DRAFT REVISED PLAN – AUGUST 2015
THE BUILT ENVIRONMENT

1. INTRODUCTION

Fox cub © Steven Falk

The built environment covers any man-made structure and includes domestic and industrial buildings, highways and roadside verges, walls, bridges and tunnels, underground sites, hard surfacing such as unit paving, bound materials, hard-core, tarmac, concrete and railway ballast and other structures such as statues, memorials, street lighting and electricity pylons.

The built environment is home to a wide range of plants, birds and mammals as it can form a wide variety of habitats relating to their material component, aspect, age and state of dilapidation. Species that would normally use natural features such as caves, cliffs, rocks and bare ground have adapted to use man-made sites, as natural sites have decreased; some species that have seen large population declines now depend upon the built environment for their survival. Trees and road side verges give visual enhancement to the built environment and deliver many ecosystem services, including reduced pollution, heat sinks and habitats for birds, mammals and invertebrates.

The kestrel *(Falco tinnunculus*), peregrine *(Falco peregrinus)* and black redstart *(Phoenicurus ochruros)* have joined the feral pigeons (*Columba spp*.) on ledges of buildings, which mimic cliff habitats, and swallows (*Hirundo rustica*), house martins (*Delichon urbica*) and swifts (*Apus apus*) also use buildings instead of their traditional cliffs. The swift has declined significantly over the last decade with one contributory factor being the loss of breeding sites in roof spaces, through repair work and new fascias. Pipistrelle bats (*Pipistrellus spp.*) often form roosts in modern buildings including tower blocks, rather than hollow trees and have suffered for the same reason; both of these declines can be easily rectified through the provision of nest boxes. The fox (*Vulpes vulpes*) has become a common sight in our cities and otters (*Lutra lutra)* have returned to many cities that have a waterway. Some species that use the built environment are regarded as pests, such as rats and cockroaches, and attempts are often made to try and control them, However most species do not cause damage or disturbance and should be tolerated or even encouraged.

Walls can support characteristic plant species such as ivy-leaved toadflax (*Cymbalaria muralis*) and many ferns and mosses. More than 600 species of lichen have been recorded in the built environment, walls and other surfaces being frequently covered with their multi-coloured growths; the older the wall and the less it is disturbed, the richer the lichen flora. Many invertebrates are associated with walls including spiders, beetles, wasps and bees.

It is important that the management of existing buildings and built landscape takes account of wildlife and that new development is built with biodiversity in mind. New developments, large and small can have a significant effect on wildlife and on the ability of people to experience and enjoy nature.

The biggest opportunity for enhancing biodiversity and creating new habitat in the built environment is by 'urban greening'. Through the use of green roofs, green walls, ecological landscaping and artificial nest sites, and the incorporation of some types of Sustainable Urban Drainage Systems (SUDS), a range of different habitats supporting a wide range of species can be created. These elements will make urban areas permeable for wildlife and will form an important part of our green infrastructure. They can also play a useful role in connecting existing areas of habitat and supporting rare and protected species, as well as provide a broad range of other benefits, including reducing rainwater run-off, increasing energy efficiency and provision of local cooling.

With up to 60% of vertebrates and 30% of invertebrates nocturnal, the rapid spread of artificial light has dramatically disrupted the natural day/night regime of many organisms, affecting behaviour, reproduction, mortality, movement, foraging and the composition of communities. The regulation of night time lighting in UK is fast becoming an option with increasing financial pressures and several different approaches are proposed:

- maintaining unlit areas
- reducing light trespass, i.e. only directing it where required
- dimming or partial night lighting
- changing the spectra by avoiding the use of white and blue light
- promoting wider understanding of the problem by identifying people who will pioneer light management in their community (Gaston et al. 2014).

The urban stretches of canals, roads and railways are important parts of this habitat plan as well as gardens and traditional brownfield sites; these habitats are covered in more depth in the other action plans.

The management of urban trees has been explored at a Tree Council conference in 2014. To establish a benchmark for urban tree diversity, it was advised that the managers of urban trees should use the following guidelines:

- no more than 10% of any species,
- no more than 20 % of any genus,
- no more than 30 % of any family.

2.	OBJECTIVES	TARGETS
Associated Action Plans are: '*Churchyards & Cemeteries'*, '*Open Mosaic Habitats on Previously Developed Land', 'Canals'*, *'School Grounds'*, '*Gardens*', '*Otter*', *'Hedgehog', 'Water Vole'* and '*Bats*'		
PLEASE CONSULT THE '***GENERIC HABITATS'*** ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR OBJECTIVES COMMON TO ALL HABITAT PLANS		
A.	**Conserve the biodiversity elements within the existing built environment.**	**ongoing**
B.	**Create new opportunities for biodiversity in and around the existing and new built environment.**	**ongoing**

3. NATIONAL BAP OBJECTIVES & TARGETS

This habitat type is referred to in the dual UK Broad Habitat BAP: Built up areas and gardens**:** '*This type includes urban and rural settlements, farm buildings, caravan parks and other man made built structures such as industrial estates, retail parks, waste and derelict ground, urban parkland and transport infrastructure. It also includes domestic gardens and allotments. This type does not include amenity grassland which should be included in the "Improved grassland" broad habitat type.*'

It is also a part of the UK Broad Habitat Urban BAP: *Urban wildlife habitats include buildings and hard surfaces but for the purposes of this Habitat Statement they are defined as greenspaces and the associated ecological niches found within built up areas. Greenspaces can be divided into four distinct categories:*

- *Remnants of ancient natural systems, such as woodland, wetland, freshwater and estuarine.*
- *Pre-industrial rural landscapes*
- *Managed greenspaces*
- *Naturally seeded urban areas or industrial sites such as demolition sites, disused railway lands or unexploited industrial land'*

Elements of the habitat are covered by the UK Priority Open Mosaic Habitats on Previously Developed Land BAP (Joint Nature Conservation Committee, 2007) for which the targets and objectives may be seen online. The overall aim for the UK is 'no net loss'.

4. CURRENT STATUS

The built environment can be found across the UK. It is concentrated in lowland areas with most major towns and cities situated next to the coast or rivers. Built environment features such as roads and railways connect almost all man-made structures into a nation-wide network. The built environment is a major and growing part of the modern landscape.

The exact geographic area covered by built environment in Warwickshire, Coventry and Solihull has yet to be determined.

The Commission for Architecture and the Built Environment was dissolved in 2012, however its work has been archived online and still provides inspiration relevant today.

4.1 Legal and Policy Status

No building or structure is currently protected by any statutory or non-statutory wildlife designation. It is probable that few, if any buildings would meet current criteria for designation. The demolition of buildings and other structures does not always need planning permission so the retention of buildings and other examples of the built environment are not necessarily regulated by the planning system. New buildings and structures usually require planning permission, as does alteration of existing buildings.

Listed buildings receive some protection from the Planning (Listed Buildings and Conservation Areas) Act 1990. Such buildings require 'Listed Building Consent' before they

can be destroyed or altered. Buildings in Conservation Areas also require planning permission for complete demolition. However, relatively few buildings and structures are protected by this legislation. Complying with legal requirements relating to public safety or dangerous structures may threaten important sites.

Some species using the built environment are in decline and are protected by law. European and UK protected species (e.g. bats) are found within the built environment as well other species considered at risk and listed in the Red Data Book and RSPB red and amber lists. Bats often roost in buildings and their roosts are fully protected under Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations,1994. The Wildlife and Countryside Act (1981) gives very full protection to bats because of their special requirements for roosting. It is also illegal intentionally to damage, destroy, or obstruct access to any place that a bat uses for shelter or protection, or to disturb a bat while it is occupying such a place. Bats often return to the same places year after year and so roosts are protected even if there aren't bats there all the time. Natural England must be informed before anything is done that would affect bat roosts.

Any proposals requiring planning permission that could affect a protected species require information on these species as a material consideration within ODPM Circular 06/2005, which is still applicable within National Planning Policy Reform.

A wide range of species and habitats are protected under international and domestic laws, including the Wild Birds Directive (1979), the Wildlife and Countryside Act (1981), the Conservation Regulations(1994) and EC Habitats Directive (1992). Protection of sites is afforded nationally through Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) and Local Nature Reserve (LNR) statutory status. Other sites are offered recognition of their value through Local Wildlife Site status (LWS), Local Character Areas and identified Landscape Scale Areas. The National Planning Policy Framework (2012) chapter/section 11 states conditions with regard to any development negatively affecting biodiversity, including protected sites, ancient woodland and other irreplaceable habitats (paragraph 118). The Wildlife & Countryside Act and schedule 2 of the Conservation of Habitats & Species Regulations 2010 make it an offence to intentionally kill, injure, take, possess, sell, buy or transport a range of species.

4.2 Current Factors Affecting the Habitat and associated species

- **Lack of awareness** of the presence and importance of the habitats and species within the built environment.
- **Lack of biological information** on the built environment - comparatively little is known about the built environment compared with more recognised habitat types. The requirements of many 'urban' species are poorly understood and options for management are unclear.
- **Lack of information on the location** