Foreword by the Mayor, Stuart Drummond

In 2010 the Council illustrated its commitment to sustainable development by adopting a Sustainable Construction Policy. The policy stated our intention to prepare a strategy to illustrate how we intend to incorporate the principles of sustainable construction in the design and planning, commissioning, construction, renovation, management and demolition of all buildings and structures including highways.

This new strategy provides a statement of how the Council will address sustainable construction in its own activities. It is in recognition of its community leadership role that the Council is taking forward this agenda; the Council also realises its influence and responsibility extends beyond its own estate and in future years it is anticipated that the strategy will be extended to all construction activities across the borough.

The strategy addresses the broad range of topics included in sustainable construction, details the work the Council has already undertaken, and examples of how the Council intends to meet its commitment in future.

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1.0 INTRODUCTION

The Council is committed to sustainable construction of all buildings and structures, their design and planning, commissioning, construction, renovation, management and where necessary demolition. This strategy builds upon the Council's previous sustainable construction strategy and follows on from the reviewed Sustainable Construction Policy which was subsequently adopted in October 2010. The strategy provides more detail on how the Council intends to provide leadership on sustainable construction locally.

This strategy supports the Council's commitment to delivering the Community Strategy. The Community Strategy was developed by the Hartlepool Partnership which the Council is a member of. At the heart of the Community Strategy is the vision:

> 'Hartlepool will be an ambitious, healthy, respectful, inclusive, thriving and outward-looking community, in an attractive and safe environment, where everyone is able to realise their potential.'

The Council's own Corporate Strategy also sets out its commitment to sustainable development:

> 'The Council recognises the role it has to play in contributing towards sustainable development through all of its activities including promoting the local economy, community development and valuing the environment. The Council seeks to work effectively to provide high quality services for local communities. Sustainable development depends upon all of these aspects being considered together rather than in isolation. The Council is committed to sustainable procurement of goods and services and making its building management, transport and resource use sustainable.'

Nationally there has been an increasing importance placed upon sustainable construction, perhaps in part driven by climate change. The UK Strategy for Sustainable Construction 2008[1] sets a direction of travel towards greater levels of sustainability and in recent years the Code for Sustainable Homes[2] and the emerging Code for Sustainable Buildings have been key drivers of improvement in new buildings.

The national strategy sets out six construction commitments, one of which is sustainability, but the sum of all of the commitments should result in a greater contribution to sustainable development. The six commitments are: procurement and integration; commitment to people; client leadership; sustainability; design quality; and health & safety.

2.0 SCOPE

The Council's Sustainable Construction Strategy is relevant to the buildings and structures including highways, for which the Council has responsibility. However, the Council recognises its influence and responsibility extends beyond its own estate and it is aware of the wider impacts and influences of strategies and actions. It is intended that future versions of this strategy will encompass all organisation's construction activities in the borough.

[1] http://www.berr.gov.uk/files/file46535.pdf
[2] http://www.planningportal.gov.uk/uploads/code_for_sust_homes.pdf

The strategy illustrates the Council's broader commitment to sustainable development which includes an integrated approach to the community in the borough, the natural and built environment and the economy. Sustainable development also includes consideration of global impacts and long term issues.

Sustainable construction is one aspect of putting sustainable development principles into action and this strategy illustrates how the Council intends to meet that challenge.

Sustainable construction includes a wide range of benefits:

- reduced long term building management costs;
- increased comfort for building users;
- value for money;
- energy efficiency;
- skills development, training and use of local labour and suppliers;
- greater flexibility of building use;
- increased safety on sites;
- effective communication with local residents and businesses;
- respecting local heritage and archaeology;
- reduced resource use through the re-use of 'waste' construction materials which also reduces costs;
- use of locally sourced and environmentally friendly construction materials;
- buildings which relate to their local surroundings;
- buildings designed to require minimal levels of energy in their use and so reduce CO_2 emissions; and
- buildings and highways designed to resist the likely impacts of climate change.

Having considered the aforementioned national and local documents and the wide range of topics and benefits included within sustainable construction, the Council has developed its commitment to sustainable construction around the following themes:

- **Materials**
- **Procurement**
- **Energy, carbon and climate change**
- **Water**
- **Community**
- **Waste**
- **Design and heritage including archaeology**
- **Natural environment**
- **Access and movement**

The themes are not mutually exclusive. There are many instances where themes are linked and good work on one theme can have a positive impact on another theme or themes.

3.0 STAGES IN CONSTRUCTION ACTIVITIES

The strategy is relevant to all parts of the construction process from design and specification through to demolition. Sustainability considerations should be built into all stages as illustrated in the table below:

Construction phase				
Design	**Construct**	**Maintain**	**Renovate and retrofit**	**Demolish**
Specification	Community impact	Maintaining kit for efficiency e.g. heating systems	Bringing buildings up to date e.g. insulation	Community
Procurement	Delivery	Maintain for longevity e.g. painting woodwork, patching pot-holes	Addition of new technologies e.g. PV panels	Re-use
Orientation	Methods e.g. offsite construction	Historic buildings	Bringing buildings back into use	Noise and dust

Demolition is generally not considered to be a sustainable option but there are occasions when it is necessary and it should be done with consideration of many of the themes above.

4.0 PURPOSE OF THE DOCUMENT

It is intended that this document will be used as a reference document by Council officers to help shape their approach to design, build and management of the Council's buildings and

structures, and in related policy development. It is an evolving document which will be altered and updated as necessary as the sustainable construction agenda develops nationally and locally.

In the future it is intended that the document will also be used to influence all construction activity in the borough. This will further support the Council's commitment to sustainable development and more specifically to sustainable construction.

The following sections provide detail on each of the themes mentioned above in terms of the background to the theme, what the Council has done to date and what it can do in future, and where available examples of what other organisations are doing.

SUSTAINABLE CONSTRUCTION THEMES

5.0 MATERIALS

5.0.1 Background

The use of inappropriate materials can lead to a number of problems. It is therefore important to specify the most suitable materials for the task. Ensuring they are durable, sourced locally and have least negative impact upon the environment is one of the early opportunities to influence the sustainability of a construction project.

Historically it has been acceptable to order more materials than required for a construction project but this has led to the waste of perfectly good products. Ordering the actual required quantity should now be the norm, although consideration is required regarding hard landscaping schemes where replacement material may be needed in future and materials may no longer be available. Just-in-time ordering tends to lead to less waste as materials are not put at risk by being stored inappropriately on-site while waiting to be used. Designing rooms to fit the standard size of key products can be a way to help reduce waste and costs.

The future use of materials selected includes consideration of whether they can be easily used again if the building were to be demolished. For example can sections be dismantled? Aluminium window frames are not always considered to be sustainable, but it is quite likely that the aluminium used to create the frames has already been used for another purpose and once the window frames reach the end of their life the aluminium can be recycled again.

The origin of some materials is important. This is particularly the case for hardwoods. Where sustainability schemes are in place it is wise to require designers and contractors and use them. The most well known example is the Forest Stewardship Certification (FSC) scheme for wood. There is now sufficient FSC wood in the market place at comparable prices to non-certified wood that there is no reason not to use it.

Questioning the use of certain materials can be a helpful process to go through, asking why painted wood is specified for an internal part of a building for example when un-painted wood would be perfectly acceptable. Considering alternatives can be useful, are hardwood panels required or would quick growing and hard-wearing bamboo be acceptable for example.

The use of previously used materials should be considered wherever possible. If a building or structure is being demolished the recovery and re-use of the materials should be considered

either on-site or nearby. The aggregate resulting from highway surface replacement activities can also be re-used.

5.0.2 What have we done about it?
Granular materials uncovered on the Jesmond Gardens Primary School were used to form a track for the adjacent allotments which prevented the material going to landfill and the purchase of virgin aggregate for the track.

The Local Plan supports and encourages the use of locally sourced materials and the re-use of building materials where possible.

Hart Church is using gravel from Hart Quarry for a memorial garden.

