

Sustainability Statement

South Shields Town Centre Regeneration Town Centre Masterplan



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Muse Developments and South Tyneside Council propose the sustainable regeneration of South Shields Town Centre with buildings and spaces that are connected, energy efficient and low carbon

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Executive Summary

The redevelopment of South Shields town centre aims to provide a range of new commercial buildings and public realm improvements that will create a more sustainable town centre for present and future generations.

The masterplan proposal is part of a wider, holistic approach to the regeneration of South Shields and the outline planning application comprises of a number new commercial buildings including; a food store, a cinema, restaurants, retail units, cafes and a multi storey car park on land between King Street and Coronation Street to the west of Waterloo Square, and an area between Fowler Street and the Rail embankment to the east, linking Burrow Street and Crossgate.

The applicants are committed to the sustainable regeneration of South Shields to deliver high quality, energy efficient and low carbon buildings and wide ranging social and economic benefits for the area.

In this context a bespoke sustainability strategy is proposed that reflects the specific sustainability priorities of South Shields and the site specific opportunities and constraints relevant to the masterplan area.

Energy and Carbon Emissions

The masterplan aims to deliver new buildings which minimise energy consumption and carbon emissions through a fabric first approach to design and construction.

The masterplan's various different building types will each have unique and individual energy requirements requiring specific individual design solutions to ensure they are as energy efficient and low carbon as possible.

Some buildings, such as the cinema will require very unique thermal and internal environment

controls, and priority is to be given to passive and low carbon solutions for both heating and cooling.

The majority of the masterplans building types can be significant energy consumers both in heating, cooling, and electricity consumption.. Energy efficient and low carbon solutions and opportunities for heat recovery are to be prioritised.

The masterplan is committed to minimising carbon emissions in support of local sustainability policy and all new buildings within the masterplan area will as a minimum achieve the carbon reduction standards of the latest 2013 Part L Building Regulations.

The masterplan presents the opportunity for a range of low carbon and renewable energy technologies to be considered and the detailed design of individual buildings within the masterplan area will consider the feasibility and viability of the installation of technologies based on individual building energy demands and specific location constraints.

Sustainable Construction

The outline masterplan proposes the development of new modern buildings on previously developed brownfield land within each of the relevant masterplan character areas.

The masterplan aims to minimise any adverse impacts of development on the environment, community, people and existing buildings and prioritises the use of sustainable and responsibly sourced materials of low environmental impact, for all major building elements.

Consideration will be given to registration of individual construction sites with the Considerate Constructors Scheme or

equivalent and targeting high standards of performance

Water Efficiency and Conservation

Potable water is an increasingly important natural resource and the masterplan aims to support efficient water consumption and management in construction and operation.

During the construction of each phase appropriate measures to monitor and reduce water use will be implemented. The different buildings within the masterplan area will each have very differing water consumption profiles and at the detailed design stage integration of appropriate measures such as low flow fittings and equipment appliances to minimise occupational water use will be prioritised

Sustainable Waste Management

The masterplan is committed to resource efficiency and minimising waste. The proposals will prioritise the efficient use of materials in accordance with the waste hierarchy and encourage re-use and recycling during demolition and construction.

All new buildings will be designed to encourage recycling in operation in response to specific operational waste impacts. This will include provision of dedicated waste management areas to enable the segregation of recyclable waste and appropriate recycling bins in public areas aligned with the council's waste collection services.

Sustainable Travel

Encouraging more sustainable travel is a key aim of the masterplan promoting improved movement and connectivity within the town centre in combination with new combined bus and metro Transport Interchange.

The masterplan includes the improvement of the existing public realm creating a much more attractive walking environment. As part of the masterplan a number of road areas are to be reclaimed for pedestrian space and a number of new pedestrian routes will be provided improved permeability across the town centre.

The masterplan includes proposed improvements to the local cycle infrastructure including the provision of new public realm cycle parking facilities which aims to encourage more visitors and staff to cycle. New buildings also provide the opportunity for high quality cycle parking and related facilities.

Health and Wellbeing

The masterplan aims to create a welcoming environment with new buildings and public realm landscaping which provides more coherent, easy to navigate spaces and will encourage greater and more inclusive use of the area.

It aims to encourage walking and cycling and enhance accessibility and provide a safe and secure environment for disabled people and families.

The masterplan also includes a wide range of new leisure facilities for the town centre including cinema, restaurants and cafés and new buildings will aim to support and enhance health and wellbeing through good design, creating functional and comfortable internal environments.

Flood Risk and Sustainable Drainage

The masterplan area is located in Flood Zone 1 and is considered to be at a low risk of flooding. As part of the masterplan's commitment to sustainability and meeting the challenge of climate change a surface water management strategy is proposed to reduce surface water runoff through Sustainable Drainage.

Biodiversity and Pollution

The urban masterplan area has no areas of significant ecological value within the masterplan application boundary.

The existing buildings within the site have been assessed to be of negligible ecological value and the proposed development will not have any adverse impacts upon existing habitats or protected species.

New amenity planting is proposed as part of the wider landscaping scheme which will contribute to urban greening and biodiversity. The existing scrub habitat on the railway embankments is also to be retained and protected during development.

To minimise pollution the masterplan will prioritise the use of responsible construction practices and materials with low environmental impact and adopt suitable safeguards to minimise pollution risks.

The masterplan aims to support the sustainable urban regeneration of South Shields improving movement within the town centre creating high quality, energy efficient and low carbon buildings within key character areas, delivering long term social and economic benefits to the area.

The masterplan will deliver an **accessible, connected, energy efficient and low carbon town centre** that supports a **sustainable local economy**

1. Introduction

This Sustainability Statement has been prepared to demonstrate how the South Shields regeneration masterplan will deliver sustainable development and reflect local sustainability priorities and site specific opportunities and constraints.

This report considers the relevant sustainability policies and drivers supporting the delivery of more sustainable development including the National Planning Policy Framework and the local sustainability policies and objectives of South Tyneside Council. It sets out the key sustainability issues and proposed measures incorporated within the masterplan as appropriate to the outline planning application.

