City Management Plan workshop briefing notes

Sustainable Design

What are the issues?

It is now widely accepted that human activity, resulting in a significant increase in carbon dioxide and other greenhouses gas emissions, is causing climate change. Predictions suggest that the impacts of climate change – drier, hotter summers, warmer, wetter winters, and more extreme weather events such as flooding – are likely to be far reaching, and potentially adverse; affecting the environment, economy and society as a whole.

In particular, Westminster's central areas are particularly vulnerable to the urban heat island effect, and the ability to cool buildings, especially within the summer months, is a particular issue.

Sustainable design measures can be used to exploit energy from natural sources ('passive design'), and can be used to address heating, lighting, ventilation or cooling demand. This can be achieved through:

- Orientation of windows to increase heat and or light intake, though in Westminster this could mean the avoidance of south facing windows where appropriate to minimise excessive solar gain in the summer.
- Effective insulation of buildings to retain heat in the winter or keep cool during the summer. The 'air tightness' of a building is one of the most effective ways of reducing a building's energy demand.
- Use of green roofs and living walls to prevent overheating and aid insulation
- Use of vegetation such as deciduous trees to shade in the summer and allow light through in the winter.
- Natural ventilation to aid cooling and avoid use of air conditioning units.

Climate change is expected to result in an increase in the number of rain days and a greater intensity of rainfall. In highly developed areas such as Westminster, surface water flooding occurs when intense rainfall is unable to soak into the ground. Sustainable Urban Drainage Systems (SUDS) control the quantity of run-off from a site, improve the quality of the run-off, and therefore help to reduce the risk of surface water flooding. They can also enhance the nature conservation, landscape and amenity value of the site and surroundings. There are a number of SUDS techniques available, of which the following are considered the most appropriate for Westminster:

- rainwater harvesting and recycling;
- permeable paving and filter drains; and
- living roofs.

In addition to the full use of natural resources, sustainable design is also about the effective and efficient use of resources. This can range from the re-use of building materials and construction waste, to the reduction of water consumption, and maximisation of grey water usage and recycling, the use of efficient and renewable energy generation technology and encouraging recycling through

Athenaeum Hotel, Piccadilly

designing storage that enables the separation of waste that can be recycled.

Further to this, inclusive design is an important principle which puts people at the heart of the design process - this can include design which encourages occupiers to make more sustainable choices, for example building layout which enables greater use of walkways, open spaces, cycling routes rather than greater use of cars. Inclusive sustainable design also takes into account all users of the building, and provides for flexible use of the building. This can increase the building's lifespan and negates the need for redevelopment or extensive refurbishment.

Reducing the impacts of climate change and reducing greenhouse gas emissions through sustainable design principles is not just about new development. It is important to retrofit sustainable design measures in existing building stock, which represents a far bigger proportion of building stock in Westminster than the turnover of new buildings.

What have you told us?

- Support for the inclusion of a policy that promotes the efficient use of land and there should be a presumption against demolition of existing buildings. Re-use and refurbishing existing building stock will reduce construction waste and associated impacts of new development.
- New development should minimise carbon emission, and larger schemes should be required to incorporate sustainability measures through sustainable building design or reducing the burden of a development upon resource use.
- Sustainable design policies should set realistic targets which are technically feasible and will not impact on viability of a development.
- Special consideration should be given to conservation areas and townscape as potential limiting factors.
- Incentives should be included to reflect sustainability in the design of development
- Ways of retrofitting the existing building stock needs to be addressed
- Support the use of living roofs, but should take account of the historic character of buildings. Should not be at the expense of new green spaces, or broader requirement to for applicant to demonstrate biodiversity gain.
- Support policies and measures to reduce water consumption, maximise grey water recycling and usage
- Should be a policy supporting water quality improvements in the city and preventing developments that would reduce water quality.
- The policy framework should be sufficiently flexible to react to changing market conditions.
- Homes will be required? Will there be room for compromise? Developers should be required to achieve Code for Sustainable Homes Level 3 as a minimum for water efficient measures in new homes

- Should require the use of SUDs in new development.
- Need to address urban heat island effect.
- On-site management of resource use should be encouraged
- There should be a presumption against the use of air-conditioning

Policy Context

The use of sustainable design principles is strongly supported by a range of national and regional policy. The Government has set a UK 'headline' target of an 80% reduction in carbon dioxide emissions by 2050 (from 1990 base), which includes a 26% reduction by 2020.

