Doncaster
Metropolitan Borough Council

Doncaster Local Development Framework
Supplementary Planning Document

Sustainable Construction

www.doncaster.gov.uk

Information can be made available in other languages, or other formats such as Braille or Audio Tape, on request. Please ask a member of our staff for more information, or if you need any other help or advice. (They can arrange to speak to you in your own language if you need them to.)

Albanian

Sipas kërkesës Informacionet mund të ofrohen edhe në gjuhët tjera ose në formatet tjera siç janë Braille ose audio kasetë.Ju lutemi,për informata plotësuese ,nëse keni nevojë për ndihmë ose ndonjë këshillë pyetni anëtarin e stafit tonë .
(Nëse është e domosdoshme ata mund të rregullojnë që të bisedojnë me ju në gjuhën tuaj).

Arabic

تستطيع توفير المعلومات بلغات اخرى وصيغ اخرى مثل البريل (للفاقدي البصر) والشرائط الصوتية، حسب الطلب. يرجى الاستفسار من احد موظفينا للحصول على المزيد من المعلومات او للحصول على المساعدة او الارشاد. (يستطيع موظفونا توفير وسائل اخرى للتحدث معكم بلغتكم اذا احتجتم الى ذلك.)

Chinese Simplified

该资料已被翻译为其它的语言，也有诸如盲文或录音磁带的其它形式供选。请询问我们的职员以便获得进一步的资料、其它帮助或建议。(如果你有需要，他们可以安排用你自己的语言来和你交谈。)

Chinese Traditional

該資訊已經被翻譯為其他的語言，也有例如盲文或錄音磁帶的其他形式供閣下選擇。請詢問我們的員工，以便獲得進一步的資訊、其他幫助或建議。(如果閣下有需要，他們可以安排用閣下自己的語言來和你交談。)

Farsi

در صورت درخواست ، اطلاعات به زبانهای دیگر در دسترس قرار خواهد گرفت و یا به هر شکل دیگر از قبیل خط برجسته و یا صدا. جهت دریافت اطلاعات بیشتر و یا دریاف راهنمایی و کمک، لطفاً از یک کارمند سؤال کنید.(آنها میتوانند ترتیبی بدهند که در صورت لزوم با زبان خودتان با شما صحبت کنند.)

French

L'information peut être rendue disponible dans d'autres langues, ou en d'autres formats tels que braille ou bande magnétique audio, sur demande. Veuillez demander à un membre de notre personnel pour plus d'information, ou si vous avez besoin de tout autre aide ou conseil. (ils peuvent organiser de vous parler en votre propre langue si vous avez besoin qu'ils le fassent.)

Kurdish

زانیاریانه به زمانی خوتان ده ست ده که ویت، و یا به شیوه کانی دیکه، له وانه یه خه تی گه وره و یا به ده نگ. ئه گه ر پیویستت به زانیاری زورتر ، یارمه تی و یا ئاموژگاری هه یه، تکایه پرسیار یکه له یه کیک له کارمه نده کان. (ئه وان کاریکی وا ده که ن که به زمانی خوت له گه لتا قسه بکه ن.)

Punjabi

ਬੇਨਤੀ ਕਰਨ ਤੇ, ਜਾਣਕਾਰੀ ਦੂਸਰੀਆਂ ਬੋਲੀਆਂ, ਜਾਂ ਹੋਰ ਰੂਪਾਂ ਜਿਵੇਂ ਕਿ ਬਰੇਲ ਜਾਂ ਆਡੀਓ ਟੇਪ ਤੇ ਵੀ ਦਿੱਤੀ ਜਾ ਸਕਦੀ ਹੈ। ਹੋਰ ਜਾਣਕਾਰੀ ਵਾਸਤੇ, ਜਾਂ ਜੇਕਰ ਤੁਹਾਨੂੰ ਹੋਰ ਸਹਾਇਤਾ ਜਾਂ ਸਲਾਹ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਕ੍ਰਿਪਾ ਕਰਕੇ ਸਾਡੇ ਸਟਾਫ਼ ਦੇ ਕਿਸੇ ਮੈਂਬਰ ਨੂੰ ਪੁੱਛੋ। (ਜੇਕਰ ਤੁਸੀਂ ਚਾਹੁੰਦੇ ਹੋ ਤਾਂ ਉਹ ਤੁਹਾਡੇ ਨਾਲ ਤੁਹਾਡੀ ਆਪਣੀ ਬੋਲੀ ਵਿਚ ਗੱਲਬਾਤ ਕਰਨ ਦਾ ਪ੍ਰਬੰਧ ਕਰ ਸਕਦੇ ਹਨ।)

Turkish

Bilgiler istenildiğinde diğer dillerde de temin edilebilir ayrıca görme özürlülerin kullanabileceği kabartma alfabesiyle veya Teyp kaseti şeklinde de hazırlanabilir. Daha fazla bilgi için veya herhangi bir konuda yardım ve tavsiye ye ihtiyacımız varsa lütfen görevli personelden birisiyle konuşunuz. (Eğer ihtiyacımız varsa personelimiz sizinle kendi dilinizde konuşabilmek için bir tercüman ayarlayabilir).

Urdu

یہ معلومات گذارش کرنے پر دیگر زبانوں یا دیگر صورتوں، جیسا کہ، بریل (ابھری ہوئی لکھائی، نابینا اشخاص کے پڑھنے کی لکھائی) یا سی ڈی اور ٹیپ پر بھی فراہم کی جاسکتی ہیں. مزید معلومات یا اگر آپ کو کسی مدد یا مشورے کی ضرورت ہو، تو براہ مہربانی ہمارے عملہ کے ممبر سے بات کریں. (اگر آپ کو ضرورت ہو تو وہ آپ سے اپنی زبان میں بات کرانے کا انتظام کر سکتے ہیں).

Contents

1 Introduction

"Treat the Earth well. It was not given to you by your parents. It was loaned to you by your children." Kenyan Proverb

Since the first concepts of sustainability were developed in the 1970s the overall awareness about thenegative effects people are having on the environment have become much clearer. Initially, sustainability was solely concerned with the environment and the impact of atmospheric pollution from the burning of fossil fuels for energy (electricity), materials (plastics, building materials etc) and for people movement (car, aircraft etc), concerns centred around the using up of the Earth's natural resources, and the production of gases that lead to global warming by harming the ozone layer. It is generally understood that we cannot continue as we have been doing.

Over the past 10 years, this concept has changed in many ways, along with continually focused aims of the environment. It now incorporates both social and economic aims in a balanced way that can be enjoyed by all, now and in the future. Sustainability is not about zero growth. It is about altering development practices and designs to reduce the use of natural resources, developing more sustainable ways of living, and looking ahead to make sure that we consider the needs of the future in what we plan, design and build now.

In addition to this movement within planning, the government has made substantial progress by increasing Building Regulation standards in sustainable construction, relating to energy efficiency, ventilation, sound and accessibility. The standards will be increased further over the next 3 yearsuntil acceptable levels are achieved.

Doncaster Timeline

1.1 Key principles of sustainable design

Good and effective sustainable design does not happen by chance. The principles have to be integrated at the start of the design process of any development project. This supplementary planning document covers the main principles and gives examples where appropriate, by using these intentionally. Development projects will have a smaller impact on the environment and a greater benefit for all.

1.1.1 Location

It is all about location. Is the site appropriate to the proposed use, or will the proposed use create greater problems for the locality? The starting point should be the site characteristics (greenfield/ brownfield, topography, existing habitats etc.) and area characteristics (microclimate, transpor tlinks, flood risk, surrounding developments).

1.1.2 Mixed purpose

By having developments that incorporate more than one purpose (dwellings close to retail outlets or commercial developments, live / work units), this would aid in reducing any zoning that occurs within the Borough. The aim should be to place neighbour friendly land uses (uses that do not haveconflicting needs, noise, transport intensive, dust or light etc) in close proximity to reduce the needto travel.

1.1.3 Linkages

'For every action, there is an equal and opposite reaction.' Newton's third law. Actions can haveeither positive or negative reactions. There are close linkages between the design / layout of a development and energy use / materials used / location and transport requirements /construction and pollution. These known linkages (paired forces) should be used to create positive environments that bring maximum environmental, social and economic benefits.

1.1.4 Resistance

Sustainable design requires working with nature, not against it. This works by using opportunities presented by the natural cycles such as, day and night, solar, wind, changing seasons, wildlife and vegetation, or by using natural or passive systems (e.g. lighting / ventilation). There can be a desire to alter nature's patterns because it is technically possible to do so. Often this would result in the unnecessary use of resources (e.g. building on high flood risk areas and then erecting flood defences).

1.1.5 Efficient

It is better to get the same required outcome but by using less resources. With the price of some resources rising, it becomes uneconomical to use more than is required. Efficiency is a vital principle of sustainable development and best practice examples has have shown that it can bring savings, not only in economic value, but also in investment in mechanical equipment.

1.1.5 Adaptable

History has taught us that the use of a building can change many times over its lifespan. We must design buildings not only to be used today, but as far as possible, pre-empt future needs. Unless we own a crystal ball, we cannot predict future requirements. But we can build in ways that will make it easier to adapt to changing needs, and this will further increase the lifespan of buildings further.

1.1.6 Local responsibility

Good design has regard for the end users of a development and where possible involves them inthe design process (when known). By giving greater ownership to these end users of what is developed in their area and how it will perform (energy use / water use etc) and look, this can have very positive effect on fostering sustainable communities.

1.1.7 Imagination

A design in one location does not necessarily work in another. Having imagination but keeping things simple often produce the most sustainable solutions. Advanced technologies have a part to play, but complicated technical solutions can require greater resources to implement up front.

1.1.8 Long-term view

We need to realise that short-term savings can cause longer-term problems. Sustainability does nothave to be expensive to incorporate and can offer instant savings. Realising that investing more at the beginning of the process can create a greater overall return. The phrases ‘pump priming’ and ‘investing to save’ are good mottos (e.g. installing a geothermal heating / cooling system, runningcosts are cheaper than conventional methods of heating / cooling).

1.2 What is sustainability?

At present there are many definitions that surround the concept of sustainable development (sustainability). One of the clearest definitions of sustainability is the one below, published in 1987 (Brundtland Report):

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Many have been devised since but the underlying message remains the same.

1.3 Policy background

The Government has placed increasing emphasis on design and quality in its urban regeneration and development thinking. Planning Policy Guidance 1 (PPG1) was a stepping stone document that broke the mould of mediocrity that sometimes characterised the quality of new development in the past. The Government’s thinking has moved even further with their guidance through the Green Paper Sustainable Communities: Delivering through Planning (2002), that intended with theproposals for review and reform of national guidance. Also, the Government set out its strategy for building sustainable communities in Sustainable Communities: Building for the Future (2003). Planning Policy Statement 1 - Creating Sustainable Communities (PPS1), which supersedes PPG1, sets out four key policy messages surrounding the planning system:

- The local authority to take an approach based on integrating the four aims of sustainable development; economic development; social inclusion; environmental protection; and prudent use of natural resources.
- The need for positive planning to achieve sustainable development objectives and proactive management of development.

- The needs for plans to set clear visions for communities and help to integrate the wide range of activities relating to development and regeneration.
- The need for the planning system to be transparent, accessible and accountable, and to actively promote participation and involvement.

1.4 The purpose of the guidance

Doncaster Council is committed to working with neighbouring councils, statutory bodies, developers, architects and designers from many disciplines, planning agents, property owners and the public, in aiding a continual improvement of our urban and rural developments. Development that is designed so that the carbon footprint is as low as functionally possible, which enhances the local setting of the proposed development and helps to facilitate and promote communities that are inclusive and economically sustainable. Therefore the purpose of this document is to:

- Provide supplemantary detail in relation to policies within the Doncaster Unitary Development Plan (adopted 1998). The policies quoted are detailed towards the end of this document.
- Provide clearer guidance to developers over the concepts of sustainable development and how this underpins the planning process through Planning Policy Statement 1 (PPS1).
- Provide further guidance of the emerging Planning Policy Statements adopted to date (PPS1, PPS3, PPS7, PPS9, PPS10, PPS22 and PPS25).
- Introduce the concept that development has a Carbon Footprint and how direct or indirect carbon emissions can be reduced.
- Highlight options and potential consequences of not integrating sustainable construction techniques.

1.5 How to use this document

Section 10 of PPS 12 : Creating Local Development Frameworks, a companion guide expresses that; supplementary planning documents whilst not having development plan status,supplementary planning documents will exist within the local development framework. They can be used to expand policy or provide further detail to policies in development plan documents.

They are material considerations in deciding the outcome of planning applications; therefore all development will have to show that regard has been given to the SPD and the associated checklist and to sustainability in the design and development of proposals.

1.6 What type of development do the guidelines address?

All developments will be considered in the context of sustainable development. However formajor developments, defined as:

- 10 or more dwellings, or a site of 0.5 hectares or more where the number of dwellings is not shown.
- Other developments where the floor space to be built is 1,000 square metres (gross) or more, where the site area is 1 hectare or more in size.

Developers will be asked to complete the major planning application checklist to assess what documents would be required before submission. One vital document for the purpose of sustainable development would be the Sustainability Appraisal, setting out key sustainable development issues relevant to the development, and describe how they have complied with the guidelines. They should also complete and submit the Sustainable Development Checklist that accompanies this guidance. The Council will use the checklist to assess the development.

It should be noted that the purpose of the checklist is not to establish a “pass or fail” score for the development. Rather it is intended to facilitate in identifying the strengths and weaknesses of schemes and areas for potential improvement. In developing proposals and completing the supporting documentation applicants may wish to give consideration to the various schemes which exist and are being developed. For example, the recent green paper “Homes for the Future: More Affordable, More Sustainable” and its companion documents.

It is therefore in the developer’s interest to contact the Council’s planning department at the earliest opportunity to discuss how the development will meet the requirements of this guidance.

Applications for major developments will not be validated and registered unless the two checklistsmentioned above have been completed to the Council’s satisfaction.

2 Broad over-riding principles

2.1 Development location

Checklist Ref: 2.1 a, b, c, d, e, f

One of the key principles of sustainable development is to integrate proposed land use and transport routes and to balance the demands of the public and private sector on to land and existing buildings. The practice of bringing previously developed land and buildings back into productive use is a sustainable way of using existing resources, and subsequently this aids in the regeneration of run-down areas. By focusing development on brownfield sites and developments that are travel-intense, generators can be placed in close proximity to transport links. By shaping patterns of development we can help in reducing the need to travel, reduce length of journeys (time and distance) and make it easier and safer to access jobs, shopping, leisure facilities and services by more sustainable modes of transport such as public transport, cycling or walking. The aim of anynew development should, therefore, be to reduce the need to travel by private transport (car) andto maximise the use of the sustainable modes of transport mentioned above.

The recycling of previously developed land and / or buildings would be preferred to using up undeveloped greenfield sites. In most cases this option has greater environmental benefits. With imagination and careful design, older buildings can be re-used successfully for a wide range of uses and functions. Proposals that meet this principle will be looked at favourably subject to its location.

A key aspect of good design allows connectivity between places. Good developments would give priority to sustainable transport methods and integrate movement patterns through a given area. This implies access to facilities, services, goods and other people, in ways that makes less use ofthe car and minimise impact on the environment. Pedestrians and cyclists can be given priority overcars by either restricting or controlling traffic movement through sites.

To give a clearer understanding of the Council's commitment to sustainable development in relation to transport issues and land use, the need to travel has been given an order of priority:

- Avoid the need to travel - teleconferencing, home working
- Locating / Situating work locations closer to where people live - live / work units
- Locating travel intense uses at the most accessible locations - bus / rail stations and town centres
- Locating community facilities close to where people live
- Provision of a healthy travel plan

2.2 Mixed-use developments

Checklist Ref: 3.1 d, h

Sustainability is about creating communities that are not too rigidly zoned i.e. different activities are not totally separated. By having jobs, shopping, leisure facilities and residential development in close proximity to each other creates more activity (particularly in town centres and around transport interchanges and aids to further reduce the need to travel by car. With regard to residential developments, developers are encouraged to provide a mix of tenure, type and size of homes. This allows residents to change tenure within a local area and reduce the need to move from the locality, or allows people to live within close proximity to work, leisure or community facilities.

2.3 Economic and social considerations

Checklist Ref: 3.1 b, e, g, l, j, k, l3.2m, n, p, q, r

Developing strong, vibrant and sustainable communities that are socially inclusive cannot be achieved by regenerating the built environment alone. Social inclusion implies access to good food, water, housing, employment, energy and fuel at reasonable costs and makes opportunities for culture, leisure and recreation readily available to all. Well-designed places make a contribution towards producing places where people feel safe and secure; where crime and disorder, or the fearof crime, does not undermine community cohesion or people's quality of life.

Ensuring that economic prosperity is shared equally across all sections of society is a key objective of sustainable development. It is essential for a healthy economy that adequate employment land for the creation of new jobs is assured. To ensure that jobs are created in a wide range of sectors (industry, leisure, business as well as retail) then land for uses such as warehousing and industry is protected from higher value uses (retail). By creation of the right environment, the economy andemployment opportunities will flourish and help to reduce social exclusion.

If a locality has a lack of skills and / or training, this would reduce chances of gaining employment. Partnership approaches between developers, local learning centres and employment services should be considered as part of the development. Favourable consideration will also be given to proposals which recruit local labour, provide funding for training programmes or assist local supply chains. This is particularly the case for schemes that will contribute to the local construction industry, as there is a construction skills shortage.

2.4 Community involvement

Checklist Ref: 3.1 f3.2 o

Within any locality, the 'community' will be made up of many different interest groups with a wide variety of agendas, for example, religious, social and political. Some of these will be well established and represented, but some will be less equipped to engage with the process. Sustainable development should provide opportunities for the local community to become involved in developing a vision for their neighbourhoods.