Site and Surroundings

The application site is located in the centre of South Shields and covers an area of 4.9 hectares to be redeveloped to provide new commercial buildings including; a food store, a cinema, restaurants, retail units, cafes and a multi-storey car park in combination with significant public realm improvements associated with the new buildings.

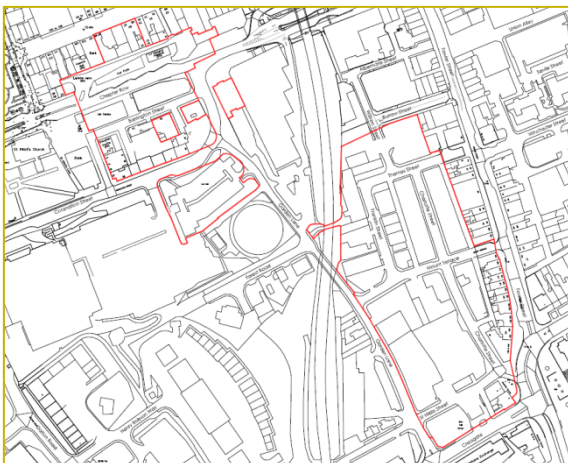


Figure 1: masterplan site boundary

Proposed Development

The masterplan is designed to promote improved connectivity through the town and promote introducing a new retail and leisure core to the town centre. The applicant is seeking outline planning permission for the regeneration of the masterplan area including:

- A food store
- A cinema (5 screens)
- Restaurants
- Five retail units
- Three Cafes
- A new multi storey car park

The outline planning application comprises

Demolition of properties on King Street, Barrington Street, Coronation Street, Fowler Street, Thomas Street, Franklin Street, Charlotte Street, Mount Terrace, St Hilda Street and Crossgate and existing bus stands on Chapter Row. Erection of A1 retail uses (7,028sq m), A3 restaurants and cafés (2,060sq m), D2 cinema (2,745sq m) and an A1 foodstore (6,039sq m) with multi-storey and surface car parking (all matters reserved).

Full details of the proposed development are provided within the Design and Access Statement and Planning Statement that accompany the outline planning application.

2. Policy Context

This section of the report provides an overview of the relevant sustainability policy and guidance supporting the delivery of sustainable development from a national and local perspective.

UK Sustainable Development Strategy

In 2005, the Government published an updated strategy for implementing sustainable development across the UK.

This strategy acts as an overarching document from which a range of specific policies and legislation has been derived. Although published in 2005, the strategy has taken a recently renewed focus in light of the Government's definition of Sustainable Development in the NPPF.

One of the key aims of this strategy is to recognise the threats of climate change and ensure that the UK develops a strategy to mitigate and adapt to this phenomenon.

The document established five key principles that underpin the national sustainable development strategy:

- 1. Living within Environmental Limits;**
- 2. Ensuring a Strong, Healthy and Just Society;**
- 3. Achieving a Sustainable Economy;**
- 4. Promoting Good Governance; and**
- 5. Using sound science responsibly.**

The strategy will be implemented at a national level through the development of more specific strategies at a Government department or sector level.

With regards to planning and the built environment, this document set the basis for the development of plans and policies that promote development that mitigates and adapts to climate change.

Climate Change Act

The Climate Change Act (2008) sets a legally binding target for reducing UK CO₂ emissions by least 80% on 1990 levels by 2050.

It established the Committee on Climate Change, which is responsible for setting binding interim carbon budgets for the Government over successive five year periods. The first three carbon budgets were announced in the Budget 2009, resulting in an interim target of a 34% reduction in CO₂ equivalent emissions on 1990 levels by 2020.

UK Carbon Plan

In 2011, the Government published an updated Carbon Plan setting out how the UK will achieve decarbonisation and make the transition to a low carbon economy. It sets this objective within a framework of mitigating and adapting to climate change and maintaining energy security in a way that minimises costs and maximises benefits to the economy.

With regards to development, the Carbon Plan presents the Government's approach to promoting the delivery of low carbon, resilient and adaptive buildings and enabling sustainable transportation as positively contributing to these national carbon reduction targets.

Building Regulations

The primary mechanism for reducing carbon emissions in new development is through progressive changes to Part L (conservation of fuel and power) of the Building Regulations.

Whilst not planning policy the Building Regulations, and specifically Approved Document Part L, Conservation of Fuel and Power is relevant as it determines the energy efficiency and carbon emissions of new buildings.

The primary vehicle for reducing carbon emissions in new buildings is through progressive changes to Part L and in 2006 the Government established a policy whereby these regulations would be gradually improved in phases from 2006 to 2019.

The latest revision of the Building Regulations released in April 2014 requires new non-residential buildings to achieve an aggregated carbon reduction of 9% over Part L 2010. The new regulations recognise the improvement made by non-residential buildings in the 2010 regulations and the achievable carbon reductions for different building types.

Future step changes in the Building Regulations are anticipated to require new non-residential buildings to be zero carbon by 2019. This is likely to require significant onsite carbon reductions with residual carbon emissions offset via the Allowable Solutions mechanism.

These changing national regulations will drive energy efficiency and carbon reduction improvements in new buildings forward towards ultimately delivering zero carbon standards.

BREEAM

BREEAM is a nationally recognised sustainability standard which assesses the sustainability of new buildings scoring the results and providing a performance rating.

BREEAM can be a very prescriptive sustainability assessment metric and has been developed to capture sustainability criteria relevant to a wide and varied cross section of building types. It has prescriptive requirements which are not always reflective of specific local sustainability priorities or that of building owners and users.

In some instances BREEAM can add value and be an appropriate means to drive higher standards of sustainability performance of new buildings. Within the masterplan area consideration will be given to the use of BREEAM as is appropriate to individual buildings within the masterplan area and each occupants own sustainability objectives and priorities.

National Planning Policy Framework

Following its publication on 27 March 2012, national planning policy is now provided by the NPPF which sets out the government's planning policies for England and how these are expected to be applied. It also sets out the requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.

