

**Proposed New Kingstone and
Holgate School at Shaw Lane**

Sustainability Assessment

February 2009

PREPARED BY

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1 INTRODUCTION

- 1.1 This Sustainability Assessment accompanies the submission of a planning application for a new Advanced Learning Centre (ALC) on land at the existing Holgate School site, Shaw Lane.
- 1.2 Relevant national, regional and local sustainability policies and guidance have informed the Assessment.
- 1.3 The assessment has been based on information contained in the following documents:
- a. Design and Access Statement
 - b. Flood Risk Assessment
 - c. Planning Statement
 - d. Transport Assessment
 - e. Air Quality Assessment
 - f. Contaminated Land Study
 - g. Ecology Assessment
 - h. Planning Drawings

2 SUSTAINABILITY POLICY

National Policy Guidance

Planning Policy Statement 1: Delivering Sustainable Development (2005)

2.1 PPS1 indicated that sustainable development is the core principle underpinning planning (Paragraph 3) and sets out the Governments objectives for planning to facilitate and promote sustainable and inclusive patterns of development by (Paragraph 5):

- Making suitable land available for development in line with economic, social and environmental objectives to improve people's quality of life;
- Contributing to sustainable economic development;
- Protecting and enhancing the historic environment, the quality and character of existing communities;
- Ensuring high quality development through good and inclusive design and the efficient use of resources; and
- Ensuring that development supports existing communities and contributes to the creation of safe, sustainable, liveable and mixed communities with good access to jobs and key services for all members of the community.

2.2 Promoting high quality inclusive design in the layout of new developments and individual buildings is a key principle (Paragraph 13 iv).

Supplement to Planning Policy Statement 1: Planning and Climate Change (2007)

2.3 Planning and Climate Change: Supplement to PPS1 sets out how spatial planning should contribute to reducing carbon emissions and stabilizing climate change (mitigation) and take into account the unavoidable consequences (adaptation).

2.4 The Key Planning Objectives (Paragraph 9) include:

- Providing homes, jobs, services and infrastructure needed by communities and shaping the places where they live and work to secure the highest viable resource and energy efficiency and reduction in emissions;
- Deliver patterns of urban growth that secure the fullest possible use of sustainable transport, and which overall, reduce the need to travel especially by car;

- Secure new development that minimises vulnerability and provide resilience to climate change;
- Conserve and enhance biodiversity; and
- Reflect development needs of communities.

2.5 Planning applications that contribute to the delivery of the Key Planning Objectives should expect expeditious and sympathetic handling (Paragraph 40). In considering environmental performance of a proposed development planning authorities should expect new development to (Paragraph 42):

- Comply with policy on decentralised energy supply and sustainable buildings unless not feasible or viable;
- Account to be taken of landform, layout, orientation, massing and landscaping to minimise energy consumption;
- Deliver a high quality local environment;
- Provide public and private open space;
- Give priority to sustainable drainage systems;
- Provide sustainable waste management; and
- Create and secure opportunities for sustainable transport.

Planning Policy Statement 22: Renewable Energy (2004)

- 2.6 The Government considers that renewable energy should be capable of being accommodated in locations where the technology is viable and environmental, economic, and social impacts can be addressed satisfactorily (Paragraph 1).
- 2.7 A percentage of energy to be used in new residential or commercial developments to come from on site renewable energy developments may be sought where such equipment is viable and should not be an undue burden on developers (Paragraph 8). Developers should consider the opportunity for small scale renewable energy schemes utilising technologies that may include biomass heating or combined heat and power schemes (Paragraph 18).

Yorkshire and The Humber Regional Spatial Strategy (2008)

- 2.8 The RSS Spatial vision and core approach highlights in Policy YH4, Part 'A' (Regional cities and Sub Regional Cities and Towns) that the "*Regional Cities and Sub Regional Cities and Towns should be the prime focus for housing, employment, shopping, leisure, education, health and cultural activities and facilities in the region.*"

2.9 The supporting text to policy YH4 states that:

"It is vital that the momentum of urban renewal is not only maintained but increased. Major 'step change' is required to deliver high quality urban places. Comprehensive and co-ordinated action will be required to counter negative images, deal with social exclusion, reduce high crime rates, raise education standards and provide for better amenity. This will help to foster cohesive communities and retain families."