One of the key principles of national Planning Policy Statement (PPS) 1 - 'delivering sustainable development', states that "local planning authorities should ensure that development plans contribute to global sustainability by addressing the causes and potential impacts of climate change – through policies which reduce energy use, reduce emissions, promote the development of renewable resources, and take climate change impacts into account in the location and design of development."

The Government has also developed a national standard for the sustainable design and construction of new homes. The Code for Sustainable Homes aims to develop a 'step change' in the reduction of carbon emission, by introducing a 1 to 6 star rating system of new housing, to highlight the level of sustainability. By 2010 all new homes have to be Code Level 3, by 2013 this is Code Level 4, and by 2016 all new homes have to be Code Level 6 - zero-carbon. Homes and Communities Agency funded homes have stricter code levels. The Code level is established by rating the reduction in carbon dioxide emissions against Building Regulations (part L) baseline.

In addition to the Code for Sustainable Homes, there is also the Building Research Establishment Environmental Assessment Method (BREEAM) - an independent appraisal which sets mandatory minimum targets for the environmental performance of a building.

The Government also published Planning Policy Guidance Statement 25: Development and Flood Risk (PPS25) in 2006. This aims to ensure that flood risk is taken into account at all stages of the planning process, and to direct development away from areas of highest risk. The Government have also issued draft Surface Water Management Plan (SWMP) Guidance to advise local authorities on how to develop surface water management plans.

At the regional level, the London Plan strongly supports the need for Boroughs to require development to make the fullest contribution to the mitigation of and adaptation to climate change and to minimise emissions of carbon dioxide. Policy 4A.3 'sustainable design and construction' specifically states that boroughs should ensure future developments meet the highest standards of sustainable design and construction, including through designing for flexible building use, passive design, and the sustainable use of resources. To monitor building performance, the London Plan also contains Policy 4A.4 which requires energy assessments for major developments in order to establish predicted energy demand and carbon dioxide emissions. Other relevant London Plan policies include:

- Climate change adaptation: Policies 4A.9 – 4A.11;
- Sustainable Planning for flood risk: Policies 4A.12 – 4A.15;
- Efficient use of water: Policies 4A.16 – 4A.18; and
- Planning for waste: Policies 4A.21 – 4A.29

Westminster Academy, Harrow Road

Current Unitary Development Plan Policy 2007

Adopted in 2007, the adopted UDP largely predates current national and regional sustainable design policy requirements.

Policy DES 1 (Principles of urban design and conservation) states that development should be of the highest standards of sustainable and inclusive urban design and architectural quality.

Policy ENV 1 states that the Council will encourage (and in some cases require) developers to consider sustainable design principles. In considering planning applications the Council will encourage the use of natural ventilation and lighting, effective energy conservation, and thermal and acoustic insulation, to conserve energy and reduce noise and air pollution. Also encourages the use of sustainability appraisals of buildings, and requires them in larger developments. Policy ENV 2 expects planning applications to include an environmental appraisal to ensure that environmental effects of developments are assessed. Policy ENV 8 (Water Quality and Conservation) aims to conserve water and reduce water pollution. Policy ENV 10 (Waste Management) and Policy ENV 11 (Waste and recycling storage) aim to reduce waste and ensure efficient separation of waste to maximise recycling.

Policy RIV 12 (Flood Defences) aims to protect Westminster from flooding by refusing development that harms the Thames flood defences, and seeks improvements to flood defences where needed and encourage their removal where not needed.