The Government has made clear its expectation that the planning system should positively embrace well-conceived development to deliver future economic growth. The NPPF states that: 'The purpose of the planning system is to contribute to the achievement of sustainable development'.

It states clearly that in order to deliver sustainable development, the planning system must perform three distinct roles, aligned to the three pillars of sustainability, which must not be taken in isolation and should be pursued jointly:

An economic role contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development

requirements, including the provision of infrastructure;

A social role supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and

An environmental role contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

Demonstrating Sustainable Development

Paragraph 6 of the NPPF states that:

“The purpose of the planning system is to contribute to the achievement of sustainable development. The policies in paragraphs 18 to 219, taken as a whole, constitute the Government’s view of what sustainable development in England means in practice for the planning system”.

The policies referred to in Paragraph 6 of the NPPF have been divided into 13 themes;

- 1. Building a Strong Competitive Economy**
- 2. Ensuring the Vitality of Town Centres**
- 3. Supporting a prosperous rural economy**
- 4. Promoting sustainable transport**
- 5. Supporting high quality communications infrastructure**
- 6. Delivering a wide choice of high quality homes**
- 7. Requiring good design**

8. Promoting healthy communities

9. Protecting Green Belt Land

10. Meeting the challenge of climate change, flooding and coastal change

11. Conserving and enhancing the natural environment

12. Conserving and enhancing the historic environment

13. Facilitating the sustainable use of minerals

Should a proposed development demonstrate that it is supporting the relevant policies of the NPPF then it is deemed to be ‘Sustainable Development’.

Planning Practice Guidance

In March 2014 the Government released the updated Planning Policy Guidance document (The Guidance). The Guidance provides information to local authorities on how to implement the policies of the NPPF and approach specific policy aims.

The Guidance sets out how local authorities should include policies that protect the local environment and strategies to mitigate and adapt to climate change. It supports developments of good design that are functional and adaptable for the future.

The Development Plan

The Development Plan for the application comprises of policies from the existing adopted Core Strategy and guidance from documents within the Local Development Framework.

- **South Tyneside Local Development Framework – Core Strategy (2007)**
- **South Tyneside Local Development Framework – Development Management Policies (2011)**

As well as the policies in the adopted local plan there are additional requirements set out in a number of Supplementary Planning Documents (SPDs) including:

- **SPD1 – Sustainable Construction and Development (2007)**
- **SPD2 – South Shields Riverside Regeneration (2009)**

South Tyneside Local Development Framework – Core Strategy (2007)

The Core Strategy adopted in 2007 sets out the strategy for development in South Tyneside. The adopted Core Strategy includes the following policies relevant to this development.

Policy ST2 – Sustainable Urban Living – The Council requires development to be of a high quality, incorporating, where possible:

- *High quality design;*
- *Sustainable construction materials and techniques;*
- *Generation of 10% of the energy requirements onsite;*
- *Sustainable Drainage and grey water recycling;*
- *Measures to reduce crime;*
- *Measures to encourage sustainable travel;*
- *Design which is adaptable for the future;*
- *Improved site biodiversity.*

South Tyneside Local Development Framework – Development Management Policies (2011)

This Development Plan Document (DPD) sets out policies to address locally distinctive issues not covered elsewhere in national or local policy.

The document includes the following policy relevant to this development.

Policy DM1 – Management of Development –

New development is expected to be designed to; achieve low carbon emissions, be energy efficient, maximise the use of renewable and low carbon energy and be resilient to the effects of Climate Change. Where relevant development should also include green space, create opportunities for sustainable travel and incorporate sustainable drainage and waste management.

SPD 1 – Sustainable Construction and Development (2007)

This SPD provides guidance for developers on the importance of sustainable development and information on the requirements of Sustainability Statements which are required for larger developments.

The document includes a sustainability checklist of design features to be considered by new development under the following themes:

- *Energy efficient layout and design*
- *Energy efficiency and construction*
- *Renewable energy*
- *Sustainable construction*
- *Water efficiency and conservation*
- *Sustainable waste management*

SPD 8 – South Shields Riverside Regeneration (2009)

The document sets out the policy and design framework for the redevelopment of the South Shields Riverside Regeneration Area and includes **Principle SSR1 – Sustainable Design** – New non-residential development is encouraged to incorporate the principles of Secured by Design and target a BREEAM Excellent rating.



Review of Policy Implications

National and local policy supports development which is sustainable and provides economic, social and environmental benefits. Central to the vision for sustainable development in Tyneside is the approval of development that jointly promotes economic, social and environmental benefits.

The adopted Core Strategy, Area Action Plan and Supplementary Planning Documents support the delivery of energy efficient and low carbon new buildings. The Council requires a Sustainability Statement to accompany major planning applications and demonstrate the measures incorporated within proposals to support the delivery of sustainable development.

In this context a bespoke sustainability strategy has been developed for the town centre masterplan reflecting the unique nature of the development, its character areas and the range of building types proposed in response to local sustainability priorities and to ensure the sustainable regeneration of South Shields.

Full details of the Sustainability Strategy and measures incorporated within the masterplan for the outline planning application are provided in Section 3 of this report.

3. Sustainability at South Shields

This chapter summarises the proposed sustainability strategy for the South Shields masterplan and how this will support the delivery of sustainable development for the benefit of present and future generations.

Sustainability is an integral part of the masterplan and the vision for the regeneration of South Shields. The proposals promote resource and energy efficiency, more sustainable travel patterns and lifestyles, resilience and adaptability to climate change and safeguarding of the natural environment.

Achieving Sustainable Development

Sustainability has been considered for the town centre masterplan under the following chapter headings which reflect the Sustainable Development Themes of the NPPF and the Council's own sustainable construction and development priorities.