2.10 Policy E1 (Creating a successful and competitive regional economy extends the significance of education within the region and states that:

"The potential of the "non-business class" sectors, including health, sport, retail, leisure, tourism and education as key economic and employment generators."

2.11 Policy E3 (land and premises for economic development) signifies further that Plans, strategies, investment decisions and programmes should make use of appropriately located previously developed land and current allocations, and ensure the availability of sufficient land and premises in sustainable locations to meet the needs of a modern economy and in particular take account of *"The need for land and extended premises to support the development of public services, health, sport, leisure, tourism, cultural industries and education as key employment generators and the contribution of mixed use development to employment supply"*

2.12 The main components of the RSS Core Approach to the environment include the need to transform cities and towns, raise environmental quality, increase biodiversity, enhance natural and historic environments, address climate change, and protect rural and coastal areas.

2.13 Specifically for South Yorkshire - including Barnsley, policy SY1 (South Yorkshire Sub-Area Policy) states that environmental plans, strategies, investment decisions and programmes should:

1. Improve green infrastructure, including through increased and enhanced woodland planting in line with South Yorkshire Forest Plan
2. Improve air quality, particularly in central Sheffield, parts of the Sub Regional Towns and along the M1, A1 and M18 corridors (based on AQMAs)
3. Transform town and city centres and enhance the environment of former coalfield settlements
4. Encourage planting for biomass in Doncaster, Barnsley, and Rotherham

5. Adapt to climate change by helping to alleviate flood risk, particularly in the upland areas of the South Pennines; ensuring compensatory sites for biodiversity and species migration, especially in the South Pennines; and increasing and enhancing urban planting, greenspace and biodiversity networks in Sheffield, Rotherham, Barnsley and Doncaster
6. Avoid depleting the Sherwood Sandstone aquifer in Doncaster
7. Safeguard and harness industrial heritage
8. Protect and enhance the biodiversity and landscape character of the Southern Pennine Fringe, Humberhead Levels, Southern Magnesian Limestone and Coalfield landscape character areas, and the integrity of internationally important biodiversity sites
9. Maintain the general extent of the South Yorkshire Green Belt

Barnsley Unitary Development Plan (2000) (Amended September 2007)

- 2.14 Policy ES1 states that the council will refuse proposals for development which are likely to result in harm to the environment through excessive levels of pollution arising either within the site to be developed or occasioned elsewhere by the proposed development. The council will in particular resist development which is likely to result in housing, schools, hospitals or other sensitive land uses being subjected to excessive levels of air, noise or other pollution. Where development is permitted the council will seek to ensure that resulting pollution is avoided or minimised.
- 2.15 Policy ES3 refers to water pollution and states that the council will, in conjunction with the environment agency, use all it's available powers and influence to prevent the pollution of all surface and underground water and seek to improve their quality consistent with european union water quality objectives.
- 2.16 Policies ES7 and ES8 refer to contaminated land and set the framework to ensure that, where appropriate, applicants for planning permission meet their responsibility to provide information on whether a site is contaminated.
- 2.17 Policy ES7 states that where development is proposed on land which the council knows or strongly suspects is contaminated to an extent which would affect the proposed development or infringe statutory requirements, the council will require to be satisfied that the applicant has:

A) undertaken investigations to establish the nature and extent of contamination and its potential impact on the development proposed, and

B) where appropriate, provided details of measures to be taken to remove and/or treat the contamination or to protect the development and the environment from its effects to the satisfaction of the council. Such measures must be implemented prior to the commencement of the development or in accordance with a timescale to be agreed by the council.

- 2.18 Policy ES8 highlights that where development is proposed on land which the council has only a suspicion that it might be contaminated, or there is evidence that it might be only slightly contaminated, planning permission may be granted subject to conditions requiring that development should not start until an investigation to establish the nature and extent of any contamination and an assessment of the measures necessary to remove or treat the contamination has been carried out and to ensure that any remedial measures are undertaken.