Developers should also take the lead on getting local people involved in the formation of their proposal and should therefore refer to the Doncaster Statement of Community Involvement. Early and effective engagement with the community can aid in minimising potential conflict and help produce better outcomes for all stakeholders.

3 Sustainable Design

Although up-front building and design costs may represent only a fraction of the building's life cycle costs, when just 1 percent of the project's upfront costs are spent, up to 70% of its life cycle costs may already be committed. When 7% of project costs are spent, up to 85% of life cycle costs have been committed.

More for Less, Design Council 1997

Quality in the built environment is not a result of applying rules and standards, but of creative design appropriate to the distinctiveness of individual sites. A high quality design on one site may be wholly inappropriate on another. Design is a fundamental consideration in terms of sustainable development. This requires using the built and natural environmental elements of a site to create areas with a strong 'sense of place' and which reinforce and relate to their surroundings. Design has many inter-relating functions that are covered throughout this SPD; site characteristics,energy reduction and efficiency, resource conservation, transport, people and crime reduction.

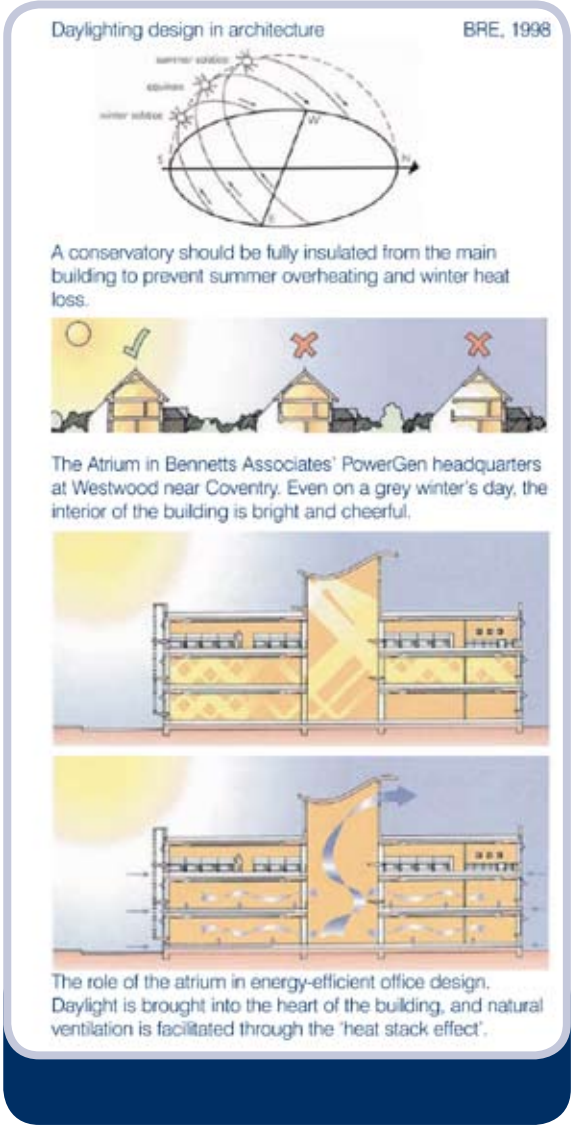
3.1 Site Characteristics

Site layout planning and careful design can have a significant effect on local environmental conditions and will be influenced by the following factors:

3.2 The Solar Path

We are moving away from the carbon age and towards the solar age, therefore assessing a site's solar availability has become an important issue. Even though the sun's path changes from day to day, the position of the sun at any time on any given day of the year can be entirely predicted. There are a number of design tools that can be used for this purpose and developers should source this information at the earliest stages of site layout design. To assess the passive design principles incorporated into the proposed development, Doncaster Council may request solar path information to gauge:

- Development's solar availability (solar gain / solar shading)
- Shading from adjacent buildings
- Shading from vegetation



3.3 Temperature

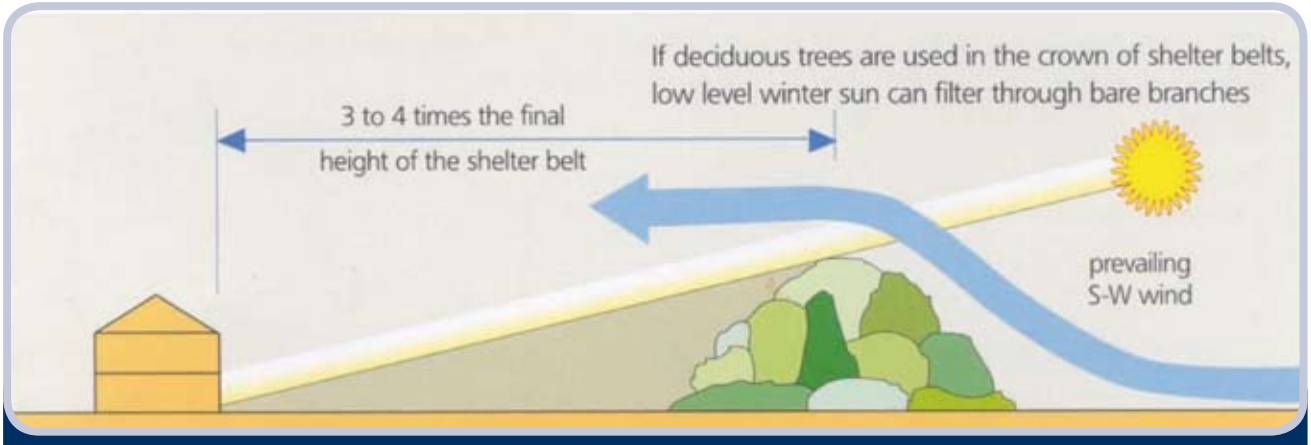
Air temperature in a densely built urban area will always be higher than in a rural area - a phenomenon known as ‘heat island’. In hot climates this phenomenon is a disadvantage, but in more temperate climates, such as in Doncaster, this can be an advantage by reducing heating demands. Developments may have to take account of microclimatic changes between urban and rural locations.

3.4 Wind Speeds

Wind speed should be given adequate thought in the orientation of buildings. It is important that wind tunnels are not created where it is the predominant path for people movement through a site. Reducing wind speeds and providing shelter will contribute to lower heating demands, but in thesummer air movement can play an important part in cooling strategies, particularly for commercial and public buildings. Key considerations regarding wind speed include:

- Sheltering from cold northerly or prevailing winds
- Using higher density building, such as terraced housing or taller buildings sited at the north, to provide protection for the rest of the site
- Avoiding long uninterrupted road passages that may channel wind
- Arranging buildings in an irregular street pattern to avoid channelling of wind
- Minimising overshadowing

Distance of houses from shelter belts



Source: Passive solar estate layout, Energy Saving Trust 1997

3.5 Flood Risk

Checklist Ref: 1.1 e, f

Flooding from rivers and coastal waters is a natural process that plays an important role in shaping the natural environment. However, flooding threatens life and causes substantial damage toproperty and can have devastating social and economic impacts. The effects of weather events can be increased in severity both as a consequence of previous decisions on developments (location, design and nature), and as a consequence of future climate change.

Climate change over the next few decades is likely to mean milder wetter winters and hotter drier summers; this in addition as sea levels will continue to rise. These factors will lead to increased and new risks of flooding within the lifetime of the development.

PPS25 - Planning and Flood Risk explains the risk based approach to be adopted at all levels of planning and to apply the Source - Pathway - Receptor model for development in areas of flood risk.

Individual applications will be determined in accordance with,:

- Up to date national, regional and local planning policy.
- In particular, applicants are advised to refer to PPS25 in relation to the Sequential and Exceptions Tests.
- Priority should be given to the use of Sustainable Drainage Systems (see section 5.4)

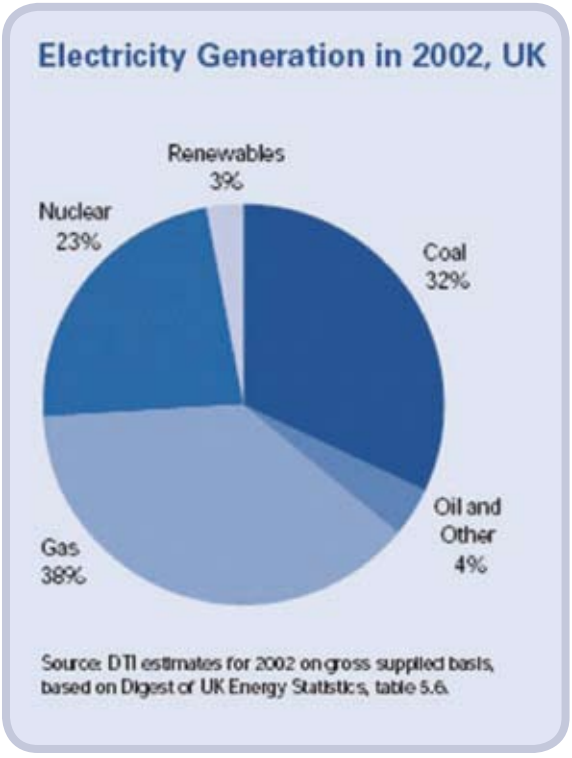
Doncaster has large areas that are designated as flood risk. To ensure that development will be acceptable, checking to see if the land is allocated within a flood zone will be imperative. Details of when and how to submit a flood risk assessment can be found on the Environment Agency website.

4 Energy

The Big Picture

Energy used in buildings accounts for nearly 50% of carbon dioxide emissions in the UK. Energy isused to provide building services such as heating, cooling, hot water, lighting and appliances.Therefore the amount of carbon dioxide produced is dependent on the building's energy requirements, how efficient this energy is used and where the energy is sourced. The Building Regulations specify minimum standards of compliance, but it may be desirable to surpass these standards where feasible.

The aim of designing an energy-efficient building is to produce a building that uses the minimum amount of energy to provide the intended function. Many brownfield sites have redundant buildings present; the refurbishment and conversion of these can provide an ideal opportunity to improve energy efficiency.
In addition, the reuse of buildings has the added benefit of maximising the use of energy embodied in existing resources and can contribute to the regeneration of areas.



Within the Government's recently published Energy White Paper, it is expressed that a stepped change is required to achieve the target of 60 per cent reduction in Carbon Dioxide emissions by 2050. The UK is committed to deliver 10 per cent of our electricity by 2010 and has aspired to achieve a supply of 20 per cent of electricity by 2020 that will put the UK on a path for achieving the 2050 target. Doncaster will be looking to achieve this reduction through a combination of strategies that is outlined in the list below:

- Reducing the demand for energy
- Using energy more efficiently
- Using renewable energy
- Clean and efficient use of fossil fuels for heating and electricity generation

4.1 Reducing Energy Demand

4.1.1 Passive Solar Design (PSD)

Passive Solar Design offers a significant one-off opportunity to reduce lifetime energy requirements at little or no cost. Passive solar design can offer considerable savings for occupiers by keeping fuel bills to a minimum, as well as the environmental benefits of reduced demand for conventional energy (lighting, heating or cooling). In addition, it can maximise the potential for other forms of renewable energy such as solar power generation, by promoting layouts that maximise the extent of south-facing roof areas. Passive Solar Design can be broken down into a number of smaller categories, this would include:

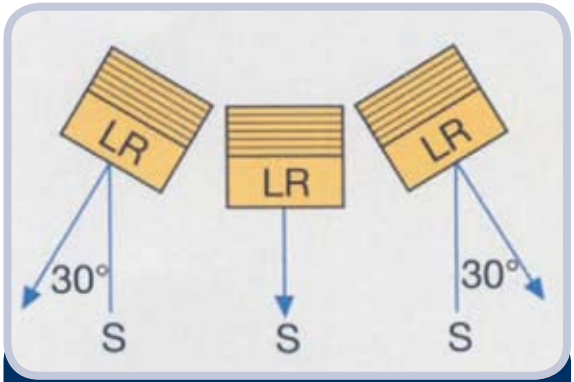
- Solar gain for heating
- Reduce summer heat gain by solar shading
- Maximise insulation value through building materials
- Maximise natural light and ventilation

Studies of houses in Milton Keynes have shown that low cost passive solar measures reduced heating bills by 40%, where saving paid back the costs within 2 years.

4.1.2 Solar Gain

Checklist Ref: 4.1 a, b, c, f

Housing Orientation



Source: BRE 1997

This should be a major consideration as it can make a significant contribution to the heating of a building for winter. To maximise solar gain and take advantage of the free energy available from the sun, there are a number of principles that should be followed.

- Orientate buildings within 30º of due south
- Increased glazing on the south-facing walls and reduce glazing on the north
- Main rooms that have the highest occupancy should be located on the south side of the building
- The north side of the building should be taken up with rooms with lower occupancy such as toilets, cloakrooms and storage space.
- Kitchen space can be situated to the north of building to avoid overheating
- Glazed sunspaces such as atriums or conservatories can be used to regulate heat around the building. These spaces should be thermal insulated and unheated, otherwise increased energy use would occur
- Main roads of a site should run from East to West

4.1.3 Solar Shading

Checklist Ref: 4.1d, f

Minimising overshadowing

Source: BRE 1997

Brise Soleil Quay Point

Not just because of solar gain techniques, but also due to aesthetic reasons, modern buildings have increased the amount of glazed areas. In summer months when the sun is at its highest intensity, internal conditions can decline. With the increased glare on computer screens and with temperature soaring, this will have negative effects on staff concentration and productivity.

Both will be declining (acceptable internal temperatures stated in studies by CIBSE as between 19 - 23°C, but best 19 - 21°C). The common solution to internal heating problems have been to fit air-conditioning units; inevitably these lead to larger electric bills and higher carbon dioxide emissions.

If care is taken at the design stage then overheating can be minimised. There are a number of simple, cost effective passive systems available that will take the intensity and glare out of summer solar gain, these include:

- Overhanging roofs
- Brise-soleil
- Shutters
- Internal blinds

Source: Solar shading, Mere

A supplementary method that would be acceptable as a system of solar shading would be the planting of deciduous trees or bushes to the south of the building. During the summer, the leaves on these trees block out a large proportion of the sunshine and unneeded heat. These trees lose their leaves in the winter, allowing an increase in solar gain during the colder days. The additional benefits of using a vegetation layer would be in aiding both the biodiversity and landscape value of any given site.

Developers should take account of the sun's path (all seasons) and provide improved methods of shading the internals of buildings. It would also be beneficial to planning officers to include this information on the proposed development's plans.

In master planning housing developments, developers should take account of the principles explained in the document Passive Solar Estate Layout from Energy Saving trust. For a case study explanation, then Passive Solar House Design, also from Energy Saving Trust, should be obtained.

4.1.4 Insulation

Checklist Ref: 4.1 e, f

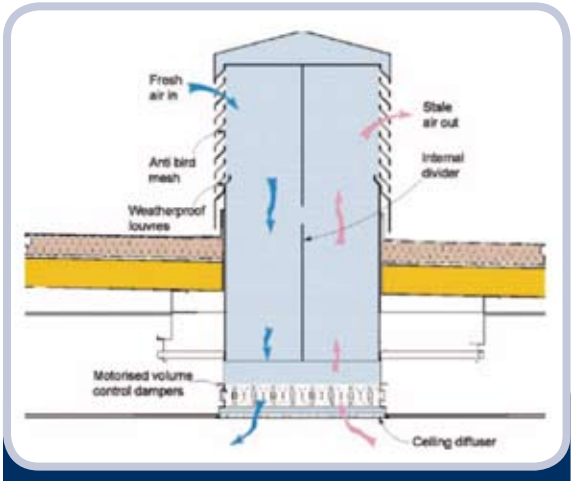
To maximise energy efficiency of any building, heat losses from a building have to be kept to a minimum. Insulation is generally integrated into walls, roof space and floors of new buildings, and with current methods this can be relatively inexpensive. Insulation can also be improved through the joining of units to increase thermal massing; this will reduce heat loss from the amount of exposed walls. To reduce heat loss from windows, double-glazing or even triple-glazing should be a consideration

The conversion and refurbishment of buildings or properties provides an ideal opportunity to improve energy efficiency; generally this would be to the roof and walls. Re-glazing also allows energy savings to be made. Special consideration would have to be given to listed buildings or within conservation areas. The use of UPVC (plastic) windows would not be appropriate, and English Heritage for example, can provide advice in the use of effective alternatives to UPVC.

4.1.5 Natural Ventilation

Checklist Ref: 4.2 g, h, l, j

This is the method of controlling the flow andtemperature of air through a building without mechanical assistance. In fact, almost all historic buildings were ventilated naturally, with the additionof partition walls and the introduction of mechanical systems, many of these have been compromised. With an increase in energy costs and awareness of the environmental impacts of energy use, natural ventilation has become an increasingly attractive method for reducing energy use and cost, and fo rproviding acceptable indoor air quality, thus maintaining a healthier climate.



Source: Monodraught windcatcher

Natural ventilation can be as simple as allocating windows that can be opened, but for developments that require greater air movement, other methods would need to be sourced. Natural ventilation systems rely on pressure differences to move fresh air through buildings. Pressure differences can be caused by wind or the buoyancy effect created by temperature differences or differences in humidity. In all cases developers would be required to assess their ventilation needs: to take into account local climate conditions and prevailing wind direction before decisions can be taken on how ventilation for a building would be addressed.

Commonly used methods of natural ventilation have involved the passive stack effect or vertical balanced flues that take advantage of pressure differentials to bring in cool fresh air from the outside, through the building, without the need of mechanical assistance. The use of heat recovery systems would reduce energy use, make a natural ventilation system more efficient and maintain internal heat in winter months.

