

Yorkshire & Humber Green Infrastructure Conference



Midland Hotel, Bradford – 23 March 2010

Rationale for this event

Natural England organised this conference to bring together people from across Yorkshire and the Humber to learn and discuss the principles and practice of Green Infrastructure. The intention was that delegates would leave the event inspired and better equipped to push forward with a wide range of green infrastructure initiatives. Our aim was to provide a better understanding of the concept of green infrastructure and how this approach can achieve multiple benefits - helping to develop the region's economy, improving our quality of life and addressing a range of environmental challenges.

Over ninety people attended including both members and officers from local authorities, representatives of a range of voluntary organisations and partnerships and people from a number of statutory agencies and regional bodies.

Purpose of this report

This report will be of interest not only to delegates who attended the event but also to those who were unable to attend. It contains summaries of the key points made by our speakers and workshop leaders and outlines how people around the region responded to these ideas, the problems which might crop up as we pursue the green infrastructure agenda and what needs to be done next. It also highlights where you can go for further information.

[Natural England's Green Infrastructure Guidance \(NE176\)](#), published last year, provides a comprehensive and accessible overview of green infrastructure - what it is, why it is of value, and how it can be delivered.



Morning session

What is green infrastructure?

Our opening speaker was **Lynn Crowe**, Natural England board member. Lynn reviewed Natural England’s definitions of Green Infrastructure:

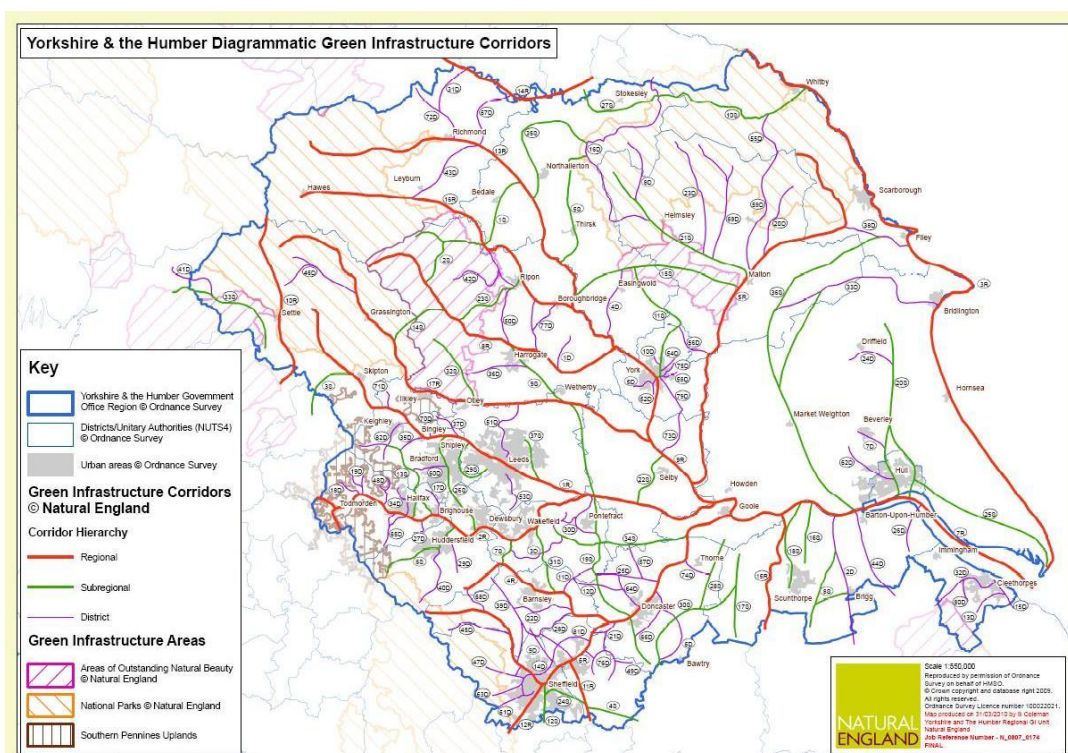
“Green Infrastructure is a strategically planned and delivered network of high quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefits for local communities. Green Infrastructure includes parks, open spaces, playing fields, woodlands, allotments and private gardens.”

