Response to the Macclesfield Town Centre Development Energy Assessment Report, Issue No 2, 29th October 2008

This response has been prepared by Nicola Percival on behalf of the Bollington Carbon Revolution, and Natalie Abbott on behalf of the World Development Movement, Macclesfield

1. Introduction

Bollington Carbon Revolution (BCR) was established in September 2006 as a sub-group of the Bollington Civic Society, Registered Charity No. 501544. It is a small group of local active volunteers who believe that our town can be a part of the new carbon revolution, driven by the voluntary sector at the local level. We have come together with the over-arching aim of reducing the town's carbon footprint, thinking globally, acting locally. Over the past 2 years we have delivered a variety of programmes to educate the community in taking action to reduce their carbon emissions, calculated our town's carbon footprint and commissioned a hydropower feasibility study.

The World Development Movement (WDM) tackles the root causes of world poverty. According to the Royal Society the science of climate change clearly points to the need for nations to take urgent steps to cut greenhouse gas emissions into the atmosphere, as much and as fast as possible, to reduce the more severe aspects of climate change. WDM believes that climate change is the greatest crisis currently facing humanity and that it is the most marginalised communities in the world that will be hit the hardest by the effects of climate change. Millions are at threat from famine, disease, drought, flooding and ultimately death. For these reasons the Macclesfield WDM Group are concerned that the development of the Town Centre takes these issues into full consideration. We believe that the new development could be an excellent opportunity to reduce Macclesfield's carbon footprint if the rights steps are taken at the planning stage.

The BCR and WDM have collaborated to produce this joint response to the current consultation for the redevelopment of Macclesfield Town Centre, as we share the common goal to reduce carbon dioxide emissions and prevent climate change.

We are delighted that Macclesfield Borough Council has responded to the BCRs original concerns regarding addressing energy consumption of the proposed redevelopment of Macclesfield Town Centre, and that a comprehensive energy assessment has been undertaken. We are pleased that the developers are going beyond Part L which is a minimum requirement, that BREEAM and Code for Sustainable Homes targets have been set, and that innovative technologies such as tri-generation have been considered. The recommendations in the recent Energy Assessment Report are a significant improvement compared with the Energy Analysis Report undertaken by URS on 27/07/07.

However, we feel that the recommendations do not go far enough. The UK has recently passed legislation which introduces the world's first long term legally binding framework to tackle the dangers of climate change. The Climate Change Act 2008 became law 26th November 2008, and the UK has now committed to green house gas emission reductions through action in the UK and abroad of at least 80% by 2050, and reductions in CO_2 emissions of at least 26% by 2020, against a 1990 baseline. Coupled with this, Macclesfield is located in the Northwest of England, an area which led the industrial revolution through innovation, resourcefulness and the use of significant qualities of fossil fuel. It defined the very shape of modern society. The

North West Development Agency has stated in their climate change action plan "Rising to the Challenge", that:

> *"Our region wishes to take a lead on climate change and energy. England's Northwest Challenge is to tackle climate change whilst delivering a better quality of life, increased levels of prosperity and a better environment. The region's Regional Economic Strategy (RES) sets out a low carbon economy as a fundamental aim. We have a once in a life time chance to develop and deploy the strategies and technologies that will secure our future and realise the economic opportunities presented by the changing climate".*
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> NWDA Rising to the Challenge, Page 1

In direct response to the recent passing of the Climate Change Act, and the vision of the NWDA for the Northwest's role in mitigating against climate change, we feel that the recommendations laid out in this Energy Assessment are insufficient. Macclesfield Borough Council is building a legacy for the future, and the buildings within Macclesfield Town Centre redevelopment scheme will be standing in 2050. Although minimum requirements by today's standards are being exceeded, they could, and should go a lot further. Based on these concerns we have summarised a series of recommendations within this response. We recognise that there is the perception that sustainability costs more, and have also included a section within this response on the business case for sustainable buildings, to demonstrate that any small investment which may be required now will bring significant benefits in the future.