King Avenue School Source: Monodraught

Research carried out by The Natvent Group on natural ventilation found:

Environmental Gains

- Significant reduction in CO2 emissions
- Avoids use of ozone depleting substances

Social gains

- 90 percent of occupants prefer naturally ventilated buildings
- Fewer incidents of sick building syndrome

Economic gains

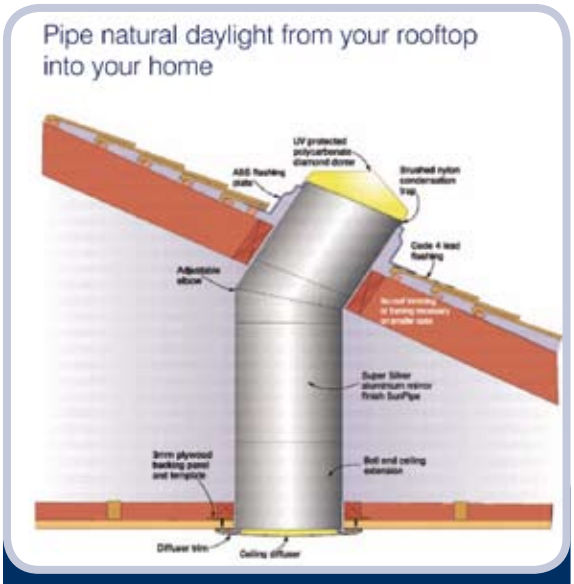
- 15 percent lower capital costs
- 75 percent lower maintenance costs
- 50 percent less energy consumed than with equivalent air conditioning system
- Less space required for plant rooms

4.1.6 Natural Daylighting

Checklist Ref: 4.2 k, l

Daylighting is the controlled entry of natural light into a building or dwelling by various means, the most obvious methods being windows and skylights. A well-designed daylighting system would allow sufficient light in, distributed evenly without glare and avoiding overheating.
In producing such a system it would be advisable to consult with an architect or light designer who would be experienced in producing daylighting systems.

Daylighting offers building or dwelling occupants greater connectivity to the outdoors - natural light and views evoke positive psychological and physiological responses.There are two distinct advantages for increasing natural daylight into buildings. Firstly, in the reduction of overall energy consumption, electricity bills can be cut by 10 - 30%. Secondly, studies into workforce productivity comes to the conclusion that daylighting can boost performance of occupants by 15 - 20%.



Pipe natural daylight from your rooftop into your home
Source: Monodraught, Sunpipe

New tiled diamond

4.1.7 Materials

Checklist Ref: 4.5 a, b, c, d, e, f, g, h, i, j, k, l

The manufacture of many conventional construction materials involves the use of highly toxic chemicals, and may result in significant atmospheric pollution and toxic waste. In addition, their ultimate disposal through incineration or landfill can result in further atmospheric pollution, or the leaching of toxins into the ground. Where possible, materials that use harmful chemicals during their manufacture or disposal should be avoided. Ideally, materials should be re-usable, recyclable or biodegradable. Consideration should also be given to the transport impacts associated with moving materials over significant distances.

Natural Materials

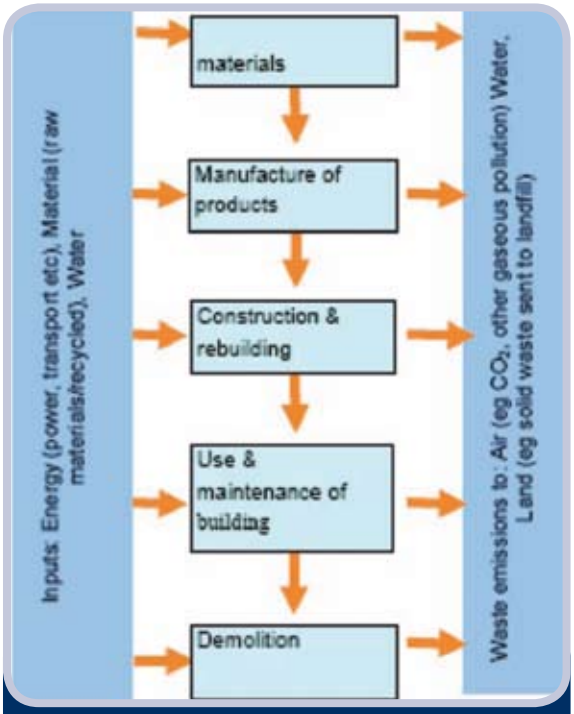
Choosing natural materials (timber) can result in several performance benefits over more conventional materials. For example, the moisture-absorbing properties of many natural insulating materials can help regulate the indoor climate.

Using natural insulation material, natural paints, and natural flooring help to improve indoor air quality. Condensation can be reduced, and the anti-static nature of natural paints can reduce the build-up of dust. The emission of unpleasant chemical fumes, referred to as off gassing, from synthetic floor coverings and adhesives, would be minimised.

Recycled Content of Materials

By definition, recycled content is ‘the proportion, by mass, of recycled material in a product or packaging’ (ISO 14021).

Increasing the recycled content of building materials achieves two things. It diverts waste from landfill, generating a market for materials that would otherwise cost money and land to dispose of. It also displaces the need for new materials.



Embodied impact of a building

In 2004, the Government's Sustainable BuildingTask Group specified a minimum percentage by value (at least 10%) of re-used and recycled materials in building projects, and even from 1999 the Governments key aim for sustainable development is to be more prudent with the use of natural resources. Case studies have proven that it is fairly easy to achieve recycled content within the construction materials of around ten percent without any cost penalty. Further studies by WRAP (Waste and Resource Action Programme) have shown this can be increased to between 15 and 20 percent, without increasingc ost or compromising material performance.

Developers should be more prudent with the use of natural resources (PPS1) and explore the cost-neutral opportunity of raising the environmental quality of any given development. A toolkit produced by WRAP can show the percentage of recycled content in any new building. The toolkit also identifies the ten largest opportunities to increase the overall use of recycled material in any given building.

Through the submission of the materials schedule that will require approval before onsite construction can start, Doncaster Council will require all materials used in construction of a development to specify their recycled content. Developments should aim to achieve a ten percent minimum.

Contact details for WRAP are at the back of this document.

Embodied impact of a building

Re-use of building materials

The re-use of waste building materials (including reclaimed top soil) their existing state without downgrading or reprocessing is the most environmental option for supplying construction projects. This increasing resource is coming from demolition sites or being dismantled from temporary works, and the potential for using these materials should be considered.

The following table shows the maximum haulage distances it is worth moving a reclaimed material before the environmental advantage is lost.

Maximum transport distances before reclaimed materials to have environmental benefits over new

Material	Distance (miles)
Tiles	100
Slate	300
Bricks	250
Aggregates	150
Timber	1000
Steel Products	2500
Aluminium products	7500

Source - BRE Green Guide to specification

The aim of using recycled, reclaimed or natural products is to reduce the embodied energy within the construction or demolition process.

4.2 Energy Efficiency

Checklist Ref: 4.3 m

Once a development has incorporated systems that reduce the demand for energy, further savings can be made through the use of energy efficient appliances and people's behaviour within any given development.

Efficient appliances

Checklist Ref: 4.3 o, q, r

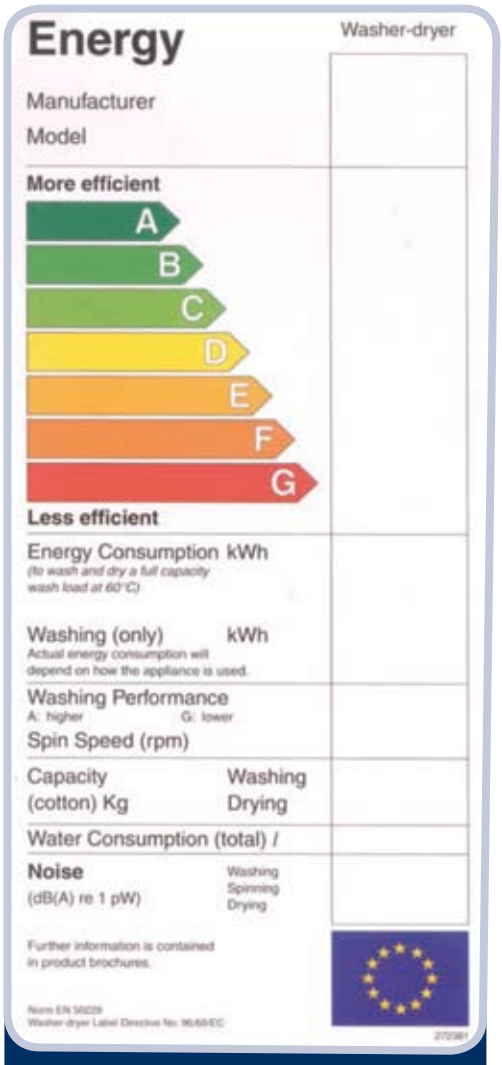
Appliances within a building are used to provide heat, lighting, ventilation and other essential services for it to function. The use of energy efficient appliances can make further reductions on a building demand for electricity, which directly aids in reducing running costs for tenant or owner.

Buildings used for domestic purposes should as far as possible use the most energy efficient appliances; for any owner or tenant this would be dependent on cost. Domestic properties are urged to use, in particular:

- Energy efficient light bulbs (reduce electric bills thus saving money).
- Energy and water efficient white goods.

The European Union energy label classifies the energyrating of goods from A (most efficient) to G (most inefficient). Guidance from the Energy Saving Trust highlights A and B appliances as energy efficient, therefore these should be sourced and used. In non-domestic buildings the opportunities for energy efficiency can be even greater. Developers should ensure that the following examples are incorporated and, as this is not an exhaustive list, other methods should be sourced and implemented:

- Energy-efficient lighting can save money in both running costs and maintenance
- Energy-efficient boilers for heating and hot water demands
- Light and ventilation can be provided naturally (see reducing energy demand) or if this is not possible an energy efficient ventilation and/ or lighting system can be used
- In large buildings a Building Energy Management System (BEMS) would be beneficial



Embodied impact of a building

Energy Ratings

Checklist Ref: 4.3 n

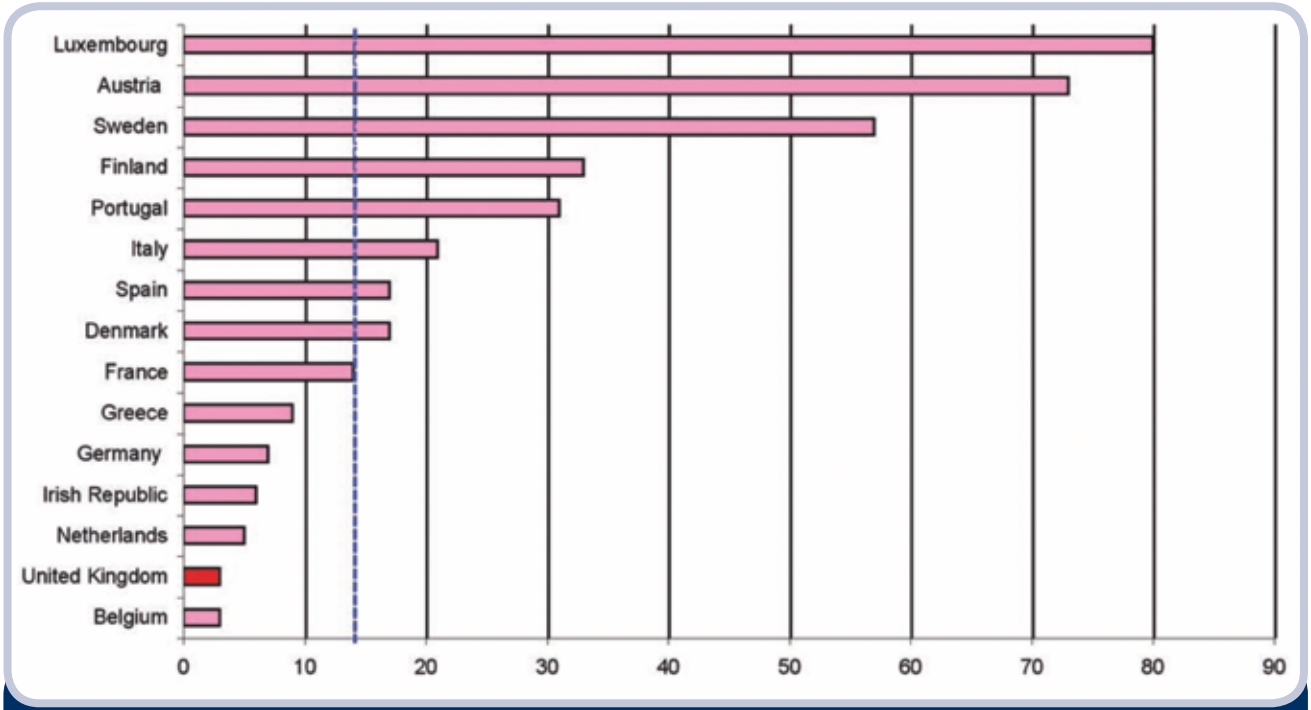
To gauge how efficient a dwelling is, there are two main energy ratings available within the UK. Standard Assessment Procedure (SAP), which is the government's recommended system, and the National Home Energy Rating (NHER). Contact details can be found at the rear of this document.

4.3 Renewable Energy

Checklist Ref: 4.4 s, t, u, v

The Big Picture

Proportion of Electricity produced by renewable sources (biomass, geothermal, hydro and wind power) EU comparison, 2000



Source: Eurostat

Renewable energy is so-called because it relies on natural energy flows and sources in the environment, which, since they are continually replenished, will never run out. At present, renewable energy currently contributes just 3 percent of the UK's energy needs, mostly from hydroelectric power. Unlike traditional energy sources, renewable technologies do not produce (or significantly less) carbon dioxide, so they provide a sustainable alternative to fossil fuels.

The UK Government published the Energy White Paper Our Energy Future -creating a low carbon economy, in 2003. This paper highlighted three major energy challenges that face the UK:

- Climate change - caused mainly by the burning of fossil fuels globally
- UK dependency on fuel and energy imports - by 2020 about 75% of UK energy may be from imported sources, making the UK vulnerable to world markets and events
- Ageing energy infrastructure - many existing conventional and nuclear power stations need massive investment, replacement or closure by 2020
- Reduce reliance on National Energy producers
- Reduce predicted reliance on overseas energy production
- Avoid price fluctuations
- Local production of energy
- Local job creation
- Less pollution

With an aging power infrastructure, unpredictable power supply for the future and the rising costs of energy ($ per barrel of oil - 65 (12/08/05), 72 (19/04/06), 63 (31/05/07)), therefore there are anumber of advantages of incorporating renewable technologies within developments.

As set out in national policy (PPS22) the incorporation of on-site renewable energy generation is an integral part of sustainable construction. All major developments will be expected to demonstrate how opportunities for the integration of on-site renewable energy generation into the proposal have been explored and incorporated. Doncaster Council will require a minimum of 10% of the energy to be used in major developments to come from on-site Renewable Energy Sources. From January 2018 this will rise to a minimum of 30%.

Doncaster Council will require an energy strategy for all major developments; the strategy will require the explanation of:

- A breakdown of all functions within the development that require energy and how much for each function (split into gas & electricity)
- Overall predicted energy use for the development (split into gas and electricity)
- How the development has reduced its energy requirements
- Which renewable energy technologies investigated and possibly discounted
- Which renewable energy technologies incorporated
- The percentage of energy supplied by on-site renewable energy technologies

Many studies of renewable energy building costs have been commissioned to ensure there is no undue burden to the developer. Examples show that across the full range of types of development,10% on-site renewable energy supply can be readily achieved at less than 5% of building costs. Developers could benefit from financial support in the form of capital grants from the DTI's Low Carbon Building Programme for on-site renewable energy production; contact details at the rear of the document. Additionally, Renewable Obligation Certificates should be looked into (currently anannual ROC credit of approx 1MW of electricity per annum is worth £56); these are to be increased from 10% to15% by 2010.

4.3.1 Active Solar Energy

Active solar technology can be divided into two categories: Photovoltaic (PV) and Solar Water Heating (SWH). The technologies can appear similar as both usually use roof-mounted equipment to collect radiation from the sun and convert it to a useful form of energy: Electricity in the case of PV and hot water in the case of solar water heaters. Both systems have their advantages and Doncaster Council will promote the inclusion of these systems within new developments or retrofitting them onto existing developments. Solar PV is unique among renewable energy technologies in that in addition to generating electricity from daylight, it can also be used as a building material in its own right. PV can either be roof-mounted or free-standing in modular form, or integrated into the roof or facades of buildings through the use of solar shingles, solar slates, solar glass laminates and other solar building design solutions.

For both systems Government grants are currently available (about 50% of purchase cost) to developers, homeowners and the public sector.