5.0.3 What can we do about it?

- Specify 100% FSC (or equivalent) wood in all contracts.
- Specify the re-use of materials on site wherever possible.
- Always source products locally where possible and include a requirement in contracts to use local builders merchants when procurement rules allow it.
- Consider the long term, can the materials specified in a contract be easily used again?

Marks & Spencer has committed to continue to look for opportunities to incorporate reclaimed and recycled materials and products where they have a good overall life cycle impact and particularly where there are existing materials on site. The company also employs whole life costing techniques in acknowledgement that a lower construction price is not necessarily the cheapest over the life of the building. The Council will consider adopting both of these ideas.

5.1 PROCUREMENT

5.1.1 Background
Getting the specification and procurement right are key starting points for a construction project to be sustainable. The use of whole life costing rather than simply the cost of the material at the point of purchase can be a practical way of ensuring long term value for money.

Making sure procurement processes encourage smaller local companies to supply materials and undertake contracts is a key way to support the local economy and reduce transport emissions.

Understanding the Council's own sustainability standards and then requesting similarly high standards from our suppliers will be encouraged. For example, the Council will encourage local suppliers by asking them to commit to sustainable construction if they are currently unable to offer sustainable products.

For larger contracts including pre-qualifications questionnaires the Council will seek information on the company's awareness of and commitment to corporate social responsibility, sustainable development and environmental standards.

5.1.2 What have we done about it?
Key procurement Officers have received in depth training on sustainable procurement.

The Council adopted a sustainable procurement strategy in 2010.

The Council is raising the threshold for quotations and are rolling out an e-quotation system which will invite 2 local suppliers for every 1 non-local supplier

The Council has a Construction Partnership which has a local supplier on it.

5.1.3 What can we do about it?

Officers in the Council's Procurement and Building Consultancy teams may need to work more closely in future to ensure any potential conflict between procurement-led purchasing of goods and services and design-led specification.

The Council will consider how to require and assess awareness and commitment to corporate social responsibility, sustainable development and environmental standards in the procurement process in a way which does not immediately preclude smaller companies.

The Council will consider how to use whole life costing in construction projects so that sustainability is not seen as an expensive additional measure.

5.2 CLIMATE CHANGE, ENERGY USE AND CARBON REDUCTIONS

5.2.1 Background

Climate change is a major challenge impacting on all areas of our lives, but the widely accepted and still relevant Stern Review of 2006 on the Economics of Climate Change[3] concluded that 'there is still time to avoid the worst impacts of climate change if we act now…'

The impact on existing buildings and how they are used is complex, and designs for new buildings must reflect the need to reduce Carbon emissions and improve the ability to cope with likely impacts of climate change.

Buildings are a major source of Carbon emissions: the built environment accounts for 47% of UK Carbon emissions.[4]

5.2.2 What have we done about it?

The Council has signed up to the European Union's Covenant of Mayors[5] which commits the organisation to reduce its Carbon emissions by more than 20% by 2020 against a baseline year of 2005.

In 2010, the Council adopted the Tees Valley Climate Change Strategy[6] and has since developed a Climate Change Adaptation Strategy and Risk Register. These documents will enable the Council to take an informed approach to reducing its impact upon the climate and to prepare for the anticipated impacts of climate change.

The Council has also worked extensively with the Carbon Trust to produce a Carbon Reduction Strategy. This strategy considers the carbon emissions directly resulting from energy and fuel

[3] http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/sternreview_index.htm
[4] Construction Skills http://www.cskills.org/aboutus/newsandevents/news/endorse-sustainable-skills.aspx
[5] http://www.eumayors.eu/index_en.html
[6] http://www.teesvalleyunlimited.gov.uk/economyplanningenvironment/documents/Tees%20Valley%20Climate%20Change%20Strategy%202010-2020.pdf).

use from Council services. It does not, however, address the issue of embedded carbon emissions.

The social housing developments at Belle Vue, Charles Street (Empire Square) and on Easington Road are designed to be energy efficient and some have the capability of generating electricity due to having photo-voltaic panels or cells on the roofs.