Green Infrastructure is everywhere – as well as the land categories listed above it also includes rivers, wetlands, canals, special sites including nature reserves, farmland and any other open space that maintains natural ecological process. Lynne suggested that in Yorkshire and the Humber – given the way our urban and rural areas are often interlinked – it will not always be helpful to split the two when thinking about green infrastructure.

Effective delivery of green infrastructure has been shown to happen when proposals are based on high quality evidence, when green infrastructure is incorporated into plans and targets and as a result of partnership work which straddles administrative boundaries and different interest groups.

Green Infrastructure – Mapping the evidence base

David Fanaroff and **Jim Hemming** from Natural England told us about a two year project which has produced a strategic evidence base for green infrastructure across Yorkshire and the Humber. The evidence base draws on 600 different data sets obtained from diverse sources including local authorities, wildlife trusts and major landowners such as Yorkshire Water and the National Trust. Over 130 green infrastructure corridors were identified and were placed in a simple hierarchy based on fifteen green infrastructure functions. All the green infrastructure corridors have associated descriptions which include highlights of the key sites and functions of the corridors.



How to gain political support for green infrastructure

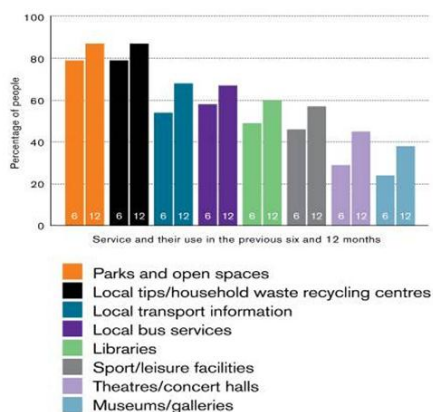
Anne Jaluzot from CABE Space discussed ways in which we can gain political support for green infrastructure. Careful choice of words can make a huge difference: the expressions “green infrastructure”, “ecosystem services” and “multi-functionality” for example may prove to be an initial obstacle for many audiences. To engage with political representatives our focus should be on the much more accessible reality on the ground – real manifestations of green infrastructure such as trees, rivers and nature reserves. Anne advised that we should focus on what is relevant to a particular place and how our projects can contribute to the well-being of the local electorate. Proponents of green infrastructure need to see the problems faced by a local area through local politicians’ eyes and identify the ways in which green infrastructure can help address these. One key task is to focus on the ways in which green infrastructure can help authorities meet targets set out in their Local Area Agreements. There are numerous good examples of how green infrastructure has been incorporated into policy and delivery with political support. Case studies from Los Angeles and Malmo where major green infrastructure initiatives have been developed were cited.

Anne drew our attention to a range of robust evidence sources demonstrating, for example, the large percentage of people who make use of parks and open spaces and the correlation between people being satisfied with their local parks and overall satisfaction with their council (see CABE space publication [Urban Green Nation – Building the Evidence Base](#)). A strong evidence base showing the relationship between public health (including mental health) and people’s physical environment has emerged over the last four or five years. This has been drawn together in [The Marmot Review - Fair Society, Healthy Lives – Strategic review of health inequalities in England post-2010](#)

USE?



Figure 1: Use of urban parks and open spaces in England



Almost nine out of 10 people use parks and green spaces, and they value them

Developing a green infrastructure vision and the Leeds City Region green infrastructure strategy

LDA Design is currently developing a green infrastructure vision and strategy for the Leeds City Region – which encompasses 11 of the 24 local planning authorities within Yorkshire and the Humber. **Neil Homer** (Director at LDA design) explained how strategy at this broad scale can best be developed and the way strategic projects – which might be above the radar of individual

districts – can add value to more local work. The city region strategy is currently at a draft stage but will be presented to the partnership's leaders' board in the near future. Neil showed us examples of how this sort of work could translate into changes on the ground drawing on LDA Design's previous work in Exeter. The strategy will include promotion of strategic investment programmes and strategic projects. These range from subject based initiatives such as one on wood fuel and others which have a geographical focus.

For further information see [Leeds City Region Green Infrastructure page](#).