3 SUSTAINABILITY ASSESSMENT

3.1 This section of the assessment summarises the considerations which will determine the choice of sustainable building design, renewable energy, sustainable water management, community, waste and transport management.

3.2 There is a limited range of renewable energy technologies which might be suitable for a new ALC development on the site. Notwithstanding this however there are a number of defined areas that will have to be met, namely;

- Building regulation requirements in relation to environmental requirements in respect of insulation levels, air infiltration, heating, lighting and ventilation
- Energy use targets
- BREEAM standard defined as very good

3.3 The PfS standard output specification includes a section on sustainability which discusses issues around global warming, ozone depletion, pollution and resource depletion and offers guidance on areas where developers can address areas of sustainability.

SUSTAINABLE BUILDING DESIGN

3.4 The proposed scheme will be designed in accordance with the key principles of sustainable development which include using less energy and using renewable energy.

3.5 Sustainable consumption, production and use of renewable resources will be designed and integrated into the scheme. Heating, cooling and power systems will be selected to minimise carbon dioxide emissions. The need for active cooling will be reduced as far as possible through passive design. Rainwater harvesting and enhanced building insulation beyond standard building regulation requirements will be integrated into building design.

RENEWABLE ENERGY TECHNOLOGIES

3.6 Since the planning application is in outline only at this stage, full details of the building design and occupier requirements are not yet available. The applicants are prepared to accept the imposition of a planning condition designed to ensure an acceptable energy mix for the development, for agreement at the detailed application stage.

- 3.7 The following options of renewable energy sources have been identified. The viability of each option and the extent of renewable energy systems that be incorporated in the development is also considered.

Wind Turbines

- 3.8 There may be sufficient site area to station a wind turbine capable of generating a porportion of the site's energy requirement. However, smaller turbines are more suitable as larger turbines would be visually intrusive as well as structurally demanding and acoustically unacceptable. A detailed study will be required to assess the wind resource available so that this can be compared with the likely energy demand arising from the use of the site.

Photovoltaics

- 3.9 Photovoltaic panels generating electricity from sunlight could be installed as modular panels within the roof of the building, or as part of the glazing for atria walls and roofs, or indeed used as cladding on the building walls. They can also be attached to individual lighting columns and elsewhere.
- 3.10 Photovoltaic systems installed within buildings can be discrete in terms of appearance, although there are specific requirements to achieve acceptable levels of efficiency, including orientation towards the south west or south east and an inclined elevation of 30°-40°. Installations serving individual lighting columns can be quite prominent.
- 3.11 Photovoltaic panels rely heavily on direct exposure to sunlight, and the presence of trees can significantly undermine their performance, both through direct shadowing and leaf fall.
- 3.12 Photovoltaic arrays are amongst the most expensive of renewable energy technologies, and are generally unsuitable for sites where high exposure levels cannot be achieved.

Solar Water Heating

- 3.13 It is likely that the hot water demand on site is likely to be low. It is ultimately considered that this option is not a viable solution for generating renewable energy.

Biomass Boiler Plant

- 3.14 Where there is the significant energy demand for space and water heating within a building, it may be appropriate to install a biomass boiler burning wood chips or pellets, procured from sustainable sources and delivered by road.
- 3.15 Air quality is a key issue for this development, which is located to the south of an Air Quality Management Area. A biomass system may exacerbate existing air quality concerns and as a result may not be appropriate in this location.

Ground Source Heating and Cooling

- 3.16 In some areas boreholes below a building can be used to channel ground water through a heat pump, delivering either heating or cooling for the internal building envelope. Only a limited number of such installations can be developed within a given area, and geological conditions and the depth of the water table are factors that need to be taken into account in considering the viability of this technology.
- 3.17 Ground source heat pumps work best when there is a fairly uniform heat demand to serve a higher density development within an urban area. As with biomass boilers, the capital investment required is significant and it is unlikely that this technology would be appropriate for the limited energy demand required by the application proposals.

Summary

- 3.18 The detailed design of the energy systems for the site cannot be specified at this outline planning application stage. Nevertheless, the development is capable of delivering all reasonable modern standards of building efficiency, amenity and renewable energy.