3.1 Energy and Carbon Emissions

3.2 Sustainable Construction

3.3 Water Efficiency and Conservation

3.4 Sustainable Waste Management

3.5 Sustainable Transport

3.6 Promoting Health and Wellbeing

3.7 Flood Risk and Sustainable Drainage

3.8 Biodiversity and Pollution

3.1 Energy and Carbon Emissions

The outline masterplan proposals consist of a wide range of building types including food store, a cinema, restaurants, retail units, cafes and a car park.

The proposals aim to provide sustainable, high quality new buildings which are energy efficient and low carbon incorporating measures to minimise the impacts and risks of Climate Change.

As a mixed-use development the energy and carbon reduction strategy will vary for each of the different building types and in this context this section sets out how the outline masterplan area will improve energy efficiency and reduce carbon emissions.

Energy Efficient Layout and Design

All buildings within the masterplan area will prioritise a fabric first approach to design and construction. This will minimise energy use and support a range of passive and active measures specific to the energy demands and use of each individual building.

Local sustainability policy encourages development to maximise the use of natural systems. To create an urban environment which optimises layout and design for energy efficiency the following measures are to be prioritised for all new buildings

- *Passive solar gains;*
- *Natural day lighting;*
- *Natural ventilation.*

Passive Solar Gain

New buildings within the masterplan will be orientated where possible to take advantage of passive solar gain. All buildings will aim to optimise south facing glazing and internal layouts whilst giving due consideration to the impact of daylighting, glare and risk of overheating.

The dense urban location of the masterplan areas in the context of existing buildings does present challenges in respect of the orientation of buildings.

The density and scale of development provides the opportunity to design-in energy efficiency as well as resilience and adaptability to future climate change risks. All buildings within the masterplan area will give consideration to risks of overheating and thermal comfort and the need for solar shading to mitigate any risks.

Natural Daylighting

Maximising the potential for natural daylighting will help create naturally lit, welcoming and healthy spaces and also reduce the demand for artificial lighting and associated energy use and carbon emissions. All new buildings will be designed to optimise the potential for the use of natural daylight.



Natural Ventilation

All new buildings will prioritise a natural ventilation strategy where possible to reduce energy demand. Consideration will need to be given to security and air quality in determining

the suitability of natural ventilation in specific circumstances. Where mechanical ventilation is required this will prioritise high efficiency and heat recovery for zoned internal spaces to minimise energy use and carbon emissions

It is anticipated that given the range of development across the site some of the buildings such as the food store and cinema are likely to require cooling.

Where the need for cooling is identified those buildings will be designed to minimise active cooling requirements in accordance with the cooling hierarchy; minimising internal heat gains and overheating from solar gains, managing heat through thermal mass and incorporating passive ventilation measures before considering mechanical and active cooling systems, wherever possible.

Energy Efficiency and Conservation

Over the past decade there have been significant improvements in the energy performance standards for new non-residential buildings. The latest Building Regulations Part L 2013 requires new non-residential buildings to achieve a typical 9% reduction in carbon emissions over the previous 2010 Part L requirements.

A Fabric First Approach

The masterplan proposes a fabric first approach to design and construction which supports local sustainability policy and is widely regarded as best practice and is therefore the first and most important step to reducing carbon emissions.

This approach has a number of distinct benefits including passively reducing primary energy demand with virtually no maintenance and/or replacement costs to maintain the carbon reductions achieved.

Reducing the demand for heating, cooling and power through a well-constructed and insulated building fabric is recognised as the most effective way of minimising carbon emissions.

This is in accordance with the government's Zero Carbon Buildings Policy and ensures that buildings are as cost and energy efficient as possible.

It is anticipated that the different buildings within the masterplan area will tackle demand reduction with different solutions, focussing on priority areas related to energy consumption. For example the food store is anticipated to have a high year round demand for electricity for lighting and refrigeration whilst the café and restaurant units are likely to have a much higher and frequent hot water demand. Different solutions will therefore be investigated and implemented.

To the south of New Barrington Street the new leisure scheme is designed around the retention of the existing 16 and 18 Barrington Street buildings which do not form part of the application. It is anticipated, however, that these buildings will be redeveloped and provides the opportunity for improvements in energy efficiency and carbon emission reductions of existing heritage assets within the Town Centre.

All new buildings within the masterplan area will aim to reduce energy requirements by targeting low air leakage and fabric U-Values. This will create more airtight and thermally efficient internal environments by reducing energy consumed in heating and cooling, facilitating the creation of comfortable and resilient internal spaces.

Table 1 sets out provisional target U-values for the masterplan area to support high standards of energy efficiency. These will be considered at the detailed design stage of individual buildings to ensure they are as thermally efficient as possible, whilst meeting all other design criteria and occupant requirements.

Table 1: Target U-values and air permeability

Building Element	U-value (W/m ² k)
Walls	0.19
Roof	0.16
Floor	0.25
Windows	2.0
Air permeability target – ≤5m ³ /m ² /hr @50pa	

The exact specification and thermal performance of construction materials will vary by building and will be confirmed during detailed design of each phase and individual building within the masterplan area.

Efficient Building Services and Equipment

Additional 'active' measures can further enhance the energy efficiency of new buildings within the masterplan area including:

- *Energy efficient (LED) lighting and controls;*
- *The installation of high efficiency heating and cooling systems where required;*
- *Appropriate temperature controls and thermal zoning of different building areas;*
- *Use of high efficiency and heat recovery systems*
- *The use of building monitoring systems (BMS).*

The specific energy efficiency measures adopted by individual buildings will respond to specific occupant energy needs and be determined at the detailed design stage

Low Carbon and Renewable Energy

Local planning policy encourages the use of low carbon and renewable energy where feasible and viable.

As stated previously, the masterplan comprises a number of buildings with a wide range of uses which have very different energy demands. At the outline application stage it is not possible to determine the specific technologies for individual buildings, however, the potential opportunities for low carbon and renewable energy within the masterplan area have been considered to determine those technologies most likely to be suitable for further investigation at the detailed design stage and which buildings may be able to incorporate low carbon and renewable energy systems.