2. The business case for sustainable buildings

There is a miss-conception that sustainable buildings cost more. This was proven by a recent global survey that found that green costs for sustainable buildings are significantly overestimated by 300%. Key players in real estate and construction misjudge the costs and benefits of "green" buildings, creating a major barrier to more energy efficiency in the building sector, according to a new study by the World Business Council for Sustainable Development.[1]

The business case for sustainable buildings can be made by looking at collective research from countries that have been developing sustainable buildings over recent years, including the United States, Canada, Australia and the UK. This section summarises some of the key reasons why making a small investment at the outset will bring significant benefits during the operation of a building.

2.1 The financial case

An Australian survey recently found that occupiers of buildings are willing to pay a 10% premium[2] on top of operating costs to be housed in a sustainable building. A similar survey in the United States has also found that green buildings have a green premium sales price of 10%[3]. A similar survey is currently underway in the UK and initial findings show that tenants are willing to pay a premium for occupying a more sustainable building.

[1] World Business Council for Sustainable Development 2007

[2] Sustainable Building e-Bulletin 21.12.07

[3] Measuring the Green Premium for Office Buildings. Does Green Pay Off? Norman Miller, Jay Spivey, and Andrew Florance

In addition to higher rents, the following benefits have been identified through research undertaken by the United States Green Building Council in their report, "Green Value"[4] These conclusions came through interviews with developers, owners and occupiers at green office, industrial, retail, residential and educational buildings across Canada, the United Kingdom and the United States. The findings are also borne out by an extensive review of academic and industry literature. The conclusions of the study were that green buildings can:

- Be quicker to secure tenants
- Command higher rents or prices
- Enjoy lower tenant turnover
- Cost less to operate and maintain in most cases
- Attract grants, subsidies and other inducements to do with stewardship of the environment, increasing energy efficiency and lessening greenhouse gas emissions
- Improve business productivity for occupants, affecting churn, renewals, inducements and fitting out costs amongst others

2.2 Changing Corporate policy

Over the last decade corporate organisations have been under increasing pressure to take account of their impact on the environment and reduce this. The launch of the Marks and Spencer Plan A in 2007 set a new benchmark for corporate environmental performance, with a 100 point plan to reduce their impact on the environment, which includes becoming carbon neutral within 5 years. Their new store in the Glasgow Pollok Shopping Centre achieved the highest BREEAM rating at the time, BREEAM Excellent and it is expected that they will require all of their future buildings to achieve a similar or higher rating.

Other retailers have followed suite and made similar commitments, with Debenhams signing a 100% green energy deal in October 2008. "This agreement to power our stores with 100 per cent green electricity is part of a long term strategy which reveals the commitment that Debenhams' has in helping the environment. We are going about this in a systematic manner and looking at all aspects of our operations from the way we deal with customers in stores to our distribution network." Nigel Palmer, Debenhams' Retail Operations Director, October 2008

These two examples are both from tenants in the new proposed town centre. They show that tenants will, and are expecting to occupy sustainable buildings, and this trend will only continue. Expectations will also become much higher with the introduction of other methods of measuring the performance of a building such as Energy Performance Certificates.

2.3 Access to investment funds

A number of green property funds are emerging, for example the Hermes firm has been pursuing a programme of environmental management for over 10 years and is in the process of setting up a large Green property fund. Under chief executive Rupert Clarke lead, the BT Pension Scheme is investing £500m in BREEAM 'Excellent'-rated buildings. This is an indication of the value of green buildings, and what BREEAM rating is expected.

[4] Green Value – Green Building, Growing Assets

This section of the response has provided key reasons to invest in sustainable buildings. The document will now go on to outline the issues that we have with the current town centre proposals, and make some recommendations.