The Council's Local Plan sets the spatial strategy for the borough for 15 years. The plan includes policies on the built environment, climate change and renewable energy all of which are designed to reduce Carbon emissions. The Local Plan contains standards which the Council would like developers of new buildings to comply with.

The Council intends to install photo-voltaic panels on a number of its buildings to generate electricity so reducing both electricity bills and Carbon emissions.

5.2.3 What can we do about it?

The forthcoming supplementary planning document (SPD) on design will provide information on renewable energies and sustainable construction. The redevelopment of the Middlehaven[7] site in Middlesbrough is designed to be the UK's largest zero carbon development. The Council may wish to consider a smaller development of this nature in future years.

The Council needs to consider both the possibilities for Carbon reduction in renovating buildings and how to ensure its own building stock is resilient to the impacts of climate change.

Embedded carbon includes the carbon involved in the manufacture of the bricks in existing buildings for example. It is this Carbon which must be taken into account when plans for demolition, refurbishment and or renovation works are planned and undertaken.

[7] http://www.bioregional-quintain.com/middlehaven.html

5.3 WATER

5.3.1 Background

Water is becoming an increasingly scarce resource as a result of climate change and precipitation is becoming more erratic. In the Hartlepool area the impacts of climate change are likely to mean an increase in stormy weather which may result in damage to buildings, highways and other structures.

Treating water to ensure it is safe for drinking results in Carbon emissions. It therefore makes sense to reduce water use during construction and to plan for reduced water use once the building is occupied.

Watercourses and drains on and adjacent to construction sites must be protected from pollution which requires safe storage of materials on site for example.

5.3.2 What has the Council done about it?

The Council regularly considers the use of sustainable drainage schemes (SuDS) in designs to help address issues of erratic rainfall that may lead to flash flooding. For example a SuDS scheme was incorporated in the housing development Golden Meadows on Seaton Lane. This has resulted in the creation of an on-site pond which helps to control the rate and level of run-off from the development as well as creating enhanced habitat on site and supporting biodiversity as a result.

The newly created flood water retaining ponds west of Valley Drive will help to avoid flash floods in Stranton/Burn Valley. The Council has also installed rainwater harvesting and associated distribution in buildings. For example, when the Summerhill Visitor Centre was built it included water retention and water recycling features. The Council installs low water use taps as standard practice.

The Local Plan encourages the reduction of water use in the construction process and throughout the life of buildings. It also encourage the use of SuDS on strategic development sites such as the South West Extension strategic housing site.

5.3.3 What can we do about it?

The Council will install SuDS, water collection butts and tanks for new buildings, highways and other construction projects as appropriate. Care must be taken when using water butts on sites during the summer season due to the risk of legionnella.

The Council will consider installing green and brown (also known as bio-diverse roofs) roofs to reduce run-off and provide enhanced insulation and biodiversity. These roofs can demand more maintenance than standard roofs however this must be considered against the benefits they provide. (See natural environment theme for further details)

The forthcoming Design Supplementary Planning Document will provide information on the measures that can be put in place to reduce water use during the life of a building.

The Council may look at grey water recycling and rain water harvesting as ways of saving water. Both of these methods require water to be collected and stored in a tank before being filtered and treated so that it does not represent a health risk.

5.4 COMMUNITY

5.4.1 Background

Communities often feel construction sites are an intrusion into their normal lives with noise, dust and additional traffic common problems. The perception of these impacts can be improved through effective communication before the construction project even begins on site.

The 'community' impacted by construction sites is not a homogenous group, it is not simply the people living in the houses immediately around the site for example, it can be a much broader group of people who may not ordinarily be grouped as a community. It can include local businesses impacted by increased trade from construction workers or decreased trade due to road closures/highway construction/maintenance, school teachers and parents if roads near a school are closed or become difficult to access due to increased traffic and parking on roadsides.

The Considerate Constructors[8] scheme sets basic standards for the construction industry which is now commonly required.

Communities can benefit from construction schemes through training and employment opportunities. These opportunities can be delivered by contractors which are locally based or those which are based further afield but make a commitment to supporting the local workforce.