District Heating and Combined Heat and Power (CHP)

At the outline stage the development has considered opportunities for the use of Combined Heat and Power (CHP) and the feasibility of the creation and/or connection to any local decentralised heating networks.

A review of local heat networks and the National Heat Map (Figure 2) shows that there are no other local networks or significant heat users within the vicinity of South Shields that the new buildings could connect to or act as an anchor load for the development of a new network.

Heating networks work by providing heat to a number of buildings via a centralised heat source, often a natural gas fired CHP engine and hot water distribution network. District Heating networks require a critical mass of heat demand to be feasible and viable in operation.

Improvements in the thermal efficiency of the new buildings as a result of compliance with the latest Building regulations are anticipated to substantially reduce energy demand for space heating which, in turn, reduces the viability of any decentralised heating networks.

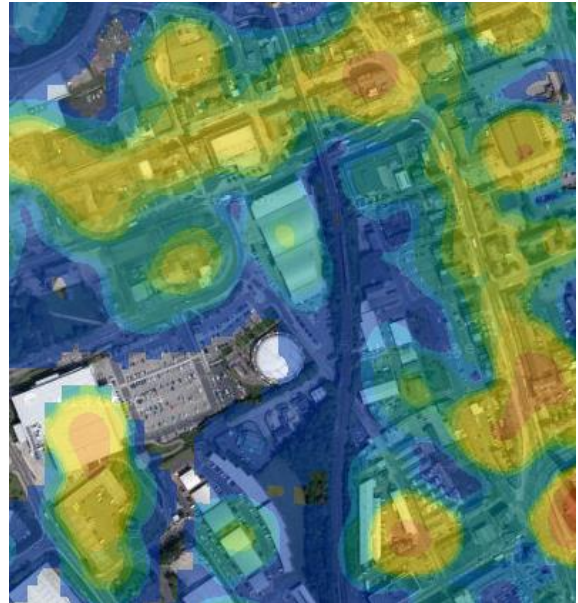


Figure 2 – South shield masterplan heat demand

The high efficiency of new buildings and spatially dispersed and phased nature of the proposed development does not lend itself to the implementation of a viable heat network with no significant single heat demand anchor load or established heat infrastructure.

Whilst a heat network is not anticipated to be feasible or viable at this stage there may be the opportunity to reevaluate this in the future and consider the installation of small scale CHP system in buildings such as the food store which is likely to have a constant year round thermal demand and high electrical load.

Renewable Energy Opportunities and Constraints

Local Policy ST2 encourages new development to deliver 10% of its energy demand from low carbon or renewable energy sources. The masterplan provides the opportunity for a range of low carbon and renewable energy technologies to be considered during detailed design and informed by individual building energy demands and locational constraints.

Table 2 below presents a strategic review of those technologies that could be suited to the development proposals.

Table 2: renewable energy opportunities

Technology	South Shields Masterplan suitability
Solar PV	<p>Solar PV systems generate electricity and are potentially feasible on roofs orientated within 30 degrees of south and on pitched or flat roofs within the masterplan area.</p> <p>The greatest energy and carbon savings will be achieved from solar PV in supplying buildings with a high year round electrical demand. Within the masterplan's dense urban setting consideration has to be given to the local character and site specific constraints such as shading from existing or other new buildings. The illustrative masterplan has orientated a number of buildings towards the south and a number of the larger units may have suitable roof space for the deployment of Solar PV.</p> <p>The deployment of Solar PV is deemed a suitable technology for the proposed development and the feasibility will be assessed further at the concept design stage.</p>
Solar Thermal Hot Water	<p>Roof-mounted SHW systems use the sun's energy to generate hot water and are also potentially feasible for buildings with roofs orientated within 30 degrees of south.</p> <p>SHW systems are suited to buildings with a high hot water demand and that can provide sufficient internal space for hot water storage. As with Solar PV consideration has to be given to the local character and site specific constraints such as shading from existing or other new buildings. The use of SHW is likely to be suitable for buildings with a high hot water demand such as restaurants and cafes where suitable unobstructed roof space is available. The feasibility of this technology will be considered at the concept design stage.</p>
Biomass Heating	<p>Biomass boilers can provide hot water and space heating to buildings however systems require sufficient space for fuel storage and access for delivery. Biomass boilers are best suited to buildings which have continuous heating demands such as the supermarket. Biomass systems do require regular maintenance and there can be risks associated with irregular fuel supplies.</p> <p>The dense urban environment and associated space and accessibility constraints in combination with potential impacts on local air quality and road traffic congestion mean biomass is unlikely to be suitable in most instances within the masterplan area. It could potentially be considered for specific buildings with stable heat demands such as the new food store; however, this would need to be evaluated in the context of the constraints identified at the concept design stage.</p>
Heat Pump Systems	<p>Heat pumps are generally used to provide low grade heat best suited to modern energy efficient buildings. Ground Source Heat Pumps (GSHP) utilise latent heat from the ground via horizontal loops or vertical boreholes to generate heat, or provide cooling. Ground loops can require a significant area of land and both ground loops and boreholes should be easily accessible for maintenance purposes. Ground conditions and high capital cost can also restrict the deployment of this type of system.</p> <p>The majority of new buildings within the masterplan area are located in restricted development plots which are unlikely to be suitable for this system; however there may be an opportunity at the food store given the large car park area to deploy this technology.</p> <p>Air Source Heat Pumps (ASHP) requires significantly less space and also provides low grade heat to buildings. Reversible ASHPs can also be used to provide cooling which could be suitable for the cinema, café/restaurants and retail units within the masterplan. Both Ground and Air Source Heat Pump systems will be reviewed during the concept design stage of each building.</p>

The feasibility and viability of the low carbon, renewable energy technologies identified in Table 2 will be reviewed during detailed design of each building type.

Energy Strategy Summary

The development aims to deliver low carbon new buildings which minimise energy use and carbon emissions through a combination of passive design measures, a fabric first approach to design, and active energy efficiency measures.