Questions & Discussion

The questions and discussion session at the end of the morning session picked up on a number of the themes raised by speakers. There was concern over the focus on green infrastructure 'corridors' and the fate of areas outside these. This was answered by Natural England by saying that green infrastructure exists everywhere and the corridors are intended to highlight connectivity between sites. A question about whether trees and tree management was sufficiently stressed within the green infrastructure context was answered by Natural England by saying that trees are vital and are stressed within various projects such as [Trees In Towns II](#) and [No Trees No Future](#). There was some debate about the role green infrastructure can play in flood risk management this was answered by pointing to the Forestry Commission study, [Opportunity Mapping for Woodland to Reduce Flooding in the Yorkshire & the Humber Region](#). Concern was also raised about how the voluntary sector and other locally based interests can effectively engage with green infrastructure developments when their focus of concern (e.g. canals) run across administrative boundaries.

Green Infrastructure surgery

Over lunch CABE Space (Anne Jaluzot) and Natural England (David Fanaroff) hosted an informal session for councillors or those who work directly with them. Points covered included recognition that councillors will rarely have detailed technical knowledge and therefore require straightforward but nonetheless accurate briefings on the roles green infrastructure can play; the power of key statistics (e.g. "99% of people support this approach") and the way financial considerations will often be to the fore. Early engagement with councillors works best to get them on board. Councillors may be unaware of the way staffing and other limitations may constrain the extent to which green infrastructure can be implemented on the ground (for example, some local authorities do not have an in-house landscape architect). Councillors need to be kept in the picture about the realities of implementation and kept up to date with monitoring work which confirms what green infrastructure is delivering for the local area.

Afternoon session

The afternoon session was split in to five workshops, each running for two sessions, with delegates attending two of the five workshops.

Workshop 1: Health and green infrastructure

Roger French, who works with the Yorkshire and Humber Strategic Health Authority, told us about the NHS Forest, an initiative which seeks to deliver direct health benefits to patients and NHS staff by providing areas of woodland close to, or as part of, public hospitals and NHS buildings. This initiative plans to plant 1.3 million trees. It is funded largely through a shift in NHS grounds maintenance budgets from activities such as mowing to tree planting. Local sponsorship and Forestry Commission grants are also being explored and used. Most of the NHS estate is publicly accessible so there is no additional liability. Five pilot sites exist in Yorkshire and a national phase will see 75 sites per year for 3 years coming on board.

Caroline Emmerson from Natural England presented evidence carried out in Bristol linking poor health and proximity to greenspace. The headline finding is that, independent of income or social grouping, increasing distance from greenspace has a direct impact on levels of physical activity and obesity. For lower income groups this results in a significant increase in premature deaths. The Walking for Health Initiative being delivered by Natural England aims to create a fourfold increase in the number of people undertaking regular health walks. Particular groups of people are being targeted such as those suffering from obesity and heart disease.

More information on this topic can be found on the [Our Natural Health Service webpage](#) and is presented in a very readable PDF booklet for download, [Our Natural Health Service \(NE179\)](#).



Follow up discussion

It was suggested that it would be counter-productive to present green infrastructure as a panacea for all. Some people will remain indifferent to new provision and it will be necessary to identify the 'micro' barriers which prevent some from taking even gentle exercise. Green infrastructure needs to be seen as one solution alongside others (including indoor provision).

Participants felt that Local Strategic Partnerships would be well placed to play a lead role since health and well-being is a concern for a multitude of stakeholders. In practice the way forward might be for a number of bodies to make small inputs rather than one organisation to try and tackle the health / green infrastructure challenge on its own.

Resourcing will be difficult in the current economic climate. We must expect NHS funds to be under extreme pressure for at least five years and it is unlikely significant amounts of money will be focussed on this sort of work. Nonetheless Primary Care Trusts are central players and they need to become involved in these initiatives.

Local authorities need to consider the strong evidence base presented in this workshop as they prepare and update their development plan documents and sustainable community strategies. Local planning authorities are obliged (under PPG 17 - Planning for Open Space, Sport and Recreation – soon to be replaced by a new PPS "Planning for a Natural and Healthy Environment") to prepare open space strategies. These need to be expanded so they address not only open spaces but all types of green infrastructure.

In taking these ideas forward in Yorkshire and the Humber it was suggested that it was important to highlight how this sort of approach can yield health benefits both easily and comparatively cheaply. Engaging with the NHS can be difficult for outside agencies and it would be useful if a single initial point of contact could be established – possibly from within Regional Public Health groups. Finally it was suggested that in parallel with the NHS Forest

programme we should look again at how school grounds could best be used to serve the health needs of the wider community.