Safety of construction workers and those living/working near a construction site and site visitors is a key consideration within the community theme.

5.4.2 What have we done about it?

The main contractor working on Dyke House School for the Council is Balfour Beatty which has a zero harm scheme in place.

The Council always asks for Considerate Constructors scheme commitments in relevant tender documents. The scheme contributes to the score in the BREEAM[9] assessment.

[8] http://www.ccscheme.org.uk/
[9] BREEAM is the Building Research Establishment's Environmental Assessment Methodology

Many Council projects involve interactions with members of the public including residents, and schoolchildren during the construction phase and projects require appropriate control measures to be implemented to protect those at risk. The Council uses planning conditions relating to potential nuisance from construction activities including working hours.

The Council also uses inclusive design processes to allow the community the opportunity to influence the larger schemes including landscaping. The Council's Statement of Community Involvement encourages public involvement prior to submitting major planning applications.

The Council's Construction Design and Management Team have an early involvement in construction projects and the co-ordination of activities between designers and contractors helps to ensure that effective systems are in place to manage health and safety throughout the construction phase. This includes, where applicable, measures to reduce noise, dust, fumes, smoke and other nuisances.

The Council normally considers how contractors will minimise and mitigate against negative impacts upon the community. This can include newsletters, meetings, sign boards by way of communication; wheel washes to reduce mud on roads; damping down on site to reduce dust; restricted delivery times so impact on school drop off/pick up is reduced and locally agreed working hours.

The Council requires construction contractors to commit to employing/training a number of local people as a proportion of the overall workforce.

5.4.3 What can we do about it?

The Council's in-house constructor is not a member of the Considerate Constructors Scheme, consideration will be given to this in future. The Council will continue to ensure the protection of the community through contractual requirements and site monitoring; it will also promote local employment by targeting recruitment and training.

5.5 WASTE

5.5.1 Background

Construction, demolition and refurbishment activities account for over 100million tonnes of waste in the UK each year. Approximately 40% of this waste is sent to landfill, whilst 10-30% of materials ordered actually end up in a skip without being used.[10] This makes little sense in terms of natural resources and economics. In recognition of the issue of construction site waste the Government introduced the Site Waste Management Plans (SWMP) Regulations 2008 which includes a requirement for all construction projects over £300k to have a SWMP[11].

Waste arising from the construction industry can be reduced through simple measures such as intelligent ordering, just in time deliveries and re-use of 'waste' materials for example.

5.5.2 What have we done about it?

Standard clauses relating to SWMPs are included in documents relating to schemes that are tendered.

[10] Marks and Spencer Sustainable Construction Manual
[11] NetRegs http://www.netregs.gov.uk/netregs/businesses/construction/62359.aspx

In order to ensure compliance with the SWMP Regulations 2008 the Council requires the principal contractors to prepare and implement a SWMP that identifies the volume and type of construction and demolition waste, and demonstrates how off-site disposal of waste will be minimised and managed.

The Council encourages contractors to consider use of the National Industrial Symbiosis Programme (NISP) North East[12] which supports organisations in creating effective waste management and sustainable resource solutions.

The Council aims for 'lean' construction through waste elimination, value for money and reducing the environmental impact, both in terms of construction and during the life of a building.

5.5.3 What can we do about it?

The Council is considering asking tenderers to demonstrate a clear commitment to effective site waste management for contracts under the £300k SWMP threshold, this could include a site waste management policy.

Marks and Spencer have made a commitment that they will not send any waste to landfill from M&S store construction by 2012[13]. The Council could consider a similar commitment in future years.

5.6 DESIGN AND HERITAGE INCLUDING ARCHAEOLOGY

5.6.1 Background

The look of individual buildings contributes to the overall appearance of a place and can therefore have an immediate and lasting impact, negative or positive. The design of new buildings and structures in places of historic interest such as the Headland must be sensitive to their surroundings.

Design impacts upon the performance of the building. Building performance includes its ability to utilise the natural light and heat available from the sun. The installation of renewable sources of energy - such as photo-voltaic panels - on listed buildings and those in conservation areas where the impact on the integrity of the building can be minimised, will be considered.