The Council's SPD 1 Sustainable Design and Construction requires proposals to set out the energy use and carbon emissions of new development showing a reduction in carbon emissions over the 2006 Part L Building Regulations Baseline.

The latest revision of the Building Regulations released in April 2014 requires new non-residential buildings to achieve an aggregated carbon reduction of 9% over Part L 2010. The new regulations recognise the improvement made by non-residential buildings in the 2010 regulations which resulted in an aggregated 25% reduction in carbon emissions over Part L 2006.

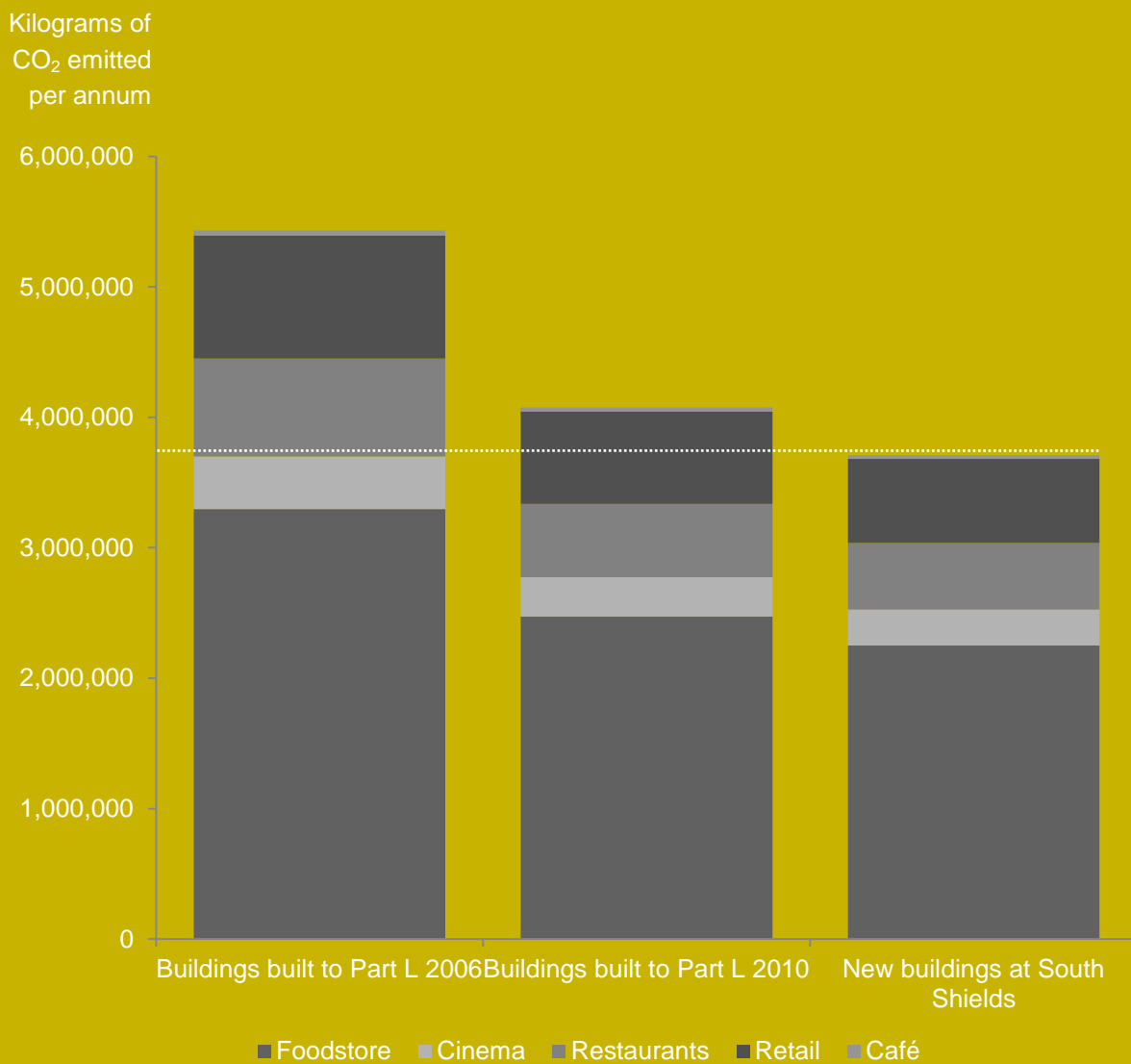
Table 3: The masterplans estimated energy use and carbon emissions

Building Type	Regulated energy use (kWh/yr)	Carbon emissions (kgCO ₂ /yr)
Food store	5,103,000	2,249,000
Cinema	875,000	276,000
Restaurants	1,620,000	511,000
Retail	2,038,000	643,000
Café	89,000	28,000
Total	9,725,000	3,707,000

A more detailed assessment of energy use and carbon emissions for individual buildings will be carried out as the final specification of fabric, services, low carbon and renewable of the buildings is confirmed.

What is the estimated carbon footprint of the Masterplan?

The graph below illustrates the estimated carbon emissions of the masterplan at the outline planning application stage compared to previous Building Regulations compliance standards.



3.2 Sustainable Construction

The masterplan is committed to supporting sustainable construction and minimising environmental impacts associated with the regeneration proposals.

The redevelopment of the Town Centre will involve the demolition of a number of existing buildings and provides opportunities for the re-use and recycling of materials.

The delivery of each phase of the masterplan will prioritise a range of sustainable construction practices including:

- *Where possible the re-use and recycling of materials from existing demolished buildings.*
- *The use of sustainable materials, for example prioritising materials in accordance with the BRE Green Guide to specification for major building elements.*
- *Monitoring of water and electricity consumption during each phase of construction and the use of measures to reduce usage where possible.*
- *Commitment to the avoidance of insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming.*
- *The use of FSC timber or equivalent in construction*
- *The selection of contractors whom are registered with the Considerate Contractors Scheme (CCS).*

Each construction phase will aim to minimise any adverse impacts on the environment, community, people and existing buildings.