Sustainable Buildings Supplementary Planning Guidance 2003 – provides guidance to cover the lifecycle of a building project from initial concept, detailed design and construction, through to operation, covering sustainable design features, use of energy, water and drainage, use of materials etc.

Core Strategy Publication Draft 2009 (subject to agreement)

Sustainable Design - Development will be of exemplary standards of sustainable and inclusive urban design and architecture. Imaginative modern architecture is encouraged provided that it respects Westminster's heritage and local distinctiveness and enriches its world-class city environment.

The design and construction development will reduce and minimise resource use and emissions that contribute to climate change during the lifecycle of the development, in line with national and regional standards. This will include providing for an extended life-time of the building itself through

excellence in design quality and efficient operation, and the provision of high quality floorspace that can adapt to changing circumstances over time.

Flood risk - The Core Strategy Publication Draft contains a strategic policy on appropriate uses in the Thames Flood Zones, prohibiting highly vulnerable uses such as new basement dwellings in the areas most at risk of flooding, and for all forms of flooding that "All development proposals should take flood risk into account and new developments should reduce the risk of flooding".

Westminster's Draft Strategic Flood Risk Assessment was published in June 2009 and has assessed the risks from all sources of flooding. It highlights that the greatest risks of flooding in Westminster are from the River Thames and from surface water. Westminster's Draft Strategic Flood Risk Assessment has identified 19 areas as 'critical surface water flood locations' due to the depth or the frequency with which they are expected to flood.

Further information

PPS1: Delivering Sustainable Development (January 2005)

Supplement to PPS1: Planning and Climate Change (December 2007)

Planning Policy Statement 25: Development and Flood Risk, 2006, Department of Communities and Local Government.

Guidance on the Permeable Surfacing of Front Gardens, 2008, Department of Communities and Local Government and the Environment Agency.

Draft: Surface Water Management Plan Guidance, March 2009, Department for Environment, Food and Rural Affairs (DEFRA)

Code for Sustainable Homes

The London Plan - consolidated with alterations since 2004 (February 2008)

Adopted Unitary Development Plan (January 2007), Westminster City Council

Core Strategy Publication Draft, Westminster City Council

Draft Strategic Flood Risk Assessment, June 2009, Westminster City Council

Sustainable Buildings Supplementary Planning Guidance 2003, Westminster City Council

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The agenda for the Sustainable design part of the workshop is as follows:

Welcome and introduction

by Councillor Summers – 10 mins

1. Sustainable design

Which forms of sustainable inclusive design are most appropriate in Westminster, in terms of building orientation, insulation, ventilation and layout?

2. Sustainability Statement

The London Plan states that boroughs should require all applications for major developments to include a statement on the potential implications of the development on sustainable design and construction principles, including an energy assessment, and long term management. This would enable the most sustainable design, construction and management practices are employed.

Should this statement be required for all developments above a certain size threshold?

3. Standards

- BREEAM is an independent appraisal which sets mandatory minimum targets for the environmental performance of a building, whilst in relation to housing, the Code for Sustainable Homes provides a six star rating system of sustainability. Code Level 3 of Code for Sustainable Homes is mandatory by 2010, and all homes to be zero carbon by 2016.
- Should the City Council apply BREEAM to all developments?
- To what extent should the City Council require higher code levels prior to 2016?
- Are there certain types, sizes or locations of development where higher levels of sustainability are achievable?
- To what extent is zero carbon achievable in Westminster?

4. Retrofitting sustainable technologies

- To what extent should the Council require the retrofitting of sustainable design measures?

5. Water efficiency targets

- What water efficiency measures are most appropriate in Westminster?
- Sustainable Urban Drainage Systems
- What approach should the City Council take in relation to Sustainable Urban Drainage Systems?

7. Planning obligations

- After the use of less energy through sustainable design, the supply of efficient energy, and the use of renewable energy in the first instance, should all development aim to be 'zero carbon' with a 'carbon planning obligations fund' to offset excess carbon dioxide emissions?

1 hour 20 mins

Break – 10 mins