SUSTAINABLE WATER MANAGEMENT

- 3.19 The supporting Flood Risk Assessment (FRA) produced by ARP Associates concludes that the development passes the Sequential Test of PPS25 and there are no flood mitigation measures required for the new development.
- 3.20 The submitted FRA in support of this planning application provides further details relating to sustainable water management.

COMMUNITY

- 3.21 The scheme comprises a new ALC upon the site if the existing Holgate secondary school. The proposed ALC seeks to meet the educational needs of the community for the future whilst being accessible by pedestrians, cyclists and public transport. The sequential approach to the site assessment concluded that a new ALC could be delivered on this site with minimal disruption to the existing Holgate and Kingstone schools.
- 3.22 The proposed development is on previously developed land, currently comprising a redundant garage, a former industrial site and an existing secondary school. Therefore the development meets Government targets for developing previously used land.

WASTE

- 3.23 A refuse and recycling area is to be provided at ground floor level.

Construction, Materials and Waste

- 3.24 There are three main phases of the construction programme that will generate waste and require careful management to ensure that the scheme complies with the planning policy outlined in section 2. The three phases are ground works, building construction and ongoing waste management.

Ground Works

- 3.25 As the scheme does not include a basement level of car parking it is expected that there will be an insignificant amount of spoil material generated during the ground preparation works stage. Uncontaminated spoil can be readily reused as fill material for various purposes.

Building Construction

- 3.26 There will be different amounts and types of waste generated throughout the building construction phase. Waste generated during this phase is likely to include concrete, metal, timber, cardboard and plastics. However, the most significant waste generator during this phase will be the packaging materials involved.

- 3.27 The quantity of materials generated is unknown at this stage. However, these materials will be sorted into 'materials to be recycled' and 'materials for disposal'. The materials to be disposed will be taken to a nearby landfill site.

Ongoing Waste Management

- 3.28 Once the scheme is constructed it is expected that the main sources of waste will be as follows:
- Paper,
 - Glass,
 - Plastics,
 - Packaging materials (cardboard), and
 - Food wastes.
- 3.29 Materials will be sorted into 'materials to be recycled' and 'materials to be disposed within the refuse and recycling areas designated on the ground floor. The materials to disposed will be taken to a nearby landfill site.
- 3.30 The generation of waste will be minimised as far as possible during all phases of the development of this scheme.
- 3.31 Good working practices will be employed on the site during all phases of the scheme development. This will include a commitment from all suppliers, and contractors. The person in charge of the site management will be responsible for managing this matter.
- 3.32 The inconsequential amount of waste that cannot be reused on site or recycled will be transported only to nearby waste facilities.
- 3.33 As far as possible over-ordering of materials will be avoided as well as ordering standard sized material rather than the quantity required. Materials will be carefully handled during off-loading to ensure that there is no damage to materials. The building materials will also be secured to ensure that there is no wasted material through theft or vandalism.
- 3.34 In terms of ongoing waste management, suitable storage facilities will be provided within the ground floor refuse area. New occupants should also be made aware of recycling facilities available on this site and encouraged to make frequent use of these facilities.

TRANSPORT

- 3.35 The supporting Transport Assessment concludes that the proposed ALC will not generate additional trips in comparison to the previous and existing uses on the site and following necessary improvements to the site access, to be agreed with BMBC, on highway and transport grounds there are no defensible reasons why the scheme is unacceptable.
- 3.36 The scheme also proposes separate vehicular and pedestrian/cycle access to the site and as a result provides a safe highway
- 3.37 The Transport Assessment provided in support of this planning application provides further details and suggestions of accessible and sustainable transport.

4 CONCLUSION

- 4.1 The proposed development is on previously developed land and as a result meets Government targets for developing previously used land.
- 4.2 The redevelopment will raise the standard of the immediate surroundings as well as improving the education offer within Barnsley.
- 4.3 The proposed scheme has considered the main policies and guidance relating to sustainable development. The scheme demonstrates a commitment to sustainability through the adoption of energy efficiency, water management, waste management, construction management and sustainable transport.