Older buildings can be thought of as 'unsustainable' due to their poor insulation, but they can also be considered sustainable due to their embedded energy and the contribution they make to the heritage of a place. Renovating older buildings is a challenge both technically and sometimes economically, but it is almost always more sustainable than demolition. Original, architectural and unusual features add to a buildings value and so should be protected.

The archaeology of a place tells the story of its history and so must be protected. As a town with an industrial history, construction projects ought to be sensitive to this heritage. Industrial features may be retained and new buildings and structures designed to reflect the history of the site.

[12] http://www.nisp.org.uk/northeast.aspx
[13] Marks and Spencer Sustainable Construction Manual

5.6.2 What have we done about it?

Where an area may be of archaeological interest or if the area is already known to be of interest there may be a requirement to carry out trial trenches or, if required, more in depth survey works to confirm the extent of the interest and ensure suitable mitigation works are incorporated into a scheme.

Landscape projects within areas where archaeological remains are known or suspected are always screened by Tees Archaeology[14]. If there is a significant potential for such remains to be encountered an archaeological watching brief will be undertaken.

The Central Park scheme kept the 19th century railway coal drops as an integral feature of the infrastructure of the park where they act as retaining walls with explanatory information panels on site.

The renovation of Christ Church and its transformation into the Hartlepool Art Gallery and Tourist Information Centre gave a new lease of life for a redundant building which was sympathetic to its grade ii* listed status.

The Local Plan contains policies that relate to the protection and enhancement of the historic environment.

For many years the Council has run a conservation grant scheme offering support for improvement work on residential properties that are listed and located in conservation areas. Over the past five years, £330,000 has been spent in grant funding assisting residents in restoring their properties including work such as replacement windows and re-roofing. The conservation grant scheme covers traditional works rather than modern improvements however some residents use it as an opportunity to enhance the energy efficiency of their properties and install roofing insulation and draft proofing to windows and doors.

Alongside this scheme there have been grants for commercial properties in areas such as Church Street, this scheme was intended to support the buildings and historic fabric of the Church Street conservation area. Grants were provided to encourage investment by the owners of properties, through regular maintenance and upkeep, helping to increase the lifespan of the properties.

[14] http://www.teesarchaeology.com/

The Council encourages the retention of external architectural details and original features in improvements schemes as it is often these details which contribute to the special character of a conservation area.

5.6.3 What can we do about it?

The forthcoming Design SPD will include information on conservation area characteristics and information in relation to why our heritage is important. The SPD will seek to ensure that our heritage is not lost and where possible it is enhanced.

The development of 'Design Guides' specific to the borough's historic areas, primarily the Conservation Areas are being considered, it is likely they will include information on design vernacular, materials, finishes, and signage for example.

The Council has advice notes on windows in historic properties which are available on the Council website and are provided on request which give contextual information on repairs, replacements and enhancements for example secondary glazing.

5.7 NATURAL ENVIRONMENT

5.7.1 Background

The natural environment provides habitats for wildlife, land for agricultural production and access to the natural environment provides opportunities for people to enjoy it. Biodiversity is a crucial factor in our general health and well-being.

Spaces in between buildings and roads for example do not have to be large or formally organised to have a value, but linking these spaces provides greater opportunity to support biodiversity.

Parts of the natural environment are protected by legislation and must not be damaged by construction activities. These areas will have been designated due to their importance for plant life, wildlife, landscape features and so on. All construction projects should seek to protect the

natural environment as a minimum and make enhancements wherever possible. The impacts of the construction project upon biodiversity need to be considered at the earliest stages in its planning, both to protect and benefit wildlife but also to ensure that there are no unforeseen hold-ups due to the discovery of protected species at a late stage in the development.

Damage to habitats and species can be caused by removal of the habitat itself, adding or removing water and from noise and dust for example. Conversely new developments can provide opportunities to enhance biodiversity.