Workshop 2: Urban Green Infrastructure

Tom Butlin from the Mersey Forest presented a case study of the Liverpool 'Knowledge Quarter' – a £600m redevelopment programme in the heart of Liverpool. Mersey Forest mapped the existing green infrastructure of the site and then compared it to what was proposed at the initial master planning stage. They examined where the green infrastructure functionality was increasing and decreasing. The analysis proved that the development would have led to a net decrease in green infrastructure benefits. This was proved by using GIS mapping of the existing green infrastructure assets set against what green infrastructure would be left or enhanced after the development had taken place. As a result of successful lobbying the developers and the local authority amended the masterplan. This led to successful trade-offs between green infrastructure and built development, meaning a green grid was created with additional street trees and green roofs incorporated into the scheme. Even more significant will be the increase in green infrastructure functions which will now be achieved.

Follow up discussion

When working in complex urban environments it is essential that both local authorities and developers come to a sophisticated understanding of the green infrastructure rationale. Creative 'outside the box' thinking may then yield a range of design solutions (including for example sustainable drainage systems, green roofs and street trees).

Common obstacles include the prohibitive costs incurred if services or utilities need to be moved to accommodate street trees, concerns on the part of the police if CCTV sight lines are blocked, and difficulties which may occur when local authorities are locked into long term contracts which may no longer be fit for purpose. Quercus, a project in Lewisham, includes guidelines on street trees and working with the police.

Engagement with developers may be hindered when the benefits accruing from green infrastructure are seen to go to other organisations. Developers may find they are in effect subsidising water companies, the health service and other employers who benefit from a healthy workforce.

Delegates cited as good practice the way Sport England, the Environment Agency, English Heritage, the Highways Agency and Natural England have worked together on local authority strategies and eco-settlements¹ within the region. Other good practice examples include Bradford, with good cross-departmental working within the local authority; York, where the planning authority has held festivals to encourage engagement with the LDF process; and North Lincolnshire, with its 'In Bloom' competition held in each community. It was suggested that a national (or indeed regional) database of effective joint working would be of value.

Local planning authorities need to integrate green infrastructure across their Local Development Frameworks rather than dealing with it in a single development plan / supplementary planning document. The advent of Local Development Frameworks has greatly improved the available evidence base and this is making it easier to advocate green infrastructure projects. We need to ensure this evidence base remains relevant and is kept up to date.

In taking these ideas forward in Yorkshire and the Humber it was suggested that GIS and 3D visualisations such as fly throughs are powerful tools to help sell the concept, tapping into the aspirations and agendas of both residents and developers.

¹ The urban eco-settlement proposals put forward by the Leeds City Region Partnership have been seen by some as a more sustainable option than a free-standing eco-town.

Workshop 3: The Economic Value of Green Infrastructure

John Hopkins from Natural England led this workshop which built on the ideas and evidence presented in Natural England's recent publication, [No charge? Valuing the natural environment \(NE220\)](#), which is available as a PDF download.



“No Charge?” is underpinned by the concept of ‘ecosystem services’. This approach challenges the erroneous notion that improving the natural environment damages competitiveness and the economy. Instead – as the publication explains with support of a range of case studies – society needs to recognise the wide range of goods and services, (including food and water, flood defences and carbon storage) which the natural environment provides.

The report goes on to provide economic evidence for why investment in the natural environment is vital to support the wider economy and social objectives. It provides robust justification for cost effective solutions which can not only boost economic performance but can also save money and increase long term sustainability.

The jargon of ‘ecosystem services’ can be a barrier because it focuses on outcomes. The idea of ‘green infrastructure’ is easier because it is about things that can be done and changes we can make.

Follow up discussion

A number of issues were raised relating to the use of environmental economics to justify green infrastructure investment. Firstly many environmentalists are sceptical about the possibility of giving a monetary value to aspects of the natural environment and for many of these a ‘market’ does not exist (people are resistant to paying for ‘services’ that they perceive to be free – for example public rights of way, or landscape). Secondly while the benefits derived from natural environments are cross-sectoral, public institutions and commercial operations are strongly sectoral and generally incentivised by single issues. The third issue brought up in discussion was the way in which the economic agenda tends to be driven by short term social perspectives whereas the environmental agenda is necessarily long term.