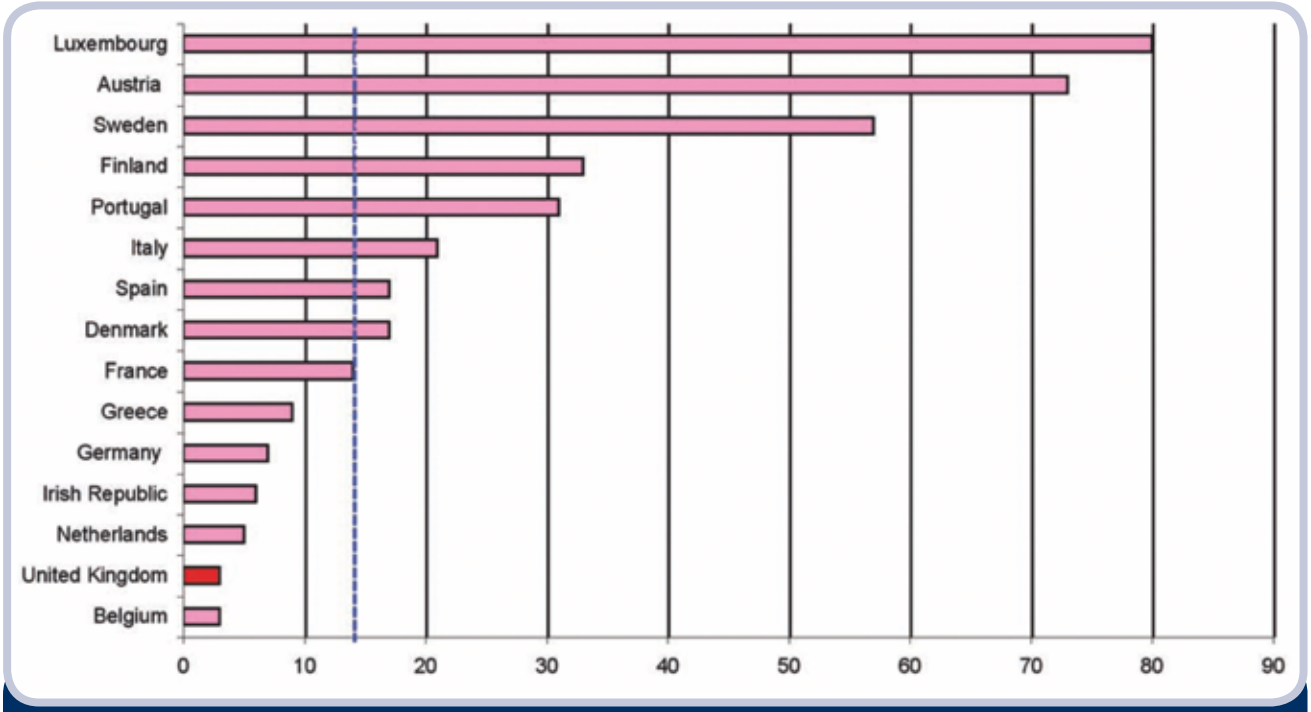
4.3.2 Photovoltaic (PV)

The PV solar panel is typically 0.5 to 1m, having a peak output of 70 to 160 watts. In commercial installations a number of modules are usually connected together in an array to produce the required output; this can vary from a few square metres to several hundred metres. A typical array on a domestic dwelling would have an area of 9 to 18m2, and would produce 1 to 2 kW peak output.

In all installations the electricity generated can be used straight away, stored for future use, or exported back into the National Grid. Some energy suppliers will buy electricity from this source at the same price that you would purchase electricity when your system is not producing enough.

There are many advantages of a PV system being installed, as more and more businesses and private dwellings choose PV for reasons other than cost, because:

- It is a clean sustainable energy source
- It generates power at the source, with no fuel, noise or moving parts
- It is a clean back-up power source, and
- It can be built into roofs, facades, canopies and windows



PV system at the Quadrant Business Centre, Sheffield

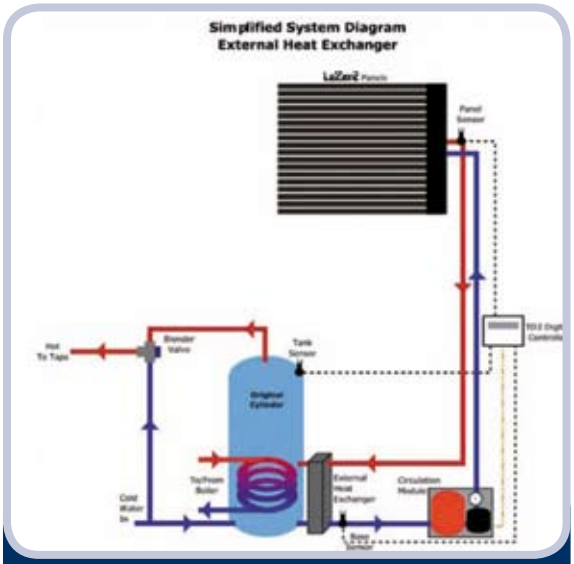
The average UK home could generate most of the power needed to supply its energy - providing it is used efficiently and the home has enough south-facing roofs. www.saveenergy.co.uk

4.3.4 Solar Water Heating Systems

External Heat Exchanger

Solar thermal systems use energy from the sun to pre-heat water. There is a common misconception that solar water heating is ineffective in England for climatic reasons. Whilst it is clearly not as effective in England as it could be in Spain for instance, a good modern system will make a significant contribution to water heating requirements. The domestic sector is an obvious priority - a well-designed system should provide 50 - 60% of annual domestic hot water requirements, with most of this energy capture being between May and September.

The key component in a solar water heating system is the collector. Two main types are common in the UK: flat plate collectors and evacuated tube collectors. In both types, radiation from the sun is collected by an absorber, and is transferred as heat to a fluid, which may be either water, or a special fluid employed to convey the energy to the domestic system using a heat exchanger.



Source: Monodraught, Sunpipe

Many large commercial buildings can use solar collectors to provide more than just hot water. Solar process heating systems can be used to heat these buildings. A solar ventilation system can be used in cold climates to pre-heat air as it enters a building and it can also be used to cool air for a building.

Solar water heater Source: Solar UK

Siting issues

For both active solar energy systems, the best performance will require the collectors to be inclined at an angle of 20- 40 degrees, depending on the latitude, and orientated facing due south. In practical terms, this is not always possible on existing buildings, and some degree of flexibility in inclination and orientation is acceptable, although this will be at the expense of best performance. To function satisfactorily, collectors can be inclined at between 10 and 60 degrees and orientated facing from east to west (i.e. within 90 degrees of due south).

Urban areas could benefit most significantly from this power source; with the amount of roof space available, projects can be undertaken without disrupting the visual amenity of any given area.

Doncaster's Energy Efficiency Advice Centre aid in the running of the Simply Solar scheme; this grants financial aid to residential developments for the installation of solar hot water heating systems.

4.3.5 Ground Water Heat Pumps

Ground water heat pumps (or ground source heat pumps) are already widely used over areas of Europe and North America. The technology makes use of the Earth's ability to absorb and store solar energy, resulting in an almost constant temperature of 10-12ºC a couple of meters below the surface. This low-grade heat source is tapped by collecting pipes in a closed loop, where liquid (mainly water) contained within the pipes extracts the stored energy and then can be used for underfloor heating or to pre-heat water before being used through boiler or radiator systems.

A system that would supply 50% of the space and water heating demand of a typical house would need 80 - 100m of collecting piping, and for commercial buildings this can reach thousands of metres. Different space configurations of piping are possible depending on the availability of land, soil conditions, and evacuation costs:

- Horizontal collectors require a relatively large area of land free from hard rock. They are most appropriate for small installations, and particularly new build. The pipes are buried in trenches 1-2m deep, minimum distances would need to be maintained between pipes to allow for good thermal exchange.
- Vertical collectors are used when land is limited and are suitable for most soil and rock types. Vertical borehole heat exchangers will have a typical diameter of 0.1 - 0.2m and be between 15m and 180m deep.

The majority of Britain's homes could be heated from heat collecting pipework buried in their gardens. National Energy Foundation

4.3.6 Wind Power

Source: Renewable Devises Swift Turbine Ltd

Traditionally, wind turbines have been installed in non-urban areas with a strong trend towards large offshore wind farms. It is being increasingly recognised that smaller devices installed at the point of use, i.e. urban settings, can play an important role in reducing carbon emissions and energy production.

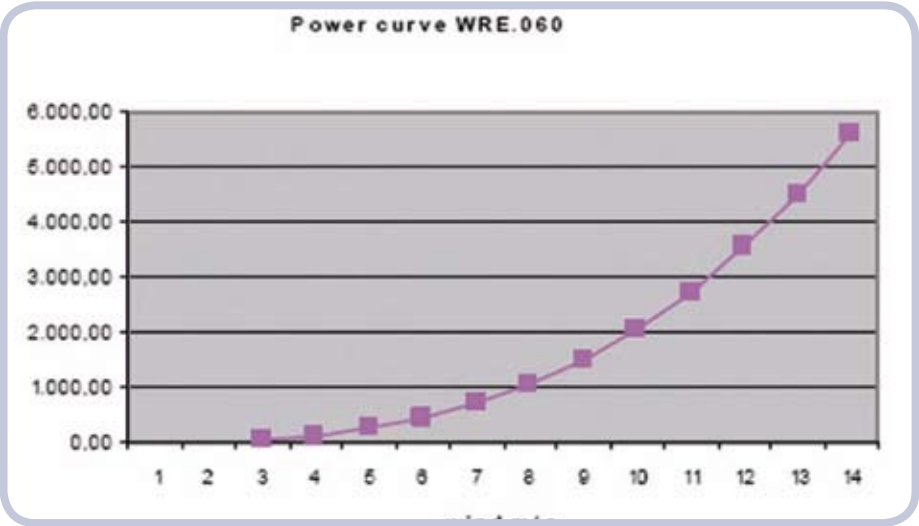
The dominant turbine type is Horizontal axis wind turbines (HAWT), which are typically ground-mounted. Vertical axis wind turbines (VAWT) at present have limited market presence, with complex wind patterns in the built environment (high turbulence), such conditions tend to favour VAWT, therefore the profile will increase. The advantages of VAWT are:

- Operate at lower wind speeds (2 - 3 m/s)
- Minimal vibrations (compared to HAWT)
- Minimal bending stresses to structure
- Silent running
- Low maintenance
- High output power to weight ratio
- Electric generator located beneath the rotors and therefore can be located within the envelope of the building

Wind Turbines Source: Windsave

Building integrated wind turbines range in capacity from 500W to more than 1.5mW, for built up areas and for practicality, machines of more than 1kW and below 500kW are likely to be beneficial. The key advantage of integrating a wind turbine to a development is that the energy produced can be directly fed into the building's electrical circuit (reduces distribution network development costs and avoids distribution losses).

The cost of a system can vary considerably by manufacturer and size of machine with an indicative bracket of £2500 - £5000. Performance of a turbine largely depends on the wind speed and the correlation between the two is a cube function, meaning that when wind speed rises above the average, the electricity generated increases exponentially. Therefore it can be difficult to predict a precise annual output of a VAWT, by using an average wind speed of 6 m/s the expected output from 1kW installation is about 2500kWh annually. With a lifespan of more than 20 years, wind turbines can save money on energy bills.



The Council would support developments that integrate either HAWT or VAWT into developments dependant on several factors (SPU2) these include:

- Visual impact
- Noise
- Vibration
- Sites of local interest (conservation areas, SSIs)
- Impact on cultural heritage (eg listed buildings)

To obtain the maximum benefits out of wind turbines, knowledge of the local wind resource is critical to designing a wind energy system and predicted output. For domestic installations, a good sourceof information on local wind speeds is the NOABL database that can be accessed from the British Wind Energy Association.

4.3.7 Small Scale Hydroelectricity

Hydropower systems convert potential energy stored in water held at height to kinetic energy (or the energy used in movement) to turn a turbine to produce electricity. Improvements in small turbine and generator technology mean that micro hydro systems are an attractive means of electricity production. Useful power may be produced from even a small stream.

As with wind power, hydro systems can be either stand-alone or grid-connected. Again, the grid-connected scheme can sell electricity generated in excess of consumption to electricity companies.

Hydro costs are very site-specific and are related to energy output. The distance from a reliable water source and cost of civil engineering works would have a large influence over the overall capital costs, but the prospect of zero or negative electricity bills should be an incentive.

Hydro installations can have a useful life of over 100 years, and with modern turbine generators able to convert over 90% of the energy in the available water into electricity, this becomes the most efficient method of energy production. The Council sees generation of energy by this method as viable for commercial, industrial or domestic schemes. Further information on viable schemes and contacts to experienced UK suppliers and consultants can be found via the British Hydropower Association.

4.3.8 Biomass

Tree waste for chipping

Biomass is an alternative solid fuel to the conventional fossil fuels and has an impact on carbon emissions that are close to neutral. Various types of biomass fuel are in use, the most common being the woody mass, which includes forest residues such as tree thinning, and energy crops such as willow, usually known as short rotation coppice (SRC). Energy crops are being grown at present within the Borough to meet the needs of the market, and to provide a secure long-term sustainable resource.

Although biomass is a widespread technology in many European and North American countries, in the UK the market is not as well developed; the typical applications of biomass are:

- Biomass boilers replacing standard gas or oil fired for space heating and hot water (for individual buildings or district heating schemes, 0.2 - 2mW)
- Stand-alone room heaters for space heating (3 - 5kW)
- Stoves with back boilers, supplying domestic hot water (15 - 50kW)
- Biomass CHP for heat and electricity generation (0.2mW and above)

Appliances can achieve efficiencies of more than 80%, and through recent studies (Biomass sector review for the carbon Trust 2006) the potential of small-scale (0.2 - 2 mW) schemes would be viable as long as oil prices are above $50 a barrel, and where the scheme is to be used as a CHP, it becomes competitive down to $30 a barrel. For developments that require a high heat demand, this source of fuel and system should be considered.

Biomass generator

For any biomass scheme there are a number of design issues to consider:

- Building space and organisation to accommodate and operate the plant
- Sizing of the biomass plant
- Ventilation
- Noise
- Health and Safety

The key advantages why biomass should be viewed as a viable alternative to fossil fuel, because:

- Reduce CO2emission by 90 percent compared to fossil fuelled systems
- Reduce emissions of other pollutants such as sulphur
- Promote sustainable woodland management
- Provide new job and business opportunities for communities
- Provide a secure local supply of energy

4.3.9 Combined Heat and Power (CHP)

Checklist Ref: 4.3 p

CHP at the large commercial size is now fairly common in premises that have a simultaneous demand for heating and electricity for long periods, such as hospitals, recreational centres and hotels. Compared with using centrally generated electricity supplied via the grid, CHP can offer a more efficient and economic method of supplying energy demand. Where traditional electricity generation through power stations run at approximately 30 per cent efficiency due to heat wastage, a CHP system can reach efficiencies as high as 85 percent because the surplus heat can be used to provide heating and hot water. CHP schemes are generally run on gas or diesel, and with the continued growth of biofuels, this has been seen as a viable alternative. The Council sees CHP opportunities within:

Mixed-use developments

Mixed-use developments offer ideal opportunities for CHP. Heat from industrial or commercial sites could be redirected through a district heating system for residential use. Alternatively, small groups of community buildings including shops, offices, halls and swimming pools etc. can exploit small-scale CHP schemes.

Large Buildings

Buildings which include office blocks, shopping precincts, leisure centres, warehouses or factories are well suited for CHP systems, as heat will be required throughout the year.

5 Water Conservation

The Bigger Picture

The sourcing, supply and disposal of water are each proving to be increasingly problematic issues from a range of perspectives. Periods of more extreme weather have led to both drought and flood conditions being experienced, each posing risks for the built environment. Water poses issues on two fronts: firstly, its supply and use; secondly, the disposal of water, either as a component of sewage or, and perhaps more importantly given changes in precipitation levels, as rain or stormwater (in fact, storm water should be seen as a resource to be collected and used, where appropriate).

Water is a scarce resource in many parts of the world, and yet, in the UK, treated (potable) water is used for all processes, including watering the garden, cleaning the car, flushing the toilet, as well as drinking and for food preparation. In recent history, water shortages have been reported by water authorities throughout the country; additionally, there has been a marked increase in variability of weather patterns, exacerbated by the operation of water drainage and run-off systems close to, or beyond, capacity levels. Excess water in the form of rain can lead to substantial problems for drainage systems; this is being made worse by the building of new developments on flood plains, and by the covering of large areas of water-absorbing ground with solid urban surfaces (roads,paths, car parks and concrete etc).

The natural water flow patterns can be altered quite substantially and this causes major problems for existing systems and potential for increased flooding, particularly associated with river flows.