5.7.2 What have we done about it?

The Council continues to investigate green links throughout the town and its hinterland, with projects such as the Burn Valley Gardens Access to Nature Project key contributors to connecting areas of publicly accessible green space.

The Local Plan and the Tees Valley Green Infrastructure Strategy[15] require or encourage as appropriate, the preservation and enhancement of the natural environment.

The Council has published guidance as to the situations where a bat survey would be required with regards to buildings

5.7.3 What can we do about it?

The Local Plan seeks to enhance existing and create new green wedges and corridors such as in the South West Extension strategic housing site and Golden Flatts. The North Area Linear Park project seeks to provide links between areas of green space that could offer opportunities for recreational use and habitat creation.

The Council will specify native and locally common species of plants, shrubs and trees in landscaping schemes where appropriate.

In specifying and undertaking construction activities the Council will respect the natural environment and will seek to improve and enhance the biodiversity of the area where possible.

Sharrow Primary School in Sheffield features the first green roof in the country to be declared a local nature reserve[16]; Hartlepool Borough Council will encourage the installation of green or brown roofs on buildings it is commissioning or renovating (see also the water theme section) and will encourage developers to include plans for green roofs. Green roofs and brown roofs have a number of benefits including enhancing biodiversity, habitat creation, reducing storm water run off and reducing the impact of solar heating and the resultant temperature fluctuations experienced during the day. These roofs can also assist with natural cooling to the internal spaces, helping to minimise any requirement to reduce temperatures by mechanical means, such as fan systems.

The loss of bat roosting opportunities due to improvements in housing standards is thought to be a serious issue for the future. It can be addressed by providing bat roosting opportunities in new build schemes or renovations.

The forthcoming Design Supplementary Planning Document will include information on how to add biodiversity and habitat to new developments.

[15] http://teesvalleybiodiversity.org.uk/wp-content/uploads/2008/09/tv-green-infrastructure-strategy-final-version-march-20081.pdf
[16] Marks and Spencer Sustainable Construction Manual

5.8 ACCESS AND MOVEMENT

5.8.1 Background

Access and movement include a range of topics from formal transport routes through to informal pedestrian links between green spaces. The most sustainable forms of movement are those which require no external source of energy, so walking and cycling. Public transport and electric vehicles (depending on the energy source for the electricity) are the most sustainable form of engine powered movement. These forms of movement ought to be supported and prioritised ahead of private car use.

Pedestrian and cycle routes need to be well planned so that they connect homes, places of work and services which people use such as GP surgeries and shops. The routes need to link up and ought to be clearly visible for safety reasons. Secure cycle stores are a key part of a strategy to encourage people to use their bikes, as are showering facilities. Helping people to use their car less can be included in design and construction projects by considering pedestrian and cycle access first and as a priority.

The construction of footpaths, cycle routes, roads and railways usually involve large quantities of aggregate matter, preferably this material will be pre-used or recycled to reduce the amount of raw materials required and waste produced.

Sourcing building materials locally helps to reduce the amount of freight on roads and CO_2 emissions from transporting goods, and so should be encouraged where possible.

5.8.2 What have we done about it?

The Council has installed electric vehicle charging points at the Transport Interchange, in the Civic Centre car park and they will be provided at Dyke House School.

Through planning policy contained within the Local Plan and the Transport Assessments and Travel Plans Supplementary Planning Document, the Council supports and promotes safe and convenient access for all, from a variety of modes of transport, especially more sustainable measures such as walking and cycling.

5.8.3 What can we do about it?

It is accepted that car transport will be required so a network of electric charging points should be incorporated into plans for housing, retail and commercial developments.

The procurement system can be used to encourage and require large scale contractors to have a sustainable travel plan in place for their employees.

Bulking up deliveries outside of busy or quiet residential areas can help to reduce congestion and traffic pollution and should be encouraged where appropriate.

6.0 REVIEW

This strategy will be reviewed in 2013/14 and will be updated taking account of changes and developments to the sustainable construction agenda nationally, and within the Council.

In future years the Council may consider discussing the content of this strategy with external organisations with the aims of establishing their approach to sustainable construction and

encouraging better practice if appropriate. The Council may also consider only letting contracts to companies willing to sign up to the strategy.