3. BREEAM

3.1 BREEAM 2008 is not being used

- The BREEAM 2006 standard is being used. This standard has now been superseded by the BREEAM 2008 standard. With each version of BREEAM the criteria becomes more stringent, and the question arises as to why MBC are allowing a lesser standard to be used.
- The BREEAM 2006 standard only requires an assessment to be undertaken at the design stage – the "design and procurement" (D&P) assessment. It is widely accepted that during the remaining design process and construction of the building that the design often deviates away from the original assessed design. Some developers and public bodies, such as English Partnerships, would request that a second assessment would be undertaken on completion of the building, and this assessment is referred to as the "Post Construction Review" (PCR). This would ensure that the final building was assessed to the BREEAM standard, and not just the design of that building. The BREEAM 2008 standard requires that a PCR assessment is undertaken in addition to a D&P assessment.
- There are no mandatory credits in BREEAM 2006, therefore it is possible for a design to achieve a Very Good or even Excellent rating but score very low in the energy credits. In the BREEAM 2008 standard at least 6 of the available 15 credits for CO_2 emissions must be achieved in order to be awarded the Excellent rating. Therefore a BREEAM 2006 Very Good rating is no indication as to how energy efficient the building is.

Recommendation 1: Request that the BREEAM 2008 version is used.

3.2 The target rating is too low

- The proposed rating of BREEAM Very Good does not meet government targets. The government has set a target for BREEAM Excellent within its Strategy for Sustainable Construction, June 2008 as follows: "Full compliance with targets set in 2006 to achieve BREEAM 'Excellent' for new builds and 'Very Good' for major refurbishments procured by Central Government, supported by the Centre for Expertise in Sustainable Procurement within OGC. This is also the same for the Code for Sustainable Homes target of Level 3, which also equates to a Very Good rating
- A Very Good equates to between 55% and 70%. Therefore the developer could score a low score of 55% and still receive a Very Good rating
- There is a new Outstanding rating which is given to buildings that achieve above 85% using the BREEAM 2008 version. Therefore, Very Good is two levels below exemplar practice.

Recommendation 2: Set a target of BREEAM Excellent as a minimum

3.3. BREEAM is being addressed too late in the design process

Page 26 within the Energy Assessment Report states: "as the design progresses a preliminary assessment will be conducted establishing the required design commitments, which will inform the development specification". It is well known amongst the BREEAM assessment community that approach is not good practice. A preliminary assessment should be undertaken at the outset at RIBA stage A of the design process, and then repeated at each stage in order for the maximum amount of credits to be achieved at the lowest cost. The further down the design process the assessment is undertaken, the less opportunity there is for credits to be achieved without design changes being required and significant costs incurred.

Recommendation 3: Request that the BREEAM preliminary assessment is undertaken at the start of the design process and at every RIBA stage thereafter.

3.4 The use of Accredited Design Advisors

The Building Research Establishment (BRE) is launching a new qualification "Accredited Design Advisor". This is a qualified professional within the project team who is knowledgeable of BREEAM and can advise the BREEAM process. This is different to the role of the BREEAM Assessor, who simply assesses the design and provides a rating, which is then third party verified by the BRE.

Recommendation 4: Request that the project team have an Accredited Design Advisor who will be invited to all design meetings to advise on BREEAM and ensure that the maximum amount of credits are achieved, and that all design decisions take BREEAM into account.

4. Code for Sustainable Homes

4.1 The rating is too low

There are six levels to the Code for Sustainable Homes rating system. This development is requesting a target of Code Level 3, which is only half way up the six point scale. Code Level 4 is equivalent to BREEAM Excellent.

Recommendation 5: Set the target for Code for Sustainable Homes Level 4

5. Energy Performance Certificate target

Energy Performance Certificates have been made a mandatory legal requirement for all new buildings as of 1st October 2008. They are a useful measure of how energy efficient the building has been designed to be, against a rating of A-G. Despite this there is no mention of Energy Performance Certificates within the Energy Assessment Report, and there are no targets set. As all new buildings now have to have an EPC rating, it is an ideal method of setting a target for the energy performance of a building.

Recommendation 6: Set stringent Energy Performance Certificate rating targets for each building type which are well above the notional benchmarks.

6. Renewables

6.1 Biomass

We are very pleased that the Energy Assessment Report recognises the constraints of biomass as a source of low carbon energy, as this was not the case in the previous report dated July 2007. However, we feel that a huge opportunity to link with the Peak District has been overlooked, which would stimulate the economy of the Peak District National Park.