It was acknowledged that this approach needs to be further developed and that it may not be possible to put an economic value on everything. It will not be useful on all sites and sometimes doesn't help at a local scale – where public perception and local politics may over-ride the evidence economics provides. Environmental economics is however a powerful tool and at a

national level can have a strong bearing on decisions. At a local and regional level policy-makers have yet to engage with this methodology.

It was agreed that the priority task in terms of environmental economics is one of advocacy and education. People will generally agree that the natural environment brings a wide range of benefits to society, but need to be better informed if they are to make decisions based on value. Money is one way of measuring human welfare and this works well when we are dealing with things which are easy to measure such as numbers of jobs created or secured, or area of land allocated to a certain use. Things become problematic when it comes to valuing things which are inherently unquantifiable. As an example of this it has been suggested that 90% of the benefit of Special Protection Areas in Scotland is in non-market goods. The problem is summed up in the maxim:

“Not everything can be counted, and not everything that can be counted counts”².



Workshop 4: Delivering Green Roofs

This workshop was led by Jeff Sorrill from the [Green Roof Centre](#) in Sheffield. Jeff focused on the way green roofs can contribute to green infrastructure, particularly in new development.

It is likely that within ten years or so there will be legislation that means green roofs are required on new developments. This may be either by specifically requiring green roofs or by imposing

² This statement is said to have been written on a poster which Einstein kept on the wall of his room at Princeton University

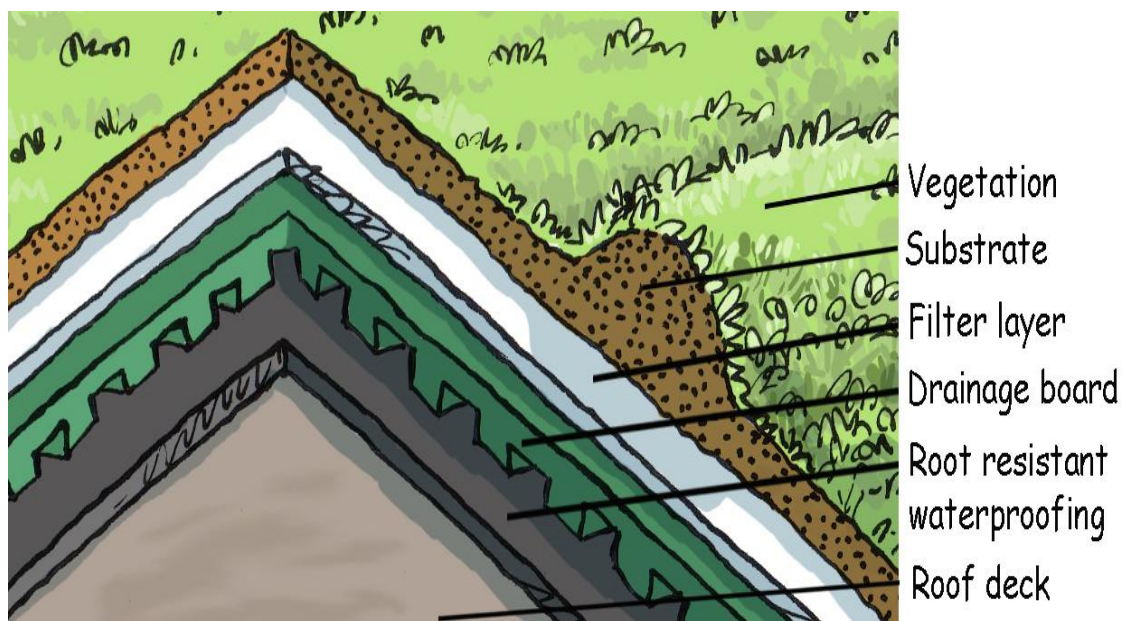
other conditions on developments which can be met by using green roofs (e.g. demanding high percentage green cover or requiring areas of new open ground/greenspace to offset areas which have been built on). Sheffield City Council already has a planning condition that all medium and large scale developments (over 1000m²) must have 80% green roof cover (leaving 20% for services, access etc.).

The benefit of green roofs include limiting the impact of climate change (through their cooling effect) while at the same time reducing energy use and carbon dioxide emissions. Green roofs also enhance biodiversity (and in Sheffield are the subject of a Habitat Action Plan), can reduce flood risk (by absorbing heavy rainfall), provide insulation and (depending on your point of view) contribute to the aesthetic character of a development.