3.3 Water Efficiency and Conservation

Potable water is an increasingly important natural resource and whilst the masterplan is not located in an area of water stress, the proposed development is anticipated to increase water demand putting increased pressure on water resources.

Minimising water will be targeted during both the construction and operational phases of the proposals.



Construction Water Efficiency

Future construction phases will aim to reduce water consumption through measures such as water monitoring and good practice construction techniques. This may include the capture and re-use of rainwater on-site.

Water Efficiency in Occupation

The masterplan comprises a variety of different building types which will all have different water use profiles, for example it is anticipated the restaurants and café units are likely to have higher water demand than the retail units.

To reduce water consumption during occupation, all new buildings will aim to achieve high standards of water efficiency through the inclusion of measures such as dual flush WCs, low flow fittings, water efficient appliances and sub meters to understand use in multiple occupation areas.

All buildings will aim to reduce water consumption in line with best practice and measures incorporated into the individual buildings will be confirmed at the detailed design stage of future development phases.

3.4 Sustainable Waste Management

The masterplan proposals will involve the demolition of a number of existing buildings and redevelopment to include a range of new buildings including a food store, restaurants and retail and cafes.

The reduction, reuse and recycling of construction waste will be prioritised in accordance with the waste hierarchy and supported through measures such as avoidance of over-ordering, supervision of deliveries, use of secure materials storage facilities and re-use of materials on-site where feasible.

During the demolition and construction phase of development measures to effectively manage resource will be prioritised, including:

- *Where possible the reuse and recycling of materials from the demolition of the existing site buildings.*
- *Implementation of a Construction Resource Management Plan or equivalent to minimise and manage the production of waste during demolition and construction.*
- *Where possible diversion of non-hazardous waste from landfill for recycling or reuse.*
- *Where possible the use of aggregates that have arisen from demolition or that are supplied from recycled sources.*

Individual buildings will consider a range of options to encourage sustainable waste management including:

- *Provision of segregated recycling bins in public areas.*

- *Facilities to encourage recycling during the operational phase.*

The specific operational waste measures incorporated will be detailed as part of future applications for each phase of development within the outline masterplan area.

3.5 Sustainable Transport

The proposed development is located in an existing urban area which is highly accessible by public transport. A key objective of the masterplan is to promote improved and more sustainable movement within the town centre.

A Transport Assessment (TA) and Framework Travel Plan have been produced by JTP and accompany the planning application. The aim of the Travel Plan is create a more sustainable, community driven environment for all users; and to encourage staff, residents and visitors to adopt more sustainable travel choices.

The TA has found that the proposed development will not result in any significantly adversely impacts on the existing highway network. Enhancing the local road networks is an important part of the proposed masterplan and the proposals aim to improve the town centre environment for all road users.

Walking

Walking plays a central role in the South Masterplan vision and the proposed development includes the improvement of the existing public realm making areas surrounding the development a much more attractive walking environment.

There is an extensive existing pedestrian network within the town centre linking local services, shops and restaurants. Footways provide good access to other facilities including the main public transport connections and surrounding residential areas.

Existing footway provision is considered to be good and suitable for the differing needs of pedestrians with formal and informal crossings. As part of the masterplan a number of road areas are to be reclaimed for pedestrian space

including Church Row, Chapter Row, East Street and Barrington Street. The proposals include the realignment of Barrington Street to create a continuous central street parallel to King Street and a number of existing and new pedestrian routes will be provided between the two, improving permeability across the town centre. Modifications to the current road network involve re-routing and changing the bus services are also anticipated to have a positive effect on the pedestrian environment.

The new Transport Interchange and subsequent one-way routing of buses through the town centre will reduce the dominance and severance on the Chapter Row to Keppel Street section. The centralisation of bus infrastructure in one location allows existing highways space to be handed over to pedestrians as part of an improved public realm.

Cycling

Currently there are three National Cycle Network (NCN) routes in close proximity to the site and all run to within 500metres of the proposed development and the existing sustainable transport facilities within the town centre.

The masterplan includes proposed changes to the local cycle infrastructure which aims to encourage more visitors and staff to cycle into the town centre. A 'wheel and spoke' approach with the NCN routes will be adopted by creating more suitable cycling links from the centre to the NCN routes round the town centre offering fast and direct cycling routes to a range of different destinations.

In making traffic-free cycle routes available and the town centre accessible for cyclists, the masterplan will encourage cycling into South Shields as an attractive, safe and more sustainable travel choice which fully supports the masterplan sustainability strategy.

The masterplan also includes the provision of new public realm cycle parking facilities to be constructed across the town centre. The use of high quality construction materials and standards will also contribute to improving

pedestrian areas, reducing maintenance and encouraging walking and cycling.

3.6 Health and Wellbeing

Creating a high quality, safe and secure environment that promotes health and wellbeing for visitors to the town centre is a key aim of the proposals. The masterplan aims to create a welcoming environment with new buildings, public realm landscaping and connectivity providing more coherent, easy to navigate spaces which will encourage greater and more inclusive use of the area.

The masterplan includes a number of specific measures to enhance accessibility for disabled people and families. The proposed car parks will include provision of disabled parking bays and road crossing locations will be on a raised plateau bringing the highway to the same level as the adjacent footways.

The public realm areas have been designed following extensive consultation with local accessibility groups and includes for the provision of a large number of benches to meet the varying needs of the community including disabled users and the elderly. The proposals includes renewing of the lighting provision within the public realm areas to provide appropriate illumination levels and help create a safe and secure environment for all users

The detailed design of individual buildings within the masterplan area will consider design features to support and enhance the health and wellbeing of building users including:

- *Large glazed areas promoting natural daylighting, whilst managing glare;*
- *Measures to optimise thermal comfort, without compromising energy efficiency;*
- *Use of natural and passive ventilation systems with openable windows and localised controls where possible;*
- *Consideration of buildings overheating risks and measures to design in climate change resilience;*

- *Provision of suitable and accessible cycle storage and related facilities such as lockers and changing within buildings to encouraging cycling.*

The security of building users will also be taken into account through the designing of buildings in accordance with Secured by Design principles and creating safe external access for pedestrians and cyclists.