GLOSSARY

Climate change
Climate is the long-term average of a region's weather and climate change can be described as any long-term changes of fluctuations in weather patterns. This includes changes in temperature, rain and snow, cloud cover or prevailing wind direction. Climate change happens naturally due to a variety of factors, such as changes in the earth's orbit around the sun. Since industrialisation humans have substantially altered the properties of the earth's atmosphere by burning large quantities of fossil fuels such as oil, gas and coal.

CO_2
Carbon Dioxide is also known as CO_2 and is one of the main gases released from burning fossil fuels (see climate change above).

Embedded Carbon
Embedded Carbon is the Carbon already contained in a material or a product through the amount of energy required to produce it, it can also be referred to as embodied energy.

Green roofs/brown roofs
Green roofs have been designed to have vegetation growing on them and can cover the whole or part of a roof. A green roof will include a waterproof layer and a growing medium, the plants are often sedum and moss. Green roofs can be 'intensive' or 'extensive' depending on their design, this generally dictates the level of maintenance required. Brown roofs are also known as biodiverse roofs and are more usually designed to have a growing medium which is either seeded or left to self-colonise with plants.

Grey water recycling
Grey water recycling refers to the re-use of water commonly used for dish-washing, washing of clothes or showering for example. The water is most commonly used for toilet flushing or garden watering.

Local Plan
A Council's Local Plan sets out the spatial vision, spatial objectives and core strategic policies for the area.

Off-site construction
Traditional methods of construction usually involve the majority of building processes being undertaken on the construction site; off-site construction generally refers to parts of a building such as wall panels, roof structures and kitchen or bathroom pods being constructed in a factory and transported to the main 'construction' site. This method can considerably reduce the amount of time spend 'on-site' and as a result can improve safety and reduce nuisance.

Photo-voltaic panels
Photo-voltaic panels and cells are often referred to as PV panels and use sunlight to generate electricity, this electricity is classed as 'renewable'. The electricity generated can be used on site or can be exported to the National grid.

SPD

A supplementary planning document or SPD, is a way of the Council providing more detail and guidance on specific policy issues or locations within the borough than is contained in a Core Strategy.

SuDS

Sustainable drainage systems (SuDS) are used primarily in order to slow the rate of rain water run-off and decrease the likelihood of flooding. SuDS usually include storage ponds which provide added benefits including amenity and biodiversity value.

Sustainable development

Development which meets the needs of the present without compromising the ability of future generations to meet their needs is a commonly used definition which originated via the United Nations. Sustainable development is a set of guiding principals and objectives which include considering the community, economy and environment in an integrated way, thinking about the long term (at least one or two generations into the future) and the global impacts of decisions and actions as well as governance and participation.

Whole life costing

Rather than only thinking about the cost of goods or materials at the point of purchase, whole life costing considers the costs of design, manufacture, maintenance and disposal of an asset for example. This can be useful as good design may reduce maintenance and repair costs for example.

Sources of information used in the preparation of this document and those which may be of interest include:

The Building Research Establishment (BRE)
www.bre.co.uk

The Green Guide
http://www.bre.co.uk/greenguide/podpage.jsp?id=2126

Marks and Spencer's Sustainable Construction Manual
http://corporate.marksandspencer.com/documents/publications/2010/sustainable_construction_manual

http://www.cutcarbon.info/
This site helps small and medium-sized construction companies understand the changes within the construction industry and makes those changes simple to understand. In doing so it increases the opportunities open to companies to benefit from low carbon.

http://www.wrap.org.uk/construction/
Play your part and help the construction industry halve waste to landfill by 2012.

http://www.netregs.gov.uk/netregs/businesses/construction/default.aspx
This guidance is for anyone working in building, demolition, civil engineering and building trades.

HM Government Strategy for Sustainable Construction 2008
http://www.berr.gov.uk/files/file46535.pdf

Construction Sills Built to Last programme
http://www.cskills.org/uploads/buildtolastworkshopreport_tcm17-6838.pdf

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