Head shoreline management plan
6. carried out inspections of the coast defences and supervised repairs

Behind the realisation of many of these schemes lies a long approval and grant application process with Defra and the Environment Agency. In the case of the second of the cliff stabilization schemes we went through a public inquiry with Natural England before the planning application could be approved.

Agenda Item 15b

From Martin Eade – coast protection engineer, Brighton & Hove City Council

Climate change adaptation at the coast

The coastline of Brighton & Hove is divided into two distinct sections which require different strategies for adapting to climate change – the famous beaches west of the Marina and the cliffs to the east.

The west –

In coast defence the simple logic in adapting to climate change suggests that you build seawalls higher and higher. This is not always the case and not always achievable or desirable.

In the south of England sea level rise is exacerbated by the fact that the land is sinking. The combination of these two is slowly resulting in what is known as coastal squeeze where over time the rising level of the sea will narrow beaches and during storms the sea will begin to overtop defences at the head of the beach with increasing frequency.

To deal with this gradual change beaches can be made bigger or defences at the head of the beach can be made higher or set back. In Brighton & Hove the beaches are the City's principal attraction. Building high walls at the head of the beach is not an attractive option, extending groynes and importing shingle to enlarge beaches is more attractive but expensive.

Economics are an important element when applying to the Environment Agency for grant in aid towards any coast defence scheme. Whilst it will almost always be economically, environmentally and technically justifiable to continue to defend Brighton & Hove given its size and importance the additional cost of making a coast defence scheme attractive for leisure and amenity purposes may be more difficult to justify and that additional cost may fall on the Council to meet.

The east –

In the winter of 2000/2001 a series of cliff collapses mainly behind the Marina culminated in a collapse in excess of 2000 cu.m into Asda. These events started a long and continuing process of cliff stabilization works, risk assessments and monitoring. We can not say for certain what the causes of the cliff falls were but they came at the end of a very

prolonged wet period (many months) as a result of which it is likely that the saturation of the cliff face resulted in the cliff falls we experienced. As the climate changes and winters become wetter and summers dryer this intense wetting and drying process is likely to weaken the cliffs at a greater rate than previously.

Following the instability in 2000/2001 a cliff monitoring project was set up with the University of Brighton (the Inform project). The project has been going since 2006 and is aimed at trying to increase our knowledge of cliff evolution in order to give us the confidence to predict any future periods of instability and, in the longer term, the future position of the cliff edge. Work on this project is limited by the availability of funding.

At the foot of the cliffs is the Undercliff Walk and seawall which were first built in the 1930s, we have just completed a 15 year project to rebuild them, their effective and maintainable life is 50 years.

The policy and strategic background

Defra have put in place a process for a co-ordinated strategic approach to coast defence. They support and publish research into climate change and incorporate guidance for operating authorities such as Brighton & Hove into this process.

Local authorities active in coast defence together with the Environment Agency meet regularly in coastal groups to discuss matters relating to coast defence.

Coastal management starts with the compilation of a shoreline management plan (SMP) followed by a strategy study which recommends how the SMP policies for individual sections of coast could be put into effect. These studies and plans are reviewed at regular intervals and incorporate the latest climate change predictions. Applications for grant in aid towards coast defence schemes can then be made

For more information see www.brighton-hove.gov.uk/coastaldefence

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.