The proposed development will provide a wide range of leisure services including cinema, restaurants and cafés benefiting the local community and will also provide significant local economic benefits which will make a positive contribution to supporting services and facilities in the wider community.

The masterplan aims to create accessible comfortable, resilient and adaptive external and internal environments that support the health and wellbeing of users and the wider community in South Shields.

3.7 Flood Risk and Sustainable Drainage

A flood risk assessment has been carried out by 3e Consulting Engineers to determine the sites risk of flooding and support the development of a surface water drainage strategy for the masterplan.

The masterplan area is located wholly within Flood Zone 1 and therefore at a low risk of flooding from rivers or the sea. The proposed development areas predominantly comprise of previously developed land including various commercial buildings, car parks and hard standing. The area therefore already has a high surface water run-off rate which currently drains into the existing combined public sewer.

The report sets out key considerations for the development of a future surface water drainage strategy for the masterplan area. The ground conditions of the development areas are expected to be unsuitable for infiltration and it is therefore considered that the most feasible

surface water discharge is via the existing combined public sewer.

The proposed development will aim to reduce the surface water run-off from new development accordance with the requirements of Northumbrian Water through the use of onsite Sustainable Drainage Systems, mitigating against a 1 in 100 year storm event including an allowance for Climate Change.

Details of site surface water drainage and SuDS techniques included in the development will be provided with future Reserved Matters applications.

3.8 Biodiversity and Pollution

Both national and local planning policy recognise the importance of conserving and enhancing the natural environment, preventing pollution and supporting biodiversity.

The proposed masterplan involves the redevelopment of a number of brownfield sites which is the most sustainable form of regeneration and development. An Ecological Assessment has been undertaken by RDF Ecology to assess the potential ecological impacts and ensure the masterplan adopts appropriate measures to safeguard the natural environment and enhance biodiversity where possible.

This assessment has confirmed that the application site does not contain any statutory or non-statutory nature conservation designations.

The only area of semi-natural vegetation within the application is the area of vegetation and neutral grassland that has developed on formerly disturbed ground at the junction of Charlotte Street and St Hilda Street. This coarse vegetation supports a limited range of common and widespread urban species and is developing naturally with invading silver birch and goat willow scrub.

The area of scrub habitat along the steep railway embankments provides locally important habitat for nesting birds given its urban location, however this area is not anticipated to be directly affected by the proposed development and the only potential effects would be limited to temporary disturbance during periods of construction.

Other public realm soft landscaping areas comprise amenity planting containing predominantly non-native ornamental shrubs with some native grasses and related species.

These existing habitats present within the Site are not considered to be of any significant ecological value.

The existing buildings within the site have been assessed to be of negligible value to roosting bats or breeding birds... Demolition works are to be completed outside of the bird nesting season where possible and where this is not practical, a suitably qualified ecologist will ensure that no nesting birds are present and suitable mitigation is adopted if needed.

New amenity planting is proposed as part of the wider landscaping scheme which will contribute to urban greening and biodiversity.

Pollution

The masterplan aims to minimise the impacts of development on the natural environment including reducing possible sources of pollution arising in construction and operation.

The South Shields town centre regeneration will support a shift to more sustainable travel modes and make a positive contribution to reducing emissions and associated atmospheric pollution from vehicles. Prioritising use of construction materials with low environmental impact from sustainable sources and re-use and recycling of materials in demolition will also contribute to avoidance of environmental pollution.

The design of each individual phase and building within the masterplan area will also aim to minimise the impacts of pollution by prioritising use of low NOx emitting heating systems, using low ozone depleting and global warming potential refrigerants and insulation materials and designing external lighting to minimise light pollution. Appropriate measures will be adopted to minimise risk of pollution to water courses during construction and once development is completed.

**Muse Developments and South
Tyneside Council** are committed
to supporting the sustainable
regeneration of **South Shields** to
provide significant, long-term
**local economic, social and
environmental benefits**

4. Conclusion

This Sustainability Statement sets out the sustainability strategy for the South Shields regeneration masterplan which supports the delivery of better connected resource efficient and low carbon development, and will deliver significant local economic and social benefits.

The masterplan involves the demolition of a number of buildings to deliver new amenities including; a food store, a cinema, restaurants, retail units, cafes and multi-storey car park, as well as associated public realm improvements.

The key sustainability measures and features of the masterplan include:

- Redevelopment of existing developed **brownfield** land as the most sustainable form of regeneration.
- Prioritising a **fabric first** approach to design and construction of new buildings to reduce energy demand and carbon emissions.
- Buildings designed to ensure cooling requirements are minimised in accordance with the **cooling hierarchy** and ensure resilience and adaptability to future climate change risks.
- Opportunities for the installation of **low carbon** and **renewable energy technologies** appropriate to the individual buildings and site specific constraints.
- Targeting an overall **reduction in carbon emissions** from new buildings above Part L 2013 of the Building Regulations.
- Measures to manage water use during construction and occupation, including the provision of **water efficient fittings** and equipment within all new buildings
- Management of waste during demolition, construction and occupation to minimise waste and **maximise reuse and recycling** in accordance with the waste hierarchy.
- Improved **connectivity** within the town centre in combination with new combined bus and metro Transport Interchange.
- Measures to encourage **sustainable travel** including improved pedestrian and cycling routes and safe and secure cycle storage.
- Improvements to the public realm creating a well-designed, **healthy environment** for visitors.
- Development located in an area with a low risk of flooding which incorporates **Sustainable Drainage Systems** to reduce the risk of surface water flooding.
- No adverse impacts on habitats or protected species and new landscaping and green infrastructure supporting **biodiversity**.
- Commitment to more sustainable construction and prioritising use of **sustainable materials** and practices adopting measures to minimise **pollution** during construction and operation.

The town centre masterplan will deliver resource efficient and sustainable new buildings creating significant long-term social, environmental and economic benefits to South Shields and its residents..

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