How a development consumes, disposes and displaces water is an important sustainable matter. Developments' water management systems need to be engineered to meet the users of today and for the future. The three areas that developers have to take account of with water management systems are to:

- Reduce demand
- Re-using water
- Avoiding environmental damage from run-off

5.1 Reducing demand

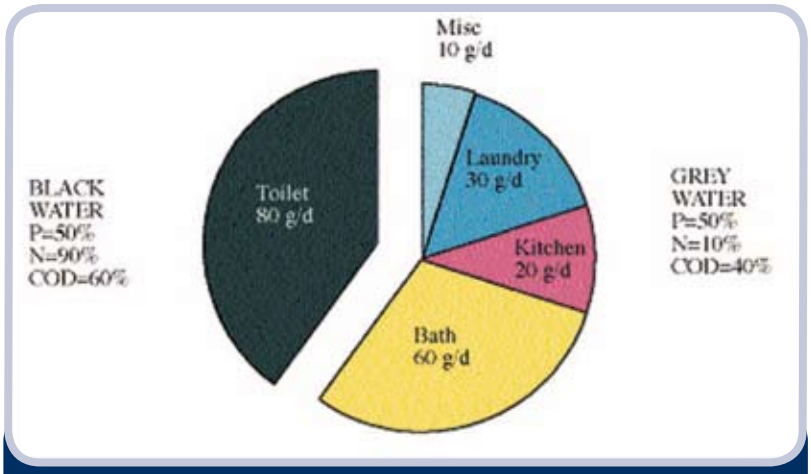
Checklist Ref: 4.5 a, b, c, f

In commercial and residential developments the demand for water can be reduced by as much as 50 percent. By using a variety of simple strategies, water management systems can deliver afavourable economic return while demonstrating responsibility of this resource. By incorporating some or all of the following measures within new developments or conversions, the application can be looked at favourably:

- Low flush toilets (<6 litres per minute) or dual-flush toilets (i.e. two flush settings according to use)
- Auto shut off taps / tap controls
- Spray / aerated / push taps in basins (office spray taps can save an estimated 1800 litres of water per year - Environment Agency)
- Low flow showers (<9 litres per minute)
- Passive infra-red sensor controls, infra-red door beams or magnetic door switches for urinals and basins
- Water meters

5.2 Re-using water

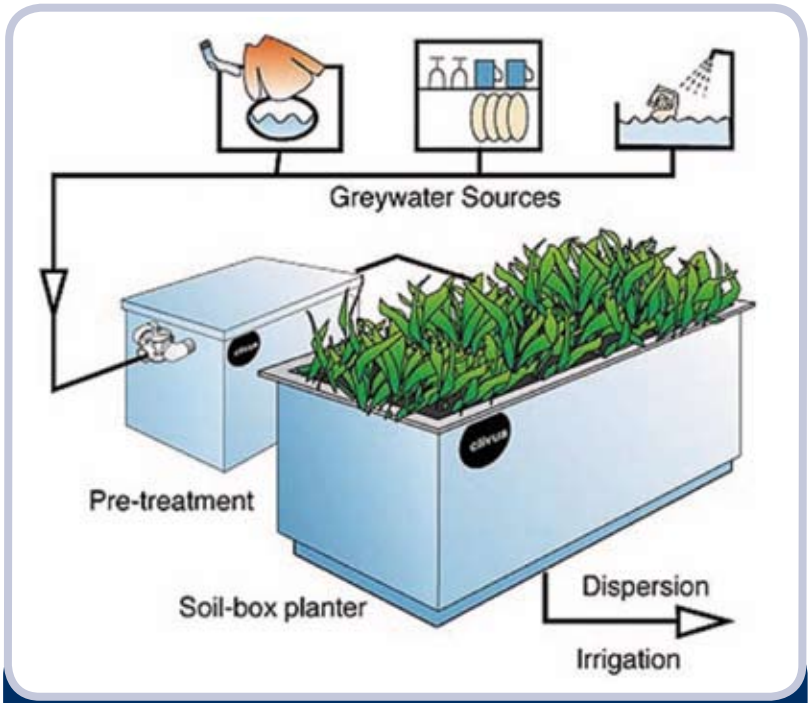
Checklist Ref: 4.5 d, e, f



Greyblack Source: Environment Agency

Coupled with the process of reducing the demand for water, it is feasible in almost all new developments and refurbishments of existing buildings that systems can be introduced for re-using water (greywater system).
Greywater is a term given to water that has been used once, typically for bathing or washing; it can then be stored, treated on-site and re-used in a range of situations not involving human contact. The most common uses of greywater are for the flushing of toilets, heating and cooling systems, and for landscape irrigation.
A suitable greywater system requires:

- A main back up supply
- When desired, a bypass system so mains water can be supplied
- A safety mechanism so that greywater is not stored for any more than two days
- A treatment system. Microbiological or biological
- Pipe identification to indicate which water is not potable
- One or more storage tanks
- An unrestricted overflow system
- Method of reducing temperature of storage area (preferably via ground contact)
- Method of exclusion of light to limit algae growth



Greywater recycling Source: Clivus Greywater

5.3 Avoiding environmental damage from run-off

Checklist Ref: 4.7 d, e, f, h

One key objective of Planning Policy Statement 25: Development and Flood Risk is to reduce the overall risk of flooding, not just for the development site, but elsewhere. Surface water run-off should be controlled as near to its source as possible, the approach should seek to mimic natural drainage systems and retain water on or near the site. The general presumption is that to reduce run-off impacts, sustainable drainage systems will be required. SuDS offer significant advantages over conventional piped drainage systems. The benefits being:

- The quantity of discharge will be reduced
- Promotes groundwater recharge
- Improves water quality
- Can improve amenity / biodiversity value of developments

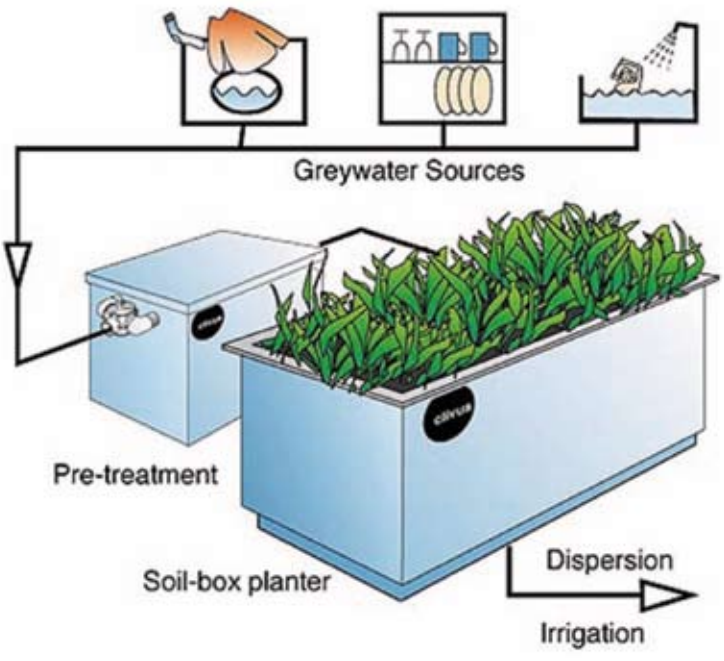
Gauging the level of SuDS required will dependent on location, type and scale of development and a site-specific Flood Risk Assessment (FRA). Developments that are located within flood zones 2 and 3, and developments that have a potential for increased surface water run-off will require a SuDS statement explaining the options that have been explored, the SuDS to be incorporated and why.

Recommended national precautionary sensitivity ranges for peak rainfall intensities and peak river flows (PPS25)

Parameter	1990 to 2025	2025 to 2055	2055 to 2085	2085 to 2115
Peak rainfall intensity	+5%	+10%	+20%	+30%
Peak river flow	+10%		+20%	

5.4 Sustainable drainage systems (SuDS)

There is no single approach to implementing SuDS. Different types of development proposal and local ground characteristics would influence the approach that can be integrated into the development. In some circumstances site conditions such as impermeable soils or the presence of contaminated land can preclude some techniques. However even in difficult situations it is anticipated that at least some techniques could still be used. Developers should incorporate one or preferably more of the following techniques at the earliest site planning stage.

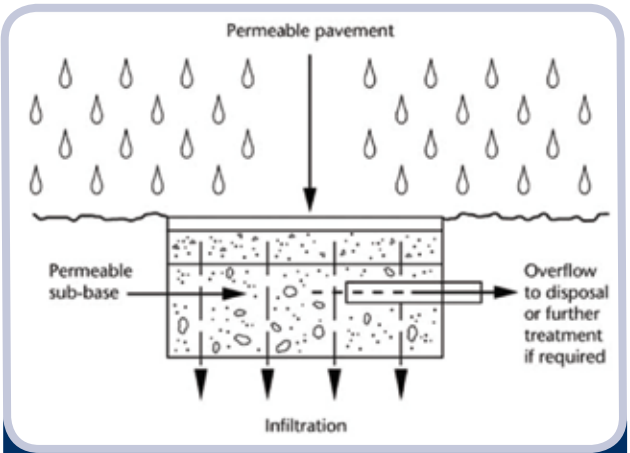


Porous and permeable surfaces Source: Environment Agency

Allowing water to penetrate the surface rather than run-off into water drains would be advisable where the development proposes areas of car parking. Porous surfaces are typically made from pavement blocks, porous asphalt and crushed stone or gravel. Dependent on the ground conditions, the water may infiltrate directly into the sub-soil or alternatively be held in a sub-paving reservoir for delayed discharge into an underground reservoir (due to ground contamination). Overflows to this system can be incorporated to ensure that surfaces are kept free of water at all times.

Swales and basins

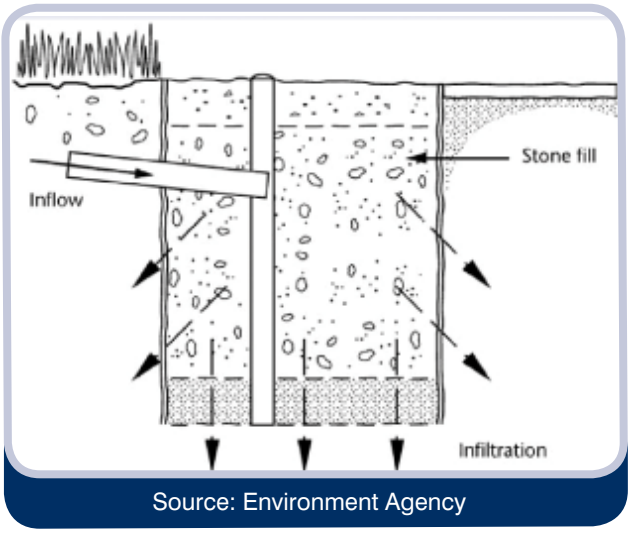
They take the form of an open-air shallow depression, normally installed as part of a drainage network connecting to a pond or wetland, prior to discharge to a natural watercourse. The benefits are to provide temporary storage of stormwater, reduce peak flows to receiving waters and allow water filtration into the ground, as well as filtration of pollutants and microbial decomposition. In addition, following heavy or prolonged rain the shallow depressions fill, providing temporary wetland areas that hold equal benefit when compared against permanent wetland. They are useful alongside roads and can replace conventional kerbs, which in turn would save construction and maintenance costs.



Source: Environment Agency

Infiltration trenches and filter strips

Infiltration trenches comprise of a stone-filled reservoir into which stormwater is diverted; from this system water can filtrate gradually into the ground. Solids that would reduce the efficiency of the system can be removed by incorporating a filter strip or sump pit.



Source: Environment Agency

Filter drains perform the same function by removing stormwater to a designated discharge point; due to a perforated pipe, the excess water can filtrate into the ground. Similar to swales, they are predominately used next to areas of impermeable surfaces, for example roads or car parks.


Infiltration trench at First Point Source: Environment Agency

Ponds and wetland

These can be designed as wet or dry ponds, or wetland. They can contribute greatly to biodiversity but also improve the visual amenity of the area when they include a permanent water body. With careful design, they can accommodate large quantities of water during storms, which increases a site's flood storage capacity. For the development of fully integrated SUDS, ponds and wetland would be fed by a combination of the above-mentioned systems. A further recommendation would be to use silt traps to reduce sedimentation.

Green roofs and vertical greening

The technique of planting a vegetated layer on roof surfaces has a wide range of benefits, both environmental and economic. Green roofs would be a major contributor towards reducing run-off from a development's peak flow and total volume discharge following a period of prolonged rain; in addition, provide vital habitat for insects and birds, insulate the roof in winter, and shade from summer heat. Also, with the vegetated layer, ultra-violet radiation will not penetrate, thereby prolonging the life of the roof. Further guidance can be found later in this document.

6 Transport

Our quality of life depends on transport and easy access to jobs, shopping, leisure facilities and services; we need a safe, efficient and integrated transport system to support a strong an dprosperous economy. But the way we travel and the continued growth in road traffic is damaging our towns, harming our countryside and contributing to global warming.

PPG 13 - Transport

Few people would disagree that transport in the UK has many problems. Road traffic is growing bythe day, leading to congestion, pollution, safety concerns, health problems, climate change, and for many, a reduction in the quality of life. The total distance travelled by all motor vehicles in Britain is almost 500 billion kilometres - more than 40 round trips from Earth to the planet Pluto. This now accounts for 26% of emissions in the UK and is the fastest growing source of climate change gases. Meanwhile, if all the cars in Britain were lined up head to tail, they would go twice round the world. These figures are alarming, but things are set to get even worse. The latest figures show that traffic is rising by 2 percent annually, enough to make a big difference in just a few years.

Between 1991 and 2001 the amount of households in Yorkshire and Humberside that do not have a car has reduced; also within the same time period, the amount of households that have two cars has increased. One of the planner's major issues at present is on how to remove people's dependency on the car and to promote more sustainable methods of transport.

The broad over-riding principles - development location discusses the issue of integrating land useplanning and transport planning and the importance of focusing development that are high trip generators close to public transport links.

Average distances travelled per person in Britain per year

	1999 / 2001	1985 / 1988
walking	189 miles	244 miles
bicycle	39	44
bus	342	406
train	368	292
car	5354	3796

Source: National Travel Survey

6.1 Designing for pedestrians and cyclists

Checklist Ref: 2.5 a, b, c, d, e, f, g, l, j

New developments from the outset should be designed for both pedestrian and cycle movement into and also through the site. Well-designed, safe and attractive links between destinations such as bus stops, retail and commercial outlets, schools, parks, and other community facilities will give a viable alternative (to the private car) for short journeys. The need for such routes is important to everybody, but particular attention be given to those with mobility impairments, those with temporary impairments, the elderly, the infirm, those with prams or buggies and children.

Generally, footpaths and cycle tracks in new developments should be designed to:

- Avoid steep gradients
- Be as short and direct as possible
- Be relatively wide and open
- Be readily visible from other points on the development, overlooked from public areas, residential, retail or commercial developments
- Be safe, well-lit and clearly marked with good street furniture and signs
- Be environmentally appealing, by incorporating landscaped areas in line with Doncaster's agreed landscape design principles
- Deter their use by motorcycles; methods that could be included are by the erection of barriers, walls or gates at access points or along the route
- Run parallel to roads, they should be separated by a grass verge or a low-level landscape feature (where appropriate)

Integrated path for both bike users as well as for people walking

The aim of new developments should be to encourage new cyclists while providing improved facilities for existing users, cycle park facilities should be easily accessible and located so they can be overlooked to deter the risk of theft (ST6, T42, T43). For further information on this subject, the local reference document Better Places to Live in SouthYorkshire and the companion documents technical appendix 1 and technical appendix - specification, all these documents can be found on Doncaster's website under Design Guidance for Residential and IndustrialDevelopments.

http://www.doncaster.gov.uk/Living_in_Doncaster/Neighbourhoods/Planning/our_plans/Design_Guidance_Residential_and_Industrial_Development.asp

Cycle sheds

6.2 Designing for access to public transport

Checklist Ref: 2.2 a, b, c, d, e, f

Another method of reducing car use is to promote public transport as an alternative. The initial advantage is that large numbers of people can be moved between destinations in one vehicle/train as opposed to several private cars. The obvious benefit is environmental, by the reduction of air pollution (carbon dioxide/carbon monoxide); other benefits include creating greater social interaction, more efficient use of land, and making the road network safer by reducing the amount of traffic on the roads.

The design of all new developments should have consideration for public transport needs. The layout of the development should integrate footpaths and cycle tracks to public transport links,or if this is not possible (due to size or location of site), direct routes to public transport links that are in close proximity to the site should be provided (ST4). In addition this would require adequate routes through the site for buses, with the provision for shelters in prominent locations, or provide these facilities on the edge of the site, or provide clear direct routes for walking to nearby bus stops or rail stations, including safe crossing points on major roads and clear signage.

With the planning of major developments, it would require early consultation with public transport operators to give them the best opportunity to plan their resources to deliver effective new or enhanced public transport services.

6.3 Integrated transport

Airport Bus

The Council consider that a balanced and integrated transport network is needed so as to maximise travel opportunities and encourage the effective and efficient use of transport resources. Any new development must consider the integration of the proposal with existing and proposed transport links and interchanges (ST7). Furthermore, in major developments, forethought should be given to the future expansion of transport facilities; the allocation of land for this purpose would be looked at favourably.

6.4 Designing for car use and parking

Checklist Ref: 2.3 b, c, d, e, f 2.4 a, b, c, d, e

Traditionally, the private car has had an over-riding influence over the provision of road space and parking in respect to the design and layout of new developments. To fully remove the car as a viable form of transport would not be justifiable. With Doncaster having many rural communities, and for the elderly and infirm, it can be there only transport option; also, with other sections of the community such as those with disabilities, the private car is vital for mobility. Therefore, development proposals should have consideration for these road users and provide prioritised parking which is easily accessible.

The availability of car parking has a major influence on the means of transport people choose for their journeys. Car parking also takes up a large amount of space in new developments and this in turn reduces densities. Reducing car parking allocation in new development (and in the expansionand change of use in existing development) is essential for the promotion of more sustainable transport methods.

Maximum car parking standards relating to commercial and industrial developments for the region can be found in the Yorkshire and Humber Regional Spatial Strategy table 7.3. PPS3 - Housing does not include maximum standards for parking. The document states that the design of parking should be well integrated with a high quality public realm and streets that are pedestrian, cycle and vehicle friendly. Developers will be required to submit their car parking allocation within either the Transport Assessment or the Travel Plans. There would need to be justification for their allocation and Doncaster will aim in reducing car parking allocation where other modes of transport are easily assessable and where there is a concentration of facilities (e.g. town centres), but make sure that sufficient allocation be given for disabled people (ST3).

Of people travelling in a car in 2004, 38% were drivers travelling alone, 25% were drivers travelling with one or more passengers, and 36% were passengers.

National Travel Survey, 2004

6.5 Travel plans

Checklist Ref: 2.3 a2.5 h

The Mere, Lakeside - how travel plans can shape the way people move from home to work

These may take the form of either green transport plans, company travel plans, school transport plans or healthy travel plans, they can vary in content and objectives due to the individual nature of the development. A travel plan aim is to identify means of reducing travel by the car in respect to employees/visitors/residents by offering viable travel choices, providing and promoting alternatives to the car, for example, cycle facilities including showers, public transport information and incentives (public transport costing subsidies), car sharing schemes and home working. They also can be used to deliver more efficient management of fleet vehicles and deliveries to businesses.

Doncaster is pro-active in the adoption of a healthy travel plan for developments in the following circumstances:

- For all major developments comprising jobs, shopping, leisure and services
- For smaller developments comprising jobs, shopping, leisure and services in locations where there are initiatives to reduce road traffic, or the promotion of public transport, walking and cycling
- Where a plan will help to address a particular local traffic problem associated with a planning application
- Medical, health care centres

6.6 Facilities for clean fuel vehicles

Alternatively fuelled vehicles have an ever-increasing role to play in the reduction of air pollution within the Borough. To encourage there use the Council will seek:

- The provision at petrol stations and other suitable locations of facilities for the sale of alternative cleaner fuels, for example, Liquid Petroleum Gas (LPG) and Compressed Natural Gas (CNG). Also electric charging points being available for electric vehicles and hybrids.
- Provision of convenient points for alternative fuel refuelling within new developments, developers to ensure that they are built in schemes.

