

WORKSHOP 6: TACKLING CLIMATE CHANGE - SUSTAINABLE DESIGN AND ENERGY EFFICIENCY AND RENEWABLE ENERGY

Thursday 23rd July 2009, 7th Floor, Westminster City Hall

Chairman: Councillor Summers

Facilitator: Lisa O'Donnell

Officer Panel: Tom Kimber, Vanessa Scott, John Wilman, Rob Smith, Mike LeRoy

Introduction

Councillor Summers

Welcome and introduction.

Lisa O'Donnell

Explained that the purpose of the meeting was to provide a forum to discuss policy approaches and develop options for development into the City Management Plan. Emphasised the purpose of the meeting was not to come to a decision on the policy approach rather to generate options.

Sustainable Design

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

Tom Kimber

Outlined the background to the policy questions, stating that any and all sustainable design opportunities, passive and inclusive would be considered.

Comments from workshop attendees

WCC should consider low energy intensive alternative building material, such as timber.

The re-use and refurbishment of old building stock should be encouraged. The city council encourages retrofitting and we have led the way with a 'retrofitting symposium' held last year, a sustainable design event June 2008 and cooperated with the WPA on their follow up event in Feb 09 - in essence, we are fully on board with this - we are open to all sympathetic improvements.

Higher building standards should be required for refurbishment of old building stock.

Is there a proposal to demolish City Hall and Selbourne for redevelopment? No decision has been made on the future of City Hall.

How will Refurbishment and Insulation of listed buildings be managed? Are there financial incentives?

Options suggested for refurbishment and insulation.

Finance through planning – apply minimum legislation through Part L of building regulations – no full insulation to external walls

	<p>Are there options for dialogue with planning officers?</p> <p>Will standards be mandatory or will there be a choice, and opportunities to contribute to offset funds.</p> <p>Can gains from offset fund be used for retrofitting projects.</p>
Technologies	
<p>Comments from workshop attendees</p>	<p>Renewable energy should be part of a hierarchy of sustainable design options.</p> <p>For example Passive design, orientations, best use of sunlight/day/thermal insulation – gains through passive design for low Carbon development. Iconic renewable technologies are not always the first choice.</p> <p>Technologies and design should be appropriate to site. For example, ground source pumps not suitable for all sites.</p> <p>Opportunity for hierarchy Passive/contextual design for physical and environmental elements should be considered. Sustainable Design approaches should be flexible and assess all possible options rather than stipulate specific solutions. All solutions need to be site specific, unless part of strategic infrastructure to manage sustainability issues.</p> <p>Support for wind turbines on tall buildings, people will adapt and it could result in new townscape.</p> <p>Tall buildings – opportunities to develop on tall buildings – wind turbine should be a requirement, output efficiency of wind turbines improve when elevated.</p> <p>Consider use of micro renewables on lamp posts, e.g. PV arrays. This can make significant contribution to renewable energy supply through cumulative effects.</p> <p>Small scale wind turbines are not economically viable, however feed in tariffs to encourage wind turbines are coming expect in 2010.</p> <p>Opportunities for a Carbon accounting system should be considered, providing a single framework taking account of Carbon to build, Carbon to Convert, Carbon to operate.</p> <p>Carbon pricing per capita and use of building certificates.</p> <p>SUDS – encourage and support implementation of SUDS, type of SUDs dependant on drainage systems, opportunities for highways, dependant on topography. Maintenance of SUDS key to effective use, problem with blocked drains in Soho.</p>

	<p>Surface Water Flooding –run off rate needs to be controlled, Opportunities to use, permeable paving/surfaces should be sought.</p> <p>PPG 15 – opportunity for sustainable measures in conservation areas and heritage sites should be sought – major opportunity in Westminster to be pioneering.</p>
John Wilman	Designs should be sympathetic and retrofitted in old building stock.
Comments from workshop attendees	<p>SUDS –should be considered at inception, design roofs to deal with storm water run off/ seek opportunities for brown/green roofs to manage water run off and provide amenity and biodiversity and flood risk management benefits.</p> <p>Likely future key issue is over heating in buildings. This can be a health hazard. With expected 2 – 4’ C rise in temperature and heat island effect of climate change this issue will become more significant. Opportunities for sustainable approaches to Air conditioning and cooling need to be considered, along with issues of noise and ventilation from plant.</p> <p>Climate Change Adaptation.</p> <p>All design should take account of climate changes predictions for 2 - 4 ‘ rise in temperature.</p> <p>Mechanisms needed to fund climate change adaptation.</p>
Sustainability Statement	
<p><i>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 and construction and management practices are employed.</i></p> <p><i>Should this statement be required for all developments above a certain size threshold?</i></p>	
Comments from workshop attendees	<p>WCC should consider thresholds requirements for sustainability assessments and they should be proportionate to the scale of development.</p> <p>Major development defined as 10 units (residential) and 1000sqm (other uses), cumulative impacts of small developments may need to be considered.</p> <p>For example – self sufficient bus shelters.</p> <p>Westminster already require Environmental Performance Statements for < 10 units.</p> <p>Are there opportunities to map and take account of cumulative</p>