The Peak District Sustainable Development Fund is currently funding a study into how to stimulate supply and demand of biomass in the Peak District. We think that the Developers should link in with this study to explore the potential for biomass crops to be grown in the Peaks and transported the short distance to Macclesfield.

Recommendation 7: Make contact with Richard Godley on 01629 816312 or 07970 905965 at the Peak District Sustainable Development Fund, in respect to the Biomass Study they are currently funding, to explore the potential for growing biomass and supplying this to Macclesfield.

6.2 Review of other renewables

The Energy Assessment Report does detail other renewable options but dismisses them on the grounds of either cost of feasibility. We would ask that ground source heat pumps be reviewed as a viable option.

Recommendation 8: Review the feasibility of using ground source heat pumps as a viable option for low carbon energy

7. Building design and innovation

The report recognises the importance of low carbon design, however it does not specifically look at innovation. There are a wide range of innovative products in the market which have emerged in recent years, for example phase change materials can be used in the building façade. These modern methods of construction should be explored.

Recommendation 9: Engage with a low carbon design consultancy to undertake a design review and advise on innovative products.

8. Embodied energy

The embodied energy is the energy which has been used to construct the building, and includes the energy used to extract raw materials, manufacture products and transport them to the development site. When looking at the carbon emissions of a building, the energy used to

construct the building should be considered in addition to the energy used to operate that building.

There are a number of tools available to undertake this calculation, such as Environment Agency embodied carbon calculator which can be downloaded free of charge.

Alternatively targets could be set for the use of a certain proportion of A-rated materials, as classified by the BRE Green Guide to Specification.

Recommendation 10: Include a target to address the embodied energy of the development.

9. Exceeding Part L 2006

The development will exceed Part L 2006 by at least 10%, and the calculations state that it will exceed Part L by 13.6%. On first reading this does indeed seem impressive, however put into context:-

- To achieve Code for Sustainable Homes Level 3 the design must achieve 25% below current Building Regulation Part L1A.
- To achieve Code for Sustainable Homes Level 4 the design must achieve 44%
- 13.6% only achieves 7 out of a potential 15 points in the BREEAM 2006 Energy credit. This is not a stretch achievement and a significantly higher target should be set.

We believe that this is a missed opportunity. Investment must be made now in making these buildings energy efficient, otherwise they will need to be retrofitted in the coming years if we are to meet the Government's target of 80% cut in emissions by end of 2050.

Recommendation 11: Significantly increase the target to exceed Part L Regulations

10. Closing remarks

The Bollington Carbon Revolution and Macclesfield World Development Movement are delighted that Macclesfield Borough Council are taking climate change seriously. However we feel that the targets laid out in the Energy Assessment Report Oct 2008 do not go far enough and have detailed the following recommendations in this response:-

- Recommendation 1: Request that the BREEAM 2008 version is used.
- Recommendation 2: Set a target of BREEAM Excellent as a minimum
- Recommendation 3: Request that the BREEAM preliminary assessment is undertaken at the start of the design process and at every RIBA stage there-after.
- Recommendation 4: Request that the project team have an Accredited Design Advisor who will be invited to all design meetings to advise on BREEAM and ensure that the maximum amount of credits are achieved, and that all design decisions take BREEAM into account.
- Recommendation 5: Set the target for Code for Sustainable Homes Level 4

- Recommendation 6: Set stringent Energy Performance Certificate rating targets for each building type which are well above the notional benchmarks.
- Recommendation 7: Make contact with Richard Godley on 01629 816312 or 07970 905965 at the Peak District Sustainable Development Fund, in respect to the Biomass Study they are currently funding, to explore the potential for growing biomass and supplying this to Macclesfield.
- Recommendation 8: Review the feasibility of using ground source heat pumps as a viable option for low carbon energy
- Recommendation 9: Engage with a low carbon design consultancy to undertake a design review and advise on innovative products.
- Recommendation 10: Include a target to address the embodied energy of the development.
- Recommendation 11: Significantly increase the target to exceed Part L Regulations

We would welcome the opportunity to talk through our concerns with Macclesfield Borough Council and will look forward to receiving your comments on our response to the consultation.

10. Contact details

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