7 Pollution and Waste Management

7.1 Construction and demolition impacts

Checklist Ref:5 a, b, c, d, e, f, g, h, i

Doncaster Community Stadium under construction

The construction industry plays a major role in improving the quality of the built environment, butcan be a considerable source of environmental nuisance to neighbouring properties. By considering the site characteristics and the local environment at an early stage, many of theproblems associated with the topics within this section can be minimised. The objective is to ensurethat development proceeds with minimum disruption to the developer and to the public, and reduceany potential adverse impacts on the environment. By completing a construction impactmanagement plan prior to a development commencing, this can identify specific measures to beadopted that mitigate construction impacts in pursuance of the Environmental Code of ConstructionPractice forming Appendix 17A of the Environmental Statement.

Areas that will need explaining are:

- The re-use existing building stock to reduce emissions through the reduction of transport requirements and energy needs (use of embodied energy)
- How waste materials will be re-use and recycle on-site. Developers may be asked to produce and implement a written ‘site waste management plan’ that should identify the volume and type of waste, and demonstrate how off-site disposal of waste will be minimised and managed

- If there are any areas of contaminated land on-site, how they are going to be managed
- The minimisation of dust, noise and light pollution
- How existing wildlife habitats will be managed
- Enclosure of site, increase security measures and reduce trespassing
- Hours of work
- Vehicle movement on and off the site. Also to control the deposition of mud or debris on the highway
- A plan showing the layout of the site compound
- How local residents (if applicable) will be informed of site works

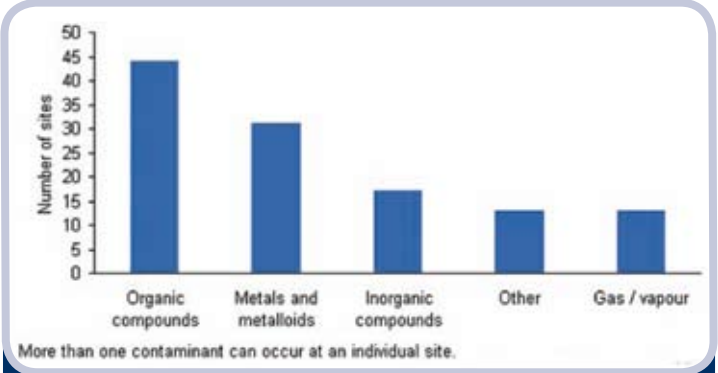
All major developments definition (page 7) will be asked to sign up to the Considerate Constructor'sscheme if not already doing so, andto adhere to the principles of the code of practice.

Considerate construction

7.2 Land decontamination

The principle of sustainable development means that, where practicable, brownfield sites, including those affected by contamination, should be recycled into new uses and pressures thereby reduced for greenfield sites to be converted to urban, industrial or commercial uses. Such recycling can alsoprovide an opportunity to deal with the threats posed by contamination to health or the environment.

Main Contaminates



Source: Environment Agency

Doncaster's Contaminated Land Strategy requires all new developments to assess any potential risk of contamination, as land contamination is a material consideration, and conditions to carry out a full site investigation can be imposed, should previous land use indicate a possible contaminative use, or as a result of a historical desk top study (ENV 69). Site investigation reports should be submitted to Environmental Health for approval and form part of the Building Regulations submission.

On a precautionary basis, the possibility of contamination will be assumed when considering planning applications in relation to all land subject to or adjacent to previous industrial uses (seetable 2.1, PPS23 Annex 2 - Planning and Pollution Control) and also where uses are being considered that are particularly sensitive to contamination - e.g. housing, schools, hospitals, children's play areas.

There are three main aims of the Contaminated Land Strategy:

- No risk is posed to the environment or human health as a result of land contamination past, present or future
- No land is under-utilised as a result of contamination
- Ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically sustainable

7.2.1 The site investigation

It would be disproportionate and unnecessary to require every applicant to carry out a detailed andexpensive site investigation. However, sufficient information would be required to determine theexistence or otherwise of contamination, it's nature and the risks it may pose and whether these canbe satisfactorily reduced to an acceptable level.

The investigation must identify all possible pollutant linkages; to effectively do this a source -pathway - recept or approach should be used. A phased or tiered approach is recommended in the Defra / Environment Agency's Model Procedures for the Management of Contamination (CLR11).

The initial provision of this information is essential to determine whether further more detailed investigation is required.

Applicants can obtain guidance on the correct procedure to follow by referring to the ContaminatedLand: A Guide to Developers in The Doncaster Borough booklet, copies of which are available fromthe Planning Department and The Pollution Control Section of Environmental Health. The Yorkshire and Humberside Pollution Advisory Council (YAHPAC) have also produced guidance documents,and the CLR documents 7 - 11 should be consulted.

7.2.2 Remediation

There are many different techniques that can be used for the reclamation of contaminated land. Early schemes in the UK relied on the cover system to limit exposure to contaminants at the surfaceof the site, the process of constructing physical barriers can represent a relatively simple low-cost strategy, but at worst, this cosmetic exercise simply conceals contaminants without being treated which can cause problems in future years.

The ‘excavate and export’ strategy has been used with significant success in the past, but with increased disposal costs and stricter waste regulations coupled with the need to move towards more sustainable methods of treatment. Doncaster would prefer alternative techniques to be sourced and used; the presumption will be in favour of on-site treatments such as bioventing, biosparging, stabilisation/solidification, or soil vapour extraction.

The Environment Agency will be consulted when remediation techniques are considered. Further information on alternative techniques can be found through either the Environment Agency or CIRIA. Furthermore, on the completion of any remediation work, a validation or a Post Remedial Statement would be required.

7.3 Air pollution

Checklist Ref: 6.1 a, b, c

Poor air quality affects human health and the environment. As part of its approach to sustainable development the Government has adopted the UK National Air Quality Strategy [NAQS] to deal with the assessment and management of air quality. Although national policies on air pollution are expected to deliver countrywide improvement on air quality, it is recognized that in some local hotspots, because of transport, commercial and industrial activities, air quality will remain poor and will require a more focused approach to improve air quality. In order to identify these ‘hot spots’, local authorities have been required to carry out a review and assessment of air quality within their areas. Local authorities have had to consider the present quality of air and the likely future quality of air to the end of 2005 and assess whether the prescribed objectives are likely to be achieved by the end of 2005. Where the prescribed air quality objectives are unlikely to be met, local authorities must by order designate such areas as Air Quality Management Areas (AQMAs). Following thedesignation of an AQMA, the local authority is required to prepare a written action plan to achieve air quality standards and objectives in the area.

An Air Quality Action Plan has been produced which is contains measures designed to enable the Council to meet the Government's Air Quality Objective targets within the AQMAs and to improve air quality throughout the Borough. The Action Plan was produced by a cross Directorate group that included representatives from external bodies such as the PCTs, SYPTE and the Highways Agencyfollowing extensive consultation with the residents of the Borough.

7.3.1 Air quality strategy

Traffic congestion that occurs on the main roads around central Doncaster

Although air pollution levels within the Borough are generally low, certain areas suffer elevated levelsof pollution, principally from traffic-generated sources. The Council has declared 4 AQMAs due to the likely hood of the Governments air quality objective for nitrogen dioxide not being met by the qualifying date (Dec 2005). This projected accedence's of the target levels is solely due to traffic emissions. Details of all 4 AQMAs can be found on Doncaster's website or alternatively contact the Pollution Control Section.

All developments within, adjacent to or that may affect the air quality within an AQMA will require an air quality impact assessment. This is especially true of large commercial/ industrial/retail developments that may generate significant numbers of additional vehicle movements. Industrialdevelopments will require approval under the IPPC/PPC regime as well as planning permission approval.

7.4 Noise pollution

Checklist Ref: 6.2 d, e, f, g

Noise that emanates from either inside or outside buildings has become an emotionally charged issue within our towns and cities. It can have a severe impact upon the health and quality of life ofresidents within any given locality and also have a significant impact on the natural environment. Noise disturbance can cause the displacement of species unable to tolerate increased noise levels.

Doncaster Borough incorporates a mixture of both rural and urban form, industrial and commercialdevelopment and residential. Land-use planning aims to guide developments to the mostappropriate locations, but with greater demand placed on vacant land then these land uses arebecoming more integrated. The Council strives towards minimising noise levels within acceptablelimits.

Possible sources of noise pollution include roads, railways, industrial and commercial operations,entertainment, construction, mechanical plants and deliveries.
With all developments it is an important consideration in ensuring that ambient noise does not creepabove acceptable levels. Uses and activities will be considered and assessed, in certain circumstances developments would not be accepted if it were not possible to achieve ordemonstrate that unacceptable noise can be eliminated.

7.5 Planning applications

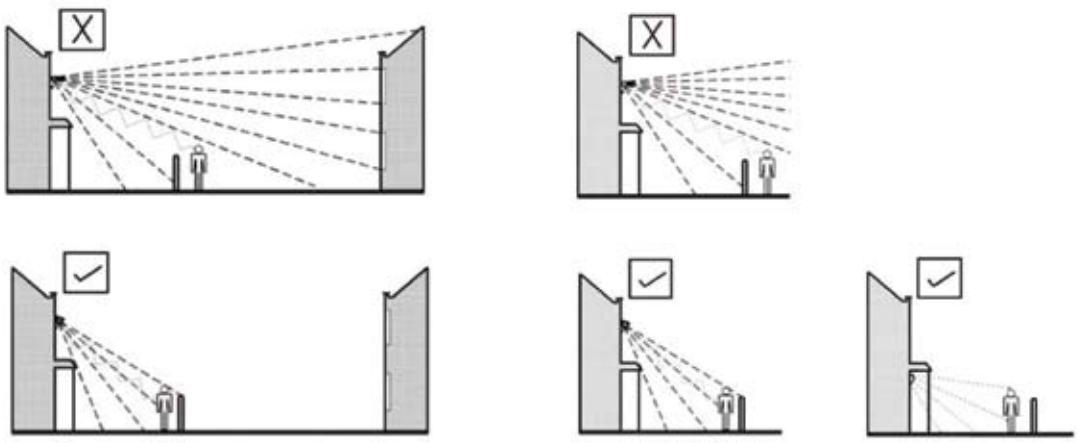
The impacts of both air and noise pollution will be taken into account as a material consideration (ENV 65) in relation to:

- Location, such considerations as the reason for selecting the chosen site itself
- Impact on amenity
- Prevention of nuisance
- The risk and impact of potential pollution from a development effecting surrounding land uses
- Impact on the surrounding roads and other transport networks

7.6 External Lighting

Checklist Ref: 6.3 h, i, j, k

Domestic security lighting



Source: Institute of Light Engineers

The Council has a growing concern about the impact on the environment and on amenity of excessive, unnecessary and badly designed lighting. Poorly designed and misdirected (often pointing up instead of down) schemes, resulting in wasted energy, obscuring of the night sky and visual intrusion. Poorly designed schemes can also increase hazards by creating dazzle or the opposite to their desired effect in creating pools of darkness that can compromise security; in addition, as with noise, lighting can have a serious negative impact on the natural environment.

The Council would require details of any external lighting scheme as part of any new or refurbished development application. Applicants will be expe cted to demonstrate minimum need for security and working purposes and reveal how potential pollution can be minimised (ENV66).

Further guidance should be sought before lighting schemes are designed for developments; guidance notes for the reduction of light pollution are available from the Institute of Lighting Engineers, and contact details can be found at the end of this document.

7.7 Waste management

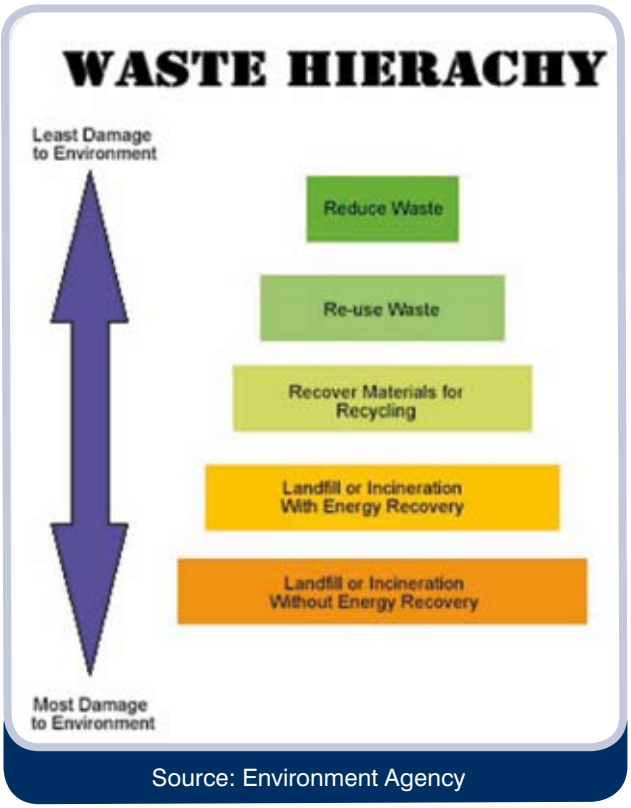
The types of waste we produce, the way we manage waste, and the way we transport it, all impact on the environment. While waste cannot be completely eliminated, we can reduce its environmental impact by preventing waste from being created wherever possible, and sustainably disposing of the waste that is produced. Waste generated should be reused and recycled, transforming it from a problem into a resource.

Proposals that are likely to generate significant volumes of waste through their development or operation will be required to produce a waste audit as part of the application. This audit should demonstrate how any generated waste would be managed and minimised where possible.

Doncaster Council will require new development to make sufficient provision for waste management and promote designs and layouts that secure the integration of waste management facilities without adverse impact on the street scene or, in less developed areas, the local landscape (PPS10 - Planning for Sustainable Waste Management).

In October 2002 Doncaster embarked on an ambitious programme through the Borough Strategy 'achieving full potential' of a zero waste policy. New technologies and treatment methods are a key part of this policy and due to this, a Vertical Composting Unit (VCU) is now in operation in the North of the Borough. It is anticipated that in future the Unit will process 1000 tonnes per annum of kitchen waste and 500 tonnes per annum of green waste. Waste by definition is anything left or thrown away because not wanted, or unfit for use.

Vertical composting unit
(image and text to be supplied)



Source: Environment Agency

7.7.1 Recycling

Checklist Ref:6.4 l, m, n, o

Rescape premier

Source: Rescape

As Doncaster is adhering to the government's national waste strategy 2000, the targets have been set for recycling or composting of household waste. By 2005, 25% of household waste will have to be recycled, and by 2010, 30% recycled. The best method of recycling waste is to start at source. Segregating waste into different classes saves time and energy further down the waste flow stream. To achieve this, facilities within convenient distances from residential, commercial and industrial sites would be required.

New developments should allocate sufficient space to enable the storage and collection of recyclable materials on site, for example paper and boards, bottles, tins and plastics. Facilities should allow the following factors:

- Suitable location so the wheeling of containers will be kept to a minimum
- Suitable container attachments for lifting in accordance with collection vehicle
- Storage containers to be non-flammable (due to fire risk)
- Adequate turning area for collection vehicle (Technical Appendix (page 60) to Better Places to Work and Better Places to Live in South Yorkshire)

Recycling facilities in themselves should be well-designed, so that they contribute positively to the character and quality of the area in which they are located. Poor design is in itself undesirable, undermines community acceptance of waste facilities and should be rejected (PPS10).

In January 2003 the Doncaster ReFurnish project was established as an initiative of the Doncaster Furniture Recycling Partnership (DFRP), and the Remove project is the collection scheme for ReFurnish.

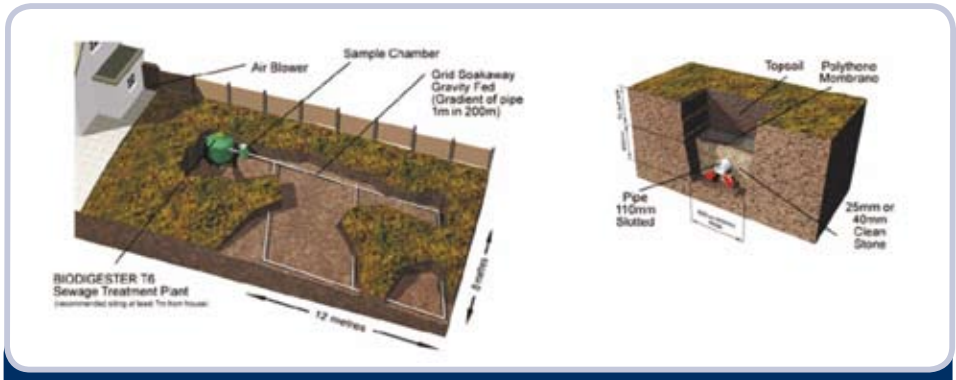
During August 2003 a bid for Neighbourhood Renewal Funds to set up a project bringing together the community sector and several Doncaster Council directorates was submitted and approved, and Remove was launched on Monday 13 October 2003. Working in partnership with the Council's Refuse Collection contractor, SITA UK, and several other Doncaster Council directorates, the service maximises opportunities in the field of recycling and reuse that would not otherwise be open to either sector alone.

Doncaster ReFurnish currently supplies donated furniture and household items to those in receipt of benefit and low income and who do not have the means to buy furniture from stores. The Remove project plays a significant role in assisting families and individuals by providing them with an opportunity to access affordable household items.

In addition the scheme has created 10 full time and 2 part time jobs and also provides skills training in areas such as customer care, warehousing, IT, administration and refurbishment.