Participants at the workshop reviewed barriers which were limiting wider adoption of green roofs. It is generally easier to create green roofs on new developments or when an existing roof needs to be renewed rather than to retro-fit a green roof to an existing structure. In many situations the single greatest barrier to the adoption of a green roof is financial. As a rough guide a straightforward green roof will cost about 15% more than ordinary roof. More sophisticated features – such as roof gardens with water features – can be many times more expensive. On the plus side incorporating a green roof has been shown to increase the lifespan of a roof compared to standard roofing material.

Other issues include maintenance and access (careful choice of substrate means that anchorage of plants is controlled and maintenance can be relatively low) and concerns about possible fire hazard (experience suggests fire risk is not a problem). One of the greatest barriers to more widespread adoption of green roofs stems from stake-holders' conservatism and lack of knowledge of the extent to which green roofs are now becoming mainstream. People also need to adapt to a new aesthetic which includes an acceptance of the way the appearance of a roof will change both seasonally and in the longer term as it matures.

Technical challenges include careful assessment of the load implications, which frequently require the services of a structural engineer. Pitched green roofs present additional problems but the technology to address these does exist, although costs are greater than with a flat roof. Finally some projects have had difficulties in terms of insurance and in terms of long term warranties on roof membranes. As green roofing becomes more common however these issues are becoming less of a problem, although it is still hard to get very long term warranties on roof membranes.



Workshop 5: Maximising Green Infrastructure in rural areas

This workshop was led by Rick Walker who is the head of the Countryside Service at North Yorkshire County Council.

To date the concept of green infrastructure has most frequently been used in urban rather than rural contexts but the multiple benefits brought by this approach are equally important in all types of areas. A common mistake is to over-emphasise the urban / rural divide and forget the commonalities which underpin all green infrastructure work and the links which green infrastructure creates across the rural-urban boundary. Often there will be as great a variation in green infrastructure potential between different rural areas as there is between a rural area and an urban area. Green infrastructure should be developed with sensitivity to different localities and this may result in different priorities dependent on the landscape character and potential of a particular place.

Notwithstanding the above, participants in the workshop identified aspects of the rural environment which merit a different focus. One obvious challenge is the way green infrastructure can sometimes be taken for granted within rural areas. It was suggested that it is often easier to recognise environmental deficits in urban areas than it is in rural areas but as one delegate suggested:

“Scratch beneath the surface and there are also massive land management problems in the rural environment”.

As in urban areas, it is important to emphasise that green infrastructure – ‘high quality green spaces and other environmental features’ – sometimes but not always overlaps with accessible green space. Many rural communities are comparatively isolated, and – perhaps as a result of the patterns of land ownership and the nature of the rights of way network - adjacent land may not be accessible. At the workshop we heard about a CPRE survey which indicated that disassociation of society from the natural environment. It found that the processes behind the delivery of services such as energy and water could be very high in rural areas surrounded by farmland but which also had a poor rights of way network.

The range of functions met by green infrastructure in rural areas may be skewed in a particular direction. Biodiversity is often the priority in rural areas but at the same time agricultural practices (including ‘horseyculture’) may have resulted in rural environments which are of little value to wildlife.

Different perceptions of rural areas may have a strong influence on the way we sell the concept of green infrastructure. Rural areas are frequently perceived to have a high intrinsic value and businesses – especially those which as a result of the internet can operate from any geographical location – often set up in rural areas because of this but without necessarily really engaging with the natural environment. Local people, by contrast, often have deep links with their areas. Decision makers will find life much easier if they get to grips with local perspectives, the way any given rural landscapes has changed over time and why.

The land based economy in rural areas is heavily influenced by a range of government incentives. These provide a different mechanism for the delivery of green infrastructure in rural areas, and forthcoming changes in the Common Agricultural Policy are likely to have a pervasive influence.

Developing Green Infrastructure in the Yorkshire & Humber region

If you or your organisation wishes to take part in developing Green Infrastructure you are welcome to join the Regional Green Infrastructure Consortium.

The Consortium has three objectives:

- Networking/Partnerships
- Developing Green Infrastructure thinking
- Project delivery

Membership includes regional organisations, the voluntary sector, local authorities, consultancies and academic institutions.

For further information please contact chris.marshall@naturalengland.org.uk.