	<p>impacts?</p> <p>Carbon emissions statement could be required for small buildings.</p> <p>WCC should produce guidance notes on best practice for small developments e.g. terraces, bus stops, single unit builds etc.</p> <p>Concerns were raised over the wasted energy emitted from bars and restaurants through open doors, hot air curtains and patio heaters. It was felt these were issues that could not be dealt with through planning. This may need to be addressed through greener business practices.</p> <p>Concerns were also raised over the level of resource and expertise in WCC planning department to undertake work, and review assessments.</p> <p>Light pollution guidelines were suggested.</p>
<p>Standards</p>	
<p><i>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 should be zero carbon by 2016.</i></p> <ul style="list-style-type: none"> • <i>Should the City Council apply BREEAM to all developments?</i> • <i>To what extent should the City Council require higher code levels prior to 2016?</i> • <i>Are there certain types, sizes or locations of development where higher levels of sustainability are achievable?</i> • <i>To what extent is zero carbon achievable in Westminster?</i> 	
<p>Mike LeRoy</p>	<p>Outlined the current standards, BREEAM, Code for Sustainable Homes (CSH), which evolved from BRE eco-homes, and Building Regulations.</p> <p>The Government were consulting on Building Regulations, Energy and Water elements.</p>
<p>Comments from workshop attendees</p>	<p>Government guidelines set out a stepped approach to achieving CSH targets for zero carbon in new builds, 25% by 2010 and 44% by 2013.</p> <p>It was stated the BREEAM is an independent assessment and not part of the Building Regulations.</p> <p>All requirements are for new build and do not take account of old building stock.</p> <p>This raises the issue of standards for existing building stock, which are exempt from Building Regulations improvements.</p>

	<p>It was suggested that a mandatory CSH level 3 and 4 are achievable and reasonable in Westminster, and there is an opportunity to apply this prior to 2013 when CSH level 4 becomes mandatory for new builds.</p> <p>Concerns were raised over the definition of zero carbon. MLR stated that a UK standard definition is expected by end of 2009. It was stated that Zero Carbon was unachievable in Westminster as it would require the use of biomass, which is not acceptable in the city due to associated air quality issues.</p> <p>An evidence base for zero carbon development is required.</p> <p>Zero Carbon definition required for new build CL4 and if unachievable contributions to offsetting fund to CL6. Funds to be used to retrofit old building stock.</p> <p>Developers keen to have clear timeline for CSH requirements to manage their work.</p> <p>Concerns over achieving zero carbon by 2016 were raised.</p> <p>It was suggested that BREEAM excellent standards were likely to be achievable in Westminster.</p> <p>Whether BREEAM excellent standards / CSH CL4 should be required may need to be considered on a site by site basis.</p> <p>Standards may be met through intensified use of sites, for example, at transport nodes. Thresholds may be needed.</p> <p>Opportunity to showcase sustainable design in TCR Opportunity Area, where facades and structures could be retained.. Opportunity for 'beacon' development for sustainable design incorporating best practice, an exemplar of what can be achieved in a dense urban environment.</p> <p>This is a cross borough project and an opportunity for partnership working.</p>
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Retrofitting sustainable technologies

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

<p>Comments from workshop attendees</p>	<p>The extent to which retrofitting is required and the technologies for retrofitting need to be defined in Westminster.</p> <p>For example, should energy required to heat swimming pool be offset by best practice energy efficient design in another part of the development, resulting in no net increase in demand for energy. WCC should lead by example in its own property.</p>
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	<p>It was felt that given climate change predictions it was too late to take forward an offsetting approach and the need for overall reduction in Carbon footprint should be encouraged/supported.</p> <p>Guidance on sustainable design on minor applications should be developed and statement of sustainability required appropriate to site and scale of development.</p> <p>Westminster should consider performance of existing building envelope and opportunities to provide guidance on passive insulation, airtight windows.</p> <p>WCC need to encourage refurbishment of whole building stock.</p> <p>It was stated that WCC need to be realistic about what can be achieved through planning and could pass EIP.</p> <p>Where planning unable to address issues directly a lobbying approach should be taken.</p>
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Water efficiency targets

What water efficiency measures are most appropriate in Westminster?

Comments from workshop attendees

Comment on Camden Council and a water credits system.

Sustainable Urban Drainage Systems

What approach should the City Council take in relation to Sustainable Urban Drainage Systems?

Comments from workshop attendees

SUDS provide benefits for flood risk management, biodiversity and ecology, and amenity. Living roofs are supported.

Singapore given as best practice example for water resource management.

Opportunities for grey-water recycling to improve water efficiency and to move away from using potable water for toilets and gardens should be sought.

New build should be required to meet CSH standards.

Behavioural change needed to encourage better use of natural resources.

Hard landscaping/surfacing on front and back gardens should not be permitted.

GDPO permeable surfaces required.

Swimming pools can be compensated for through water credits attained by implementing grey-water recycling. Issues that need to be considered for gardens, include paving, opportunities for

	<p>environmental benefits, and water attenuation for flood risk management, groundwater protection and recharge.</p> <p>Support grey-water recycling to prevent use of potable water for gardens.</p> <p>Recommend twin pipes for potable and grey-water. All suggestions should be cost assessed.</p> <p>How will WCC work with Thames water to address water efficiency issues?</p> <p>GDPO – not necessarily applicable in conservation areas, which can lead to increased hard-surfacing footprint.</p> <p>Down-water pipes on grade 2 listed building often too small. May need retrofitting.</p> <p>Roads. Opportunities available for permeable surfaces, for example permeable tarmacs for highways, public realm/civic space.</p> <p>Strategic use of SUDs, and use of soft landscaping and buffer zones.</p> <p>Stringent standards for run off in critical surface water flooding locations should be set at Greenfield run off rates.</p> <p>A hierarchy of SUDS should be produced.</p>
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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?

<p>Comments from workshop attendees</p>	<p>Suggested if renewable targets were unachievable then financial contributions for retrofitting should be considered.</p> <p>Consideration should be given to super efficient buildings being permitted carbon offsetting credits.</p> <p>Cost per kg of C needs to be calculated to ensure fair pricing for carbon budgets and offset funds.</p> <p>An evidence base for zero carbon is required.</p> <p>Thought needs to be given to solutions if zero carbon not achieved by 2016.</p> <p>Funds would be best used to provide long term strategic solutions to carbon management. For example retrofitting insulation or extending opportunities for district heating.</p>
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	<p>A long term strategic energy master plan should be considered.</p> <p>Funds should be used and not held back to link in with proposed new technologies coming on line. It would be better to undertake range of projects over short, medium and long term to assess, realistically, what works best.</p> <p>Carbon credit for new builds, but will carbon credits be available for retrofitted old building stock.</p> <p>Timelines for zero carbon required for developers.</p> <p>Concerns were raised over whether the carbon offsetting fund would be just another tax on developers and prevent developments coming forward. The approach will need to be flexible to ensure development is viable.</p> <p>Thought needs to be given to embodied energy in new and old developments.</p> <p>Has thought been given to the use of geothermal energy in Westminster? If not will it? Not yet, but all options will be considered.</p>
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Decentralised Energy

The Core Strategy requires major new developments to link to and extend energy networks unless not practical or viable.

- ***Should all types and sizes of new development be required to connect to existing decentralised energy networks (or in the absence of existing network install decentralised energy generation with the potential to be extended)?***
- ***Should all types and sizes of smaller developments be encouraged to include gas-fired CHP energy generation when there is no likelihood of connection to existing networks?***

<p>Comments from workshop attendees</p>	<p>All Energy company positions on decentralised energy sources and their integration into existing systems needs to be understood, and it was suggested that they will need to join in the debate.</p> <p>This will not prevent opportunities for decentralised energy systems policy options.</p> <p>Concerns were raised over consumer behaviour when energy is in constant supply. it doesn't, always ensure considered use. How will decentralised energy affect ability to choose energy provider, how will decentralised energy supplies be taken up and managed?</p> <p>Will developers be encouraged to provide over specified plant to link to other buildings in the future?</p>
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	<p>Is over specified plant prejudicial to mixed use and viability of sustainable plant. Will this be exempt for gross internal floorspace? NOT sure about this can someone clarify please.</p> <p>Strategic energy infrastructure plan is required.</p> <p>Different buildings have different energy requirements at different times. How will this be managed? Who will control the decentralised systems and be responsible for management and maintenance?</p> <p>Suggested WCC would control systems and manage and maintain.</p> <p>Financial mechanisms need to be in place for decentralised energy infrastructure growth.</p> <p>It was suggested that decentralised energy systems provide business opportunities for developers. For example, extending Pimlico decentralised heating.</p> <p>If decentralised systems are used by a range of users it is more efficient. Thresholds and loadings need to be understood to support the system. There is a natural network opportunity.</p> <p>Energy provision is a viable proposition for the investment community but they require long term commitment to management and maintenance. Companies would be willing to fund decentralised energy networks.</p> <p>All energy supplies, except military and nuclear are in private hands, this is just another option on the market.</p> <p>District heating and extension of CHP needs to meet different demand at different times. Policies should encourage complementary mixed use and thresholds for installation. For example 10 units.</p> <p>Sustainable design CHP is rarely used, mostly heat out than in. District cooling an issue.</p> <p>Consideration needs to be given to whether a new scheme is required to connect to potential and existing networks.</p> <p>It was suggested that a realistic threshold is 5 – 10 units, not viable below that.</p>
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Renewable energy

The Core Strategy will seek development to maximise on-site renewable energy generation to achieve at least 20% reduction of carbon dioxide emissions, and where feasible, towards zero carbon emissions.

Which forms of on-site renewable energy are most effective in Westminster, taking

into account local historic environment, air quality, and potential for site constraints?

Are there certain types, sizes or locations of development where seeking reductions in emissions greater than 20% from renewable energy generation are more appropriate?

Comments from workshop attendees

Concerns raised over 20% renewable energy target in Core Strategy and whether the use of renewable technology was appropriate in Westminster.

20% is the target set out in the London Plan and WCC are required to comply. 20% of what also needs to be defined.

Evidence base requested to support requirement for 20% renewable energy.

Consideration needs to be given to whether developers should have to demonstrate why zero carbon can't be achieved. In order to do this a definition of zero carbon is needed.

Also need to consider the embodied energy in renewable technologies and their manufacture, along with guidance on what is appropriate and whether carbon is saved.

Energy from waste should be considered, for example, food, compost and opportunities for anaerobic digestion. Waste to energy has additional benefit of dealing with waste close to source.

Opportunities for flue scrubbing to reduce emissions should be considered.

The embodied energy for development should be taken into account in planning.

Footprint for anaerobic digestion is large and they are difficult to locate.

Heating from CHP is a sustainable solution, but Power is the key to achieving zero Carbon, e.g. wind, PV. CHP doesn't contribute.

CSH Code Level 6 zero carbon requires equivalent to 60 sqm PV units. Not cost viable.

Again the need to cost kg of carbon per capita was emphasised, along with an assessment of the lifetime costs of development, and alternative options.

That would achieve the same savings.

20% renewable target difficult to achieve without use of biomass. PV also a problem in Westminster.

	<p>Ground source heat pumps need specific ground conditions.</p> <p>CHP relies on gas. PV limited Very difficult to achieve 20%.</p> <p>Viability appraisal may be required to demonstrate why and s106 contributions should be considered.</p> <p>The issue of cost viability may be alleviated by feed in tariffs expected Easter 2010. It would be worth comparing with impact of tariffs in Germany.</p> <p>There may be opportunities to buy and lease roof space. New market opportunities.</p> <p>We should be flexible, judge each case on its merits and don't preclude any technologies.</p> <p>Wind installation - there are decent technologies out there.</p>
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Planning Obligations

The Core Strategy will seek development to maximise on-site renewable energy generation to achieve at least 20% reduction of carbon dioxide emissions, and where feasible, towards zero carbon emissions.

Should the City Council require planning obligations to fund:

- ***Decentralised energy generation on other sites?***
- ***Expansion of existing energy networks, including linking to existing buildings?***
- ***On-going energy network management elsewhere in the borough?***
- ***Offsite renewable energy generation and/or renewable energy elsewhere in the borough?***
- ***Energy efficiency measures in existing properties?***

<p>Comments from workshop attendees</p>	<p>Strongly support use of planning obligations to fund energy efficiency measures in existing properties.</p> <p>Suggest reviewing Scottish Heritage research on passive energy efficiencies in conservation areas and listed buildings.</p> <p>SPAB suggests that insulation and curtains can reduce heat loss by 50% without double glazing.</p> <p>Recommend working with existing buildings and materials.</p> <p>Suggest making energy efficiencies exciting and present it as an opportunity to improve behaviour and contribute to saving the planet.</p> <p>Introduce smart metering. This has cost implications. Legislation in 2020.</p>
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	Carbon Reduction Commitment for large organisations is coming on line, this will require them to make energy efficiencies.
Other questions	
Comments from workshop attendees	<p>Concerns about being able to deliver key worker and affordable housing. See S106 and funding as another tax on developers. May lead to bipolar borough.</p> <p>Appropriate levels for sustainable design should be applied across sectors.</p> <p>Code for Sustainable Homes matrix needed. Opportunity to meet CL 6 even where Zero Carbon CL 4 can't be met. Developers to prove why CL can not be achieved.</p> <p>Seek opportunities for food growing areas in Westminster, supported by some. Others suggested pollution may be an issue.</p> <p>Concern was raised over small enterprises picking up tab for new development, increased costs reduce viability of development. Infrastructure burden external impact.</p> <p>Increased burden needs clearer information and timelines, Grampian condition, to avoid meeting criteria but not getting planning permission.</p> <p>Opportunities to link infrastructure for district heating through Crossrail should be sought. For example, pipe work. Lifecycle analysis/embodied energy should be taken up by Westminster.</p>
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