7.7.2 Sewage

The treatment and discharges of sewage and polluted water is an expensive and energy intensive activity. Treating waste at source and by more natural methods would be desirable by the Council. Given that problems of sewage treatment within certain areas of Doncaster are occurring due to the capacity of the pipe network being reached. Small-scale local sewage systems that are designed for 1 household up to 50 households that use biological treatment methods are available, therefore developments particularly within rural settings would have to give full justification for discarding this method of sewage treatment



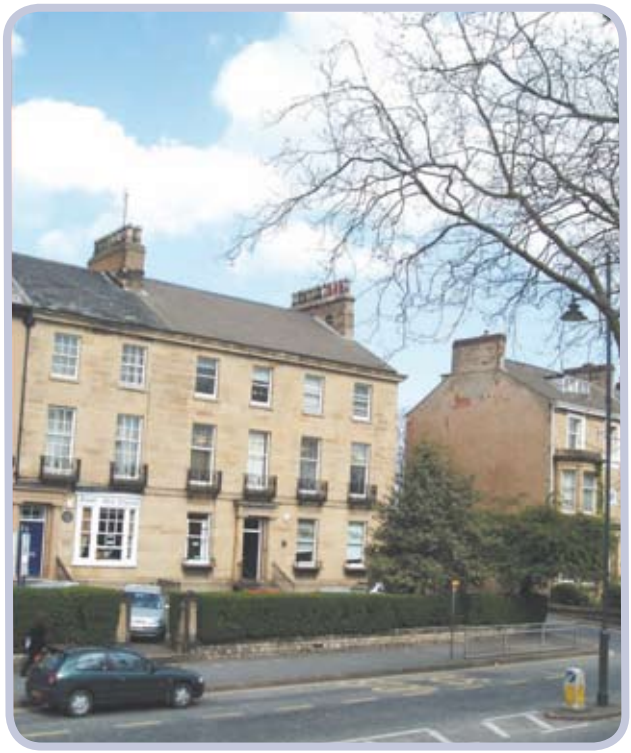
Biodigester sewage soakaway system.
Source: Biodigester

Disposal of waste from farming practices is also a major concern, poor farming practices lead to the pollution of land and water resources, this is environmentally damaging and costly to clean up. Guidance for farmers can be found at the DEFRA website, details can be found at the end of thisdocument. Alternative methods for the disposal of agricultural waste should be sourced. Utilising agricultural waste products as a fuel for the production of renewable energy should be considered.

Reference should be made to DETR circular 03/99 when considering these issues.

8 Environmental Sustainability

Built Heritage



Checklist Ref: 1.2 g

The conservation of the built heritage can bring many sustainable benefits. Historic buildings are a resource that holds a reserve of materials and the energy used to build them(see embodied energy). As energy was not as readily available when these buildings were built, they were designed and orientated to make the best use of natural light, ventilation and reduce heat less and therefore are inherently sustainable. Materials used in their construction will have mainly been locally sourced and will not have been transported great distances as many modern materials now are. Buildings are often robust and can be adapted to many different uses, for example Georgian and Victorian town houses are now used for a variety of uses from residential, either as a single unit or divided into flats, or commercial, as offices, shops and cafes. Old buildings have been constructed using tried and tested methods of construction and obviously already been used over a great period of time and show that they have a long use if well looked after. These are obvious sustainable credentials. Historic buildings also have cultural recognition and can be used to give towns identity and a sense of belonging that helps build a strong community spirit and therefore facilitates more sustainable settlements.

Doncaster has a very significant build heritage. Its Conservation Areas, archaeological sites andbuildings of special architectural interest make a vital contribution to the environment and quality of life in the Borough and are important for their education, recreation and tourism value. It isimportant that this built heritage is not destroyed, but protected in a way that allows the function to alter, prolonging the lifespan of an area or building.

Conservation Areas

Section 69 of the Civil Amenities Act 1967 gives the Council the power to designate

Conservation Areas, 'areas of specialarchitectural or historic interest, the character or appearance of which it is desirable to preserve or enhance'. It is the character of a whole area rather than any individual buildings that is important. Pleasant groups of buildings, open spaces, trees, an historic street pattern, a village green or features of historic or architectural interest may be amongst contributions to the special character of an area.

The aim of a Conservation Area is not only to preserve and enhance the best of the existing features but also to ensure that allnew development is in sympathy with its character and makes a positive contribution to it. (ENV25).

Listed Buildings

Listed buildings and structures are an important part of our national and local heritage. In the majority of instances the Borough Council will expect a listed building to be redeveloped sensitively and to contribute positively to the local environment (ENV31). In the instance where a proposal is requesting demolition of a listed building or buildings, the Borough Council will not grant consent until full justification has been explored. The developer will be expected to provide an independent technical assessment of alleged structural failure before consent to demolish can be given (ENV 30).

Sites of Archaeological Importance

Doncaster Borough contains a rich archaeological heritage with evidence of human activity dating back over 400,000 years (Palaeolithic period). Evidence of Roman (forts, roads and villas) and medieval (castles, churches and priories) settlements are also found throughout the Borough, all evidence shows the Borough's long history of settlement.

As written in National Guidance (PPG16), all archaeological remains should be seen as a non-renewable resource and therefore appropriate management is essential to ensure that they survive in good condition.

Doncaster works in co-operation with the South Yorkshire Archaeology Service, local organisations, land owners and the community, to promote the protection and understanding of archaeological remains within the Borough (ENV35).

8.1 Open space

Checklist Ref: 3.1 a7.1 a, b, c, d, e

Public, passive or open space is all around us, a vital part of everyday life: the streets we pass through on the way to school or work, the places where children play, or where we encounter nature and wildlife; the local parks that people use to participate in sport/play activity, walk or sit at lunchtimes; or simply somewhere quiet to get away from the bustle of a busy day. Therefore public, passive or open space has a number of vital activities associated with it.

Developers should be aware that the inclusion of high quality space would create or enhance economic, social and environmental values. Developers are advised to allocate sufficient land within developments for this purpose (SRL1+RL6).

Source: Land Restoration Trust

There are a number of advantages that space can bring to a development; the table below has been categorised into the three areas of sustainability.

Economic Value

- Can increase property values by 6% - 35%
- Attracts economic development and local investment
- Green neighbourhoods have fewer crimes committed against people and properties
- Improves the image and standing of an area
- Increases land values
- Tree shelter can reduce heating costs by up to 25%

Social Value

- Well-designed open space can reduce anti-social behaviour
- A green view can reduce stress in 3-5 minutes
- Greening school grounds has been proven to reduce bullying and increase learning
- Hospital patients with green views recover quicker and with fewer drugs

Environmental Value

- Soaks up 3.5 times more water than hard areas, reducing the risk of flooding
- Air quality is higher in green spaces
- Encourages biodiversity
- Provides a wildlife habitat
- 1 hectare of trees and shrubs can absorb 1 tonnes of CO2 - equivalent to 100 family cars

8.2 Biodiversity

Checklist Ref: 7.1 e, f, h

The health of our natural environment is one measure of whether we are living sustainably. Biological diversity encompasses the entire variety of life on the planet from basic micro-organisms to human beings; it does not refer simply to species that are threatened, rare, or endangered. It covers the genetic diversity within species, the diversity of species, and the habitats, ecosystems andlandscapes in which they are found. As biodiversity is perceived as having limited economic value, over recent history little importance has been placed on the protection of habitats and species. The UK lost 100 species in the last century and many more are in sharp decline.

Source: Louise Hill

Biodiversity has great value in terms of quality of life and well-being; local ecosystems give an area a distinctive local character, it is a resource for recreation, relaxation, tourism, artistic inspiration and education.

Section 74 of the Countryside and Rights of Way Act 2000 places a duty on Doncaster Council to have regard to the conservation of biodiversity in carrying out their functions. Therefore, developers need to be aware of and enable protection of existing valuable open space,wildlife and natural areas.

New developments will be assessed in terms of the following principles:

- Protect existing habitats and species, particularly those subject to the European Habitats Directive, Wildlife & Countryside Act (amended) 1981 and included in Local Biodiversity Action Plans
- Survey potential wildlife resources to find out what exists, what is threatened, and provide measures for mitigation/compensation

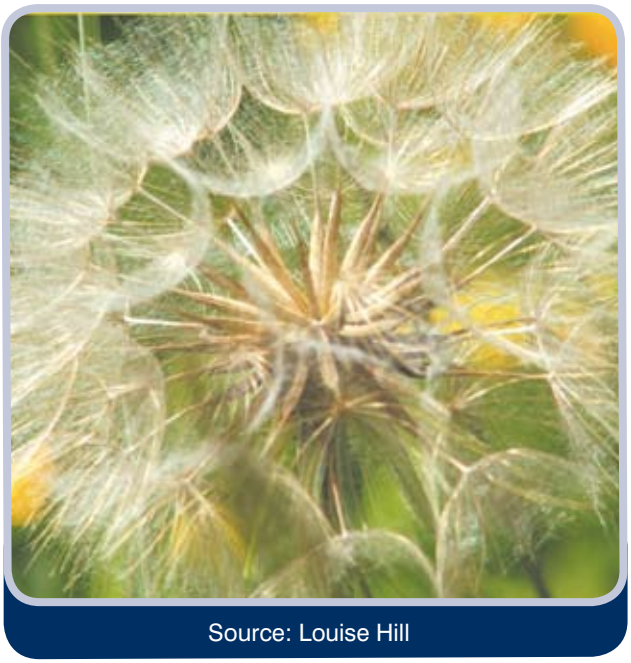
- Enhance existing environments and create new where possible (e.g. integrate bat bricks or boxes, badger tunnels and animal underpasses and rough surface etc)
- Mitigate against potentially adverse impacts to habitats and species
- Compensate for losses to these habitats and species where damage is unavoidable; and monitor and enforce conditions/agreement

Developers should provide a clear indication of how existing natural wildlife features such as trees and hedgerows, grasslands and wetlands are to be retained whilst additional planting of relevant species should enhance the natural setting of developments (ENV 59). This can be identified through carrying out an ecological survey. New development should also provide for enhancement and long-term management of habitats and green corridors (PPs9). Careful selection of species can add to the biodiversity of an area and attract wildlife. Developments will be expected to contribute to targets and actions identified in the Local Biodiversity Action Plan priority habitats and species. Planning conditions or agreements will be used to recreate habitats either on or off-site, management plans in terms of securing their preparation and implementation, if this is deemed appropriate. The use of peat should be avoided as its production often has harmful environmental impacts. For further information on making sure wildlife is conserved in development read the Council adopted SPD: Planning for Nature on Development Sites in Doncaster.

8.3 Landscape

Checklist Ref:4.7 a, b, c

Landscaping includes landforms, vegetation, historic features and hard/soft landscape features. Landscape and natural areas can also add value in amenity terms to the development but can also reduce surface run-off (see Sustainable Urban Drainage System techniques), can increase the energy efficiency of a building (see green/brown roofs and vertical garden) and absorb pollutants and CO2. These features and local characteristics need consideration in the early stages of scheme design.



Source: Louise Hill

Sites that are situated within close proximity to busy transport nodes then landscaping would be required as visual and an acoustic barrier. Bunding and fencing should be carefully designed and softened into planting, careful selection of tree and plant species would be required to maximise wildlife value and seasonal interest, also to produce an adequate screen between the proposed site and any unwanted views.

Unless otherwise agreed, all existing healthy features should be protected.

Special regard has to be given for the protection of trees within a site and their loss should be avoided where at all practical. Trees provide many environmental benefits including biodiversity for many animal species, provide shelter from prevailing winds, help in reducing the impact of pollutants from neighbouring activities (dust and noise) and soften the visual impact of buildings and hard surfaces. Local people often see trees as adding value to their environment. They should be enhanced and the provision of more vegetation cover should be encouraged.

For a more comprehensive understanding of the Council's landscape requirements for new developments and the conversion of existing buildings, applicants are advised to view the adopted supplementary planning document Landscape Guidance for Development Sites in Doncaster.

8.4 Green/brown roofs and vertical gardens

Checklist Ref: 4.6 a, b, c, d, e, f

By incorporating a green or brown roofand/ or vertical garden into a development would address a number of economic, social and environmental challenges that the Borough is tackling. Developments that include such systems would be viewed favourably, especially where a potential development is in close proximity to a site of special scientific interest or to developments that will potentially increase the amount of rainwater run-off to a site.

For green roofs there are basically two systems that could be integrated: extensive and intensive. Extensive green roofs are characterized by their low weight, low capital cost and minimal maintenance. Intensive green roofs have a greater soil depth and more plantings with higher maintenance requirements.

Both systems have a number of benefits that include:

- Sustainable Urban Drainage - they can absorb or slow 70 - 90% of rainfall, thus reducing the run-off dramatically, and lowering the risk of floods
- Provide diverse habitats - when planted with indigenous flora, this can provide important habitats for native birds and insect populations
- Improve air quality - Plants trap up to 85% of airborne particles on the leaf surface so reducing dust, they absorb carbon dioxide and produce oxygen and can reduce wind speeds across a development
- Insulate against heat and sound - buildings with roof gardens lose 30% less heat in the winter, are cooler in the summer, and offer all year round sound insulation
- Economic benefits - green roofs extend the life of the existing roof fabric by up to 70%. Further savings are through increased insulation. They can enhance the re-sale value of a development
- Visual - can soften a development in a visually sensitive location, and forms part of and widens the green corridor network/green infrastructure when linked to other green open space provision within developments.

A vertical garden is essentially a living cladding system with many of the benefits of a green roof. With these gardens, plants grow on, up, or against a building's façade. Suitable plants include a wide variety of perennial and annual vines as well as espaliered trees.

A brown roof is a term to describe roofs that have been covered with substrate or loose material but have not been purposefully planted. Brown roofs are created primarily for biodiversity purposes and aim to recreate typical brownfield conditions through the use of by-products of the development of urban sites: brick rubble, crushed concrete, and sub-soils. Such roofs may naturally develop a habitat with spontaneous vegetation growth but the un-vegetated loose substrates can also provide habitats for a range of invertebrates and birds. Additional benefits can be closely linked to green roofs; reducing surface run-off, insulation and roof life extensions (economic).

Soil Protection

Healthy soils are vital to a sustainable environment and soils have a number of vital uses that can be taken for granted:

The six functions of soil

1 Support of ecological habitat and biodiversity - Soil has biological value in its own right. It is an important habitat and gene reserve for an enormous variety of micro-organisms and larger soil-dwelling animals.

2 Food and Fibre production - Soil is a growing medium for food, fibre, timber and energy crops, and forage crops that are the basis for livestock production. It stores nutrients and water, and supports root growth.

3 Environmental interaction - Soil is a crucial link between the atmosphere, geology, water resources and land use. It acts as a filter, attenuates and immobilises substances, and takes up, stores and releases atmospheric gases. Soil regulates water flow from rainfall to vegetation and groundwater, and influences river flows and flooding.

4 Provides a platform - Soil provides the foundation for building and other development. Natural landscapes reflect the different soil systems that they contain.

5 Provides raw materials - Soil holds billions of cubic metres of water and is a direct source of minerals and resources, such as brickearth, peat and topsoil.

6 Protecting cultural heritage - Soil stores and protects much of our cultural heritage, including archaeological remains.

Source: EA - The state of soils in England and Wales (2004)

Although soils are resilient, unsustainable practices are resulting in soils being lost, damaged or degraded. For a full understanding on how soil can be preserved, the Environment Agency should be contacted.

For new developments or refurbishments, the major issues of concern are in the construction phase. Soil will be subject to movement, storage, compaction and contamination, depending on construction methods. Therefore, careful management of construction activities can reduce the loss or damage of soils. Doncaster will require developers to address the following matters:

- Erosion of topsoil from site (rain related)
- Leaching of nutrients from soil (rain related)
- Removal of soil from site
- Contamination of soil during construction

8.5 Public art

Checklist Ref: 7.2 f, g, h
Doncaster Markets gateway at Sunny Bar

Our existing built environment contains many examples of public art including statues, sculptures, monuments, stained glass windows and designs that raise the environment above the average. There are many reasons why public art should be encouraged within new developments and within areas of public open space, these being:

- Public art enhances the physical fabric of the area and contributes to local distinctiveness
- Results in innovative high-quality works of art designed for a specific place or site
- Ensures a cultural legacy for future generations
- Provides employment for local artists and craftspeople

The Council's desire is to improve and enhance the built environment of Doncaster; developers are therefore encouraged to integrate public art within or within close proximity to focal points within a development or in areas of open space (ENV 63).

8.6 Access for all

Checklist Ref: 3.1 c

To ensure social inclusion, access to everyday services and buildings for all members of society has to be an important consideration. The introduction of the Disability Discrimination Act (DDA) aims to overcome the problem of discrimination which many disabled people face in existing buildings. The final rights of access came into force in October 2004 and aim to enable access to:

- Employment
- Access to good facilities and services
- Buying or renting land or property

Some aspects of allowing access are subject to specific building control standards in new buildings and extended buildings, but in regards of assessing a development by Doncaster's planning department, only developments that have provisions over and above normal requirements will be scored positively.

8.7 Designing out crime

Checklist Ref: 3.1g

There would be little point in creating new development if it aids in the growth of crime. For many years there have been links between the design of environment people pass through or live within, and the levels of crime that can be attributed. If an area fosters a high crime rate, then this will not create a safe and accessible environment and will undermine the quality of life of any residents or businesses. The image and desirability of an area would be negative, and it will become harder to attract new residents or investment.

Developers have to consider if they are designing out crime and through the Design and Access statements they can explain their decisions. As stated in Circular 01/2006, the layout section of the statement should explain and justify the relationship between buildings and public and private space within and around the site, and how these relationships will help to create safe and accessible environments. It should demonstrate how crime prevention measures have beenconsidered in the design of the proposal and how the design reflects the 7 attributes set out in SaferPlaces: The Planning System and Crime Prevention, these being:

- Access and Movement - Places with well-defined routes, spaces and entrances that provide convenient movement without compromising security
- Structure - Places that are structured so that different uses do not cause conflict.
- Surveillance - Places where all publicity accessible spaces are overlooked
- Ownership - Places that promote a sense of ownership, respect, territorial responsibility and community
- Physical Protection - Places that include necessary and well-designed security features.
- Activity - Places where the level of human activity is appropriate to the location and creates a reduced risk of crime and a sense of safety at all times
- Management and Maintenance - Places that are well designed with management and maintenance in mind to discourage crime in the present and in the future.

For further information on how to design out crime, contact the local Architectural Liaison Officer oran accredited architect or constructor then the UK Police sponsored website Secured By Design should be accessed. Contact details are at the back of this document.

Business Reasoning for Incorporating Sustainable Design Principles

By using the principles of Sustainable Development this will aid in future proofing businesses to the risks posed by climate change. These future impacts will have an influence on all businesses irrespective of size and monetary value; it has come to a point where these future impacts cannot be treated as a marginal issue. Therefore, it will be necessary for developers, businesses and their teams to address the impacts of climate change throughout their business management, this will be particularly relevant in the commencement of any new development, from buying land to completing the development and beyond.

Image is such an important aspect of businesses; it affects people's perception, either from acustomer aspect or from a recruitment perspective; it affects the reputation and therefore could impact on a businesses market share. By thinking ahead with business premises, and how this impacts on the surrounding environment. This will have a major influence on their perceived image.

As with all decisions, there will be opportunities and as well risks arising from change, these are listed overleaf in no particular order.

The opportunities and risks listed below are included to illustrate the potential benefits offered by the techniques outlined in this document. The exact nature and extent of the benefits will obviously vary from scheme to scheme and the details below are offered for guidance only.

Opportunities

Financial

Long term running costs, including insurance may be less and the future asset value higher.

Where finance is needed from long-term investors, taking a long-term view at the design stage can make more financial sense.

Risk Management

As climate change is a long-term problem that cannot be fully predicted, organisations will need to look further into the future (beyond 2050), as well as considering the impacts that can be predicted with greater certainty in the near future.

Staff retention

By adapting to climate change this can contribute to a positive perception of a business. Staff may have greater pride due to the building they work in, leading to increased retention, as well as giving a good impression to prospective employees.

In addition, having a more comfortable building to work in can improve productivity and reduce staff sickness.

Market differentiation

Sustainable designed buildings that are protected from climatic changes may be easier to sell or let and may command a higher price.

By positioning the organisation as a future thinking and reactive business to climate change, this will highlight an organisation's 'sustainable credentials'.

It presents an opportunity to attract new customers who also have an environmental consciousness to gain an edge over competitors.

Socially Responsible Investor (SRI) funds Investment decisions are moving away from solely having an economic bottom line; ethical and environmental considerations are becoming increasingly part of an investor's decision-making process.

Although the markets for specific SRI are still relatively small, it is increasing; this is demonstrated by the creation of new financial indexes (e.g. Dow Jones Sustainability Index (DJSI) and the FTSE 4 Good).

Risks

Financial

Failure to anticipate future requirements of climate change may mean that the development proves too expensive to run and even uninsurable.

This could have serious implications to the letting or selling of a development or property

Operational

Failure to have a building that can adapt to greater disparities in temperature, could lead to an environment that is too uncomfortable to work or live in.

This can have implications on staff productivity (decrease) and an impact on sickness rates(increase).

Legislation

Building regulations and standards are being raised constantly. By failing to take voluntary measures now, there is a risk that more expensive remedial work may be needed at a later date to ensure compliance as legislation comes into force.

Image / Reputation

A failure to incorporate principles that mitigate against climate change that then threaten the viability of a building development and/or land, may tarnish a corporation's image and brand for not having forethought.

Public opinion could become negative if the organisation's environmental and social policies are unacceptable.

Increased weather risks

Adverse weather conditions are increasing by 2-4% per year on households and property insurance accounts. Claims from storms and flood damages have doubled to over £6 Billion over the period 1998-2003, compared to the previous 5 years (www.abi.org.uk), the prospect is that this figure will grow in the future and will have effects over company buying and letting decisions.

Doncaster policies quoted

SENV 6

The Borough Council will seek to ensure a high standard of design in all new developments and redevelopments through the adoption and application of detailed development control policies and standards, supplementary planning guidance, and through the encouragement of good design.

ST4

The Borough Council will promote and seek to secure improved public transport services and facilities throughout the Borough in consultation with the South Yorkshire passenger transport authority.

ST3

Parking needs will continue to be met throughout the Borough, particularly within town centres and within new development as appropriate, balanced with the need to contain traffic movements, provide safe and attractive pedestrian environments and secure environmental improvements.

ST7

The Borough Council will seek to promote and encourage schemes which lead to better integrationof transport modes and interchange facilities.

SRL 1

The Borough Council will protect and where necessary enhance existing outdoor play space and amenity open space. Existing deficiencies will be identified and, where possible, land allocated for these purposes. Where appropriate, new public open space will be required as part of new developments.

SPU2

The development of renewable energy sources will be supported provided they do not have a significantly adverse impact on the environment.

ENV 25

Within conservation areas, as defined on the proposals map, new development including alterations and extensions to, and changes of use of, existing buildings will be expected to preserve or enhance the character or appearance of the area. Development will not be permitted if it would detract from the character or appearance of the area by virtue of its nature, height, density, form, scale, materials or design or by the removal of trees or other important landscape features. Outline planning permission will not normally be granted for proposals in conservation areas. The desirability of preserving or enhancing the character or appearance of a conservation area willbe a material Consideration when dealing with proposals for new development outside aconservation area which would affect its setting or views into or out of the area.

ENV 26

Within conservation areas the demolition of existing buildings will not normally be permitted.Consent will only be granted for demolition of a building if:
aThe building is currently derelict and is incapable of rehabilitation or the building does not make a positive contribution to the character or appearance of the conservation area; or
bThe removal of the building, and/or the proposed redevelopment of the site, would result in the preservation or enhancement of the conservation area. Redevelopment schemes will require approval prior to consent for demolition and will be required to be implemented immediately following demolition.

ENV 30

Listed building consent will not be granted for demolition of buildings or structures contained withinthe statutory list of buildings of special architectural or historic interest unless:

a The building is in a structurally dangerous condition and cannot reasonably be repaired; and

b The Borough Council is satisfied that every effort has been made to secure repair, reuse or alternative use through maintenance, grant assistance, or offer for sale or lease; and

c A satisfactory scheme for redevelopment is put forward; or

d In the case of partial demolition, the part to be demolished is not of architectural or historic interest and its removal would not adversely affect the principal listed building; or

e In the case of a curtilage building this is not of architectural or historic interest and its removal would not adversely affect the principal listed building.

ENV 31

The Borough Council will encourage the repair and restoration of listed buildings, particularly where they are at risk, through a variety of measures including offering advice, grant aid and, in exceptional cases of prolonged neglect by the owner, by issuing repairs notices, carrying out emergency repairs or compulsory purchase.

ENV 35

The Borough Council will seek to protect, enhance and promote the Borough's archaeological heritage.

ENV 44

The Borough Council will seek to protect and enhance networks of wildlife corridors and where possible, reinstate / create new wildlife corridors; Planning permission will not normally be granted for development which would have a significant adverse effect on the functioning of such corridors. Acceptable development within or adjacent to identified corridors should contribute to their operation through appropriate design, siting and landscaping.

ENV 59
In considering proposals for new development, the Borough Council will attach considerable importance to the need to protect existing trees, hedgerows, wetland habitats, watercourses and other natural landscape features, and will require that new developments do not cause unnecessary loss of trees, nor imperil trees by building works.

ENV 60
New developments involving significant construction work will normally be required to provide acomprehensive scheme of hard and/or soft landscaping (including tree and shrub planting) to the satisfaction of the Borough Council in terms of scope and design, quality of materials, planting techniques and arrangements for maintenance.

ENV 63
The Borough Council will encourage the provision of works of art in public places and as part of newdevelopments.

ENV65
Development, which would result in unacceptable levels of noise, air, surface water, underground water, or other pollution or nuisance, will not be permitted.

ENV 66
The Borough Council will seek to minimise light pollution. Details of any external lighting schemerequired as part of any new development should be submitted as part of the planning application. Applicants will be expected to demonstrate to the local planning authority that the scheme proposed is the minimum needed for security and working purposes and that it minimises potential pollution from glare and spillage, particularly to residential and commercial areas, areas of nature conservation importance, and areas whose open and remote landscape qualities would be affected.

ENV 69
Where development is proposed on land identified as contaminated as a result of previous land uses, developers will need to meet the following requirements:

a) planning applications should beaccompanied by detailed ground condition reports indicating, where appropriate,recommendations for remedial treatment:

b) a need to demonstrate that their proposals will notcause or increase pollution of watercourses and groundwater resources;

c) give a commitment thatspecified remedial treatment shall be undertaken prior to commencement or occupation asappropriate.

References

This document has been created through the searching of numerous information sources:

National Planning Guidance

PPS1 Delivering sustainable development
PPS3 HousingPPS6Planning for Town Centres
PPS9 Biodiversity and Geological Conservation
PPS10 Planning for Sustainable Waste Management
PPG13 Transport
PPS22 Renewable Energy
PPS23 Planning and Pollution Control
PPG24 Planning and noise
PPS25 Development and Flood Risk

Other Resource Guidance

Environmental Protection Act 1990

Sustainable Settlements: A guide for planners, designers and developers Local Government Management Board 1995

Greening the City, DETR 1996

Sustainable Residential Quality, DETR 1998 Planning for Passive Solar Design, DTI and DETR 1998

Daylighting Design in Architecture: making the most of a natural resource, BRECSU 1998

Natural Ventilation in Non-Domestic Buildings - a guide for designers, developers and owners - A good practice guide, DETR 1998

Energy-efficient Mechanical Ventilation Systems, DETR 1998

Photovoltaics in Buildings: A Design Guide, DTI 1999

A Better Quality of Life, DETR 1999

Countryside and Rights of Way Act (2000)

The Contaminated Land Regulations 2000

National Waste Strategy 2000

Sustainable Accounting in the Construction Industry, CIRIA 2002

Energy White Paper - Creating a low carbon economy (DTI 2003)

Water Act 2003

Combined Heat and Power for Buildings: A good practice guide, Action Energy 2004

Interim Code of Practice for SuDS, National SuDS Working Group 2004

Planning and Design Strategies for sustainability and Profit, Pitts A 2004

Planning for Renewable Energy Targets Yorkshire and Humber (GOYH 2004)

System integration of Additional Micro-generation SIAM (DTI 2004)

The Value of Public Space: How high quality parks and public space creates economic, social and environmental value, Cabe Space 2004

Disability Discrimination Act 2005

Does Money Grow on Trees? Cabe Space 2005

Biomass sector review for the Carbon Trust, Paul Arwas Associates, 2006

Low or Zero Carbon Energy Sources: Strategic Guide, ODPM, 2006

Soil, the hidden resource - Towards an Environment Agency Strategy for Soil Protection, Management and restoration - a consultation document, EA Building Regulations, ODPM

SPD - Landscape Guidance for Developments in Doncaster

SPD - Planning for Nature on Development Sites in Doncaster

English Nature Research Report 498 (green roofs)

Useful Organisations and Resources

General

Environment Agency, general enquiries
Tel: 08708-506 506 www.environment-agency.gov.uk

Flood Protection Association
Tel: 0870-2422340 www.floodprotectionassociation.org

Association for Environment-Conscious Building (AECB)
Tel: 01559-370 908 www.aecb.net

Construction Industry Research and Information Association (CIRIA)
Tel: 020-7222 8891 www.ciria.org.uk

Centre for Sustainable Construction, building research establishment (BRE)
Tel: 01923 664 462 www.bre.org.uk

British Standards Institution (BSI)
Tel: 020-8996 9000 www.bsi.org.uk

Green Register of Building Professionals
Tel: 020-7820 3159 www.greenregister.org

Best Practice Programme - offers FREE project consultation and advice
Tel: 01923-664 000 Email: Designadvice@BRE.co.uk

National Green Specification (NGS)
www.greenspec.co.uk

English Heritage (Yorkshire region) Tel: 01904-601901
www.english-heritage.org.uk

Department for Communities and Local Government, details of all planning issues and policies
www.communities.gov.uk/

Disability, details surrounding all disabled issues
www.disability.gov.uk

Institute of Lighting Engineers
Tel: 01788 576492 www.ile.org.ukLocal

Authorities Building Control Services
www.labc-services.co.uk

Association of Building Engineers
www.abe.org.uk

Royal Institute of Chartered Surveyors
www.rics.org.uk

RICS Building Control Forum
E-mail: bcforum@rics.org.uk

Secured by Design, the official police flagship for security and designing out crime.
www.securedbydesign.com/index.aspx

Energy

Energy saving Trust: energy saving for houses
Tel: 020-7222 0101 www.est.org.uk

National Home Energy Rating (NHER), UK's largest energy rating scheme
www.nher.co.uk

The Carbon Trust: The Carbon Trust provides FREE, practical advice to business and public sector organisations to help you reduce energy use
Tel: 0800-585 794 www.thecarbontrust.co.uk

Monodraught UK: Natural light and ventilation developer
Tel: 01494-897 700 www.windcatcher.com

Combined Heat and Power Association: Provides advice & access to grants
Tel: 020-7828 4077 www.chpa.co.uk

Heating & Ventilating Contractors' Association (HVCA)
Tel:020-7313 4900 www.hvca.org.uk

Energy Efficiency
Tel: 0845-727 7200 www.saveenergy.co.uk

South Yorkshire Energy Efficiency Advice Centre
Tel: 0800-512012 www.syeeac.co.uk

Green Prices, green energy in Europe
www.greenprices.com

Green Roofs, offers background & details on green roof architecture
www.greenroofs.com

Urban Roof Gardens, offers offer concept to completion advice and services on urban roof gardens and green roofs
www.urbanroofgardens.com

Living roofs, independent UK resource for green roof information
www.livingroofs.org

Forests Forever, provides information on sources of sustainable timber
Tel: 020-7839 1891 www.forestsforever.co.uk

Green Building Store, green building product suppliers
Tel: 01484-854989 www.greenbuildingstore.co.uk

Low Carbon Buildings programmeInformation on microgeneration technologies and national grant schemes
www.lowcarbonbuildings.org.uk/

Renewable Energy

National Energy Foundation (NEF)
Tel: 01908-665 555 www.natenergy.org.uk

Centre for Alternative Technology (CAT)
Tel: 01654-705 950 www.cat.org.uk

The Solar Energy Society
Tel: 01865-484 263 www.thesolarline.com

British Wind Energy Association (BWEA)
Tel: 020-7402 7102 www.bwea.com

Solar Trade Association
Tel: 01908-442290 www.greenenergy.org.uk

British Hydropower Association
Tel: 01202-886622 www.british-hydro.org

British Photovoltaic Association
Tel:01908-442291 www.pv-uk.org.uk

Renewable Power Association
Tel: 020-7747 1830 www.r-p-a.org.uk

Energy Crop Scheme – Organic and Energy Crops National Implementation TeamRural Development Service
Tel: 01270 754000
E-mail: organic-energy@defra.gsi.gov.uk
www.defra.gov.uk/erdp/erdphome.htm

Energy Crops Network
British Bio Gen
Tel: 020 7235 8474
E-mail: info@britishbiogen.co.uk
www.britishbiogen.co.uk

Water

CIRIA – Best Practice advice on Sustainable Urban Drainage Systems
www.ciria.org/suds

On-line guide to UK water services businesses
www.water-services.co.uk

Yorkshire Water
www.yorkshirewater.com

Severn Trent Water
www.stwater.co.uk

Pollution Control and Recycling

Institute of Acoustics
Tel: 01727 848195(0) 1727 848195
www.ioa.org.uk

Association of Noise Consultants
Tel: 01763 852958
www.association-of-noise-consultants.co.uk

Salvo Materials information Exchange For buying and selling used, second hand and unutilised construction materials
www.salvomie.co.uk

Care4air
South Yorkshire Clean Air Campaign
www.care4air.org

Aggregain
Web based one-stop source of practical information on the use of recycled and secondary aggregates
www.aggregain.org.uk

Constructing Excellence
Consortium of industry stakeholders that aims to increase standard of UK construction. Themes covered and supported, Sustainable Construction; Lean Construction; procurement routes and whole life costing.
www.constructingexcellence.org.uk

Eco Construction
Project to disseminate information about 'green construction'. The website holds guidance and case studies on utilisation of recycled and reclaimed products.
www.ecoconstruction.org

WRAP - Waste and Resource Action Programme
An organisation that has undertaken research into the UK's recycling sector, produced best practice guidance and also holds the online recycling toolkit for developers use.
www.wrap.org.uk

Contact details

Building Control

Building Control Manager	01302 734905
Group Surveyor West	01302 734908
Group Surveyor East	01302 734915
Development Control and Enforcement Manager	01302 734862
Area Team Manager	01302 734907
Major Projects Team Manager 01302 734885	

Major Projects Team

Senior Planner Urban Design	01302 734887
Landscape Officer	01302 734560
Trees and Hedgerows Officer	01302 734948
Ecologist Officer	01302 734924
Strategic Development Transport Unit	01302 734669
Senior Environmental Health Officer	01302 737570
Principal Pollution Control Officer	01302 737580
Design/Conservation Officer	01302 734950
Principal Highways Officer	01302 735115

Enquiries

Planning Assistants	01302 734871 or 734876

Notes

Notes

All our other documents can be accessed on the Doncaster Council website
www.doncaster.gov.uk
If you are unable to access this website or need any further information,
please contact Doncaster Council's Local Development Framework Team

Telephone: 01302 734419

Address: Doncaster Council
Local Development Framework Team
FREEPOST NEA 196
Doncaster
DN1 1BR

E mail:
LDF@Doncaster.gov.uk

Doncaster
Metropolitan Borough Council

www.doncaster.gov.uk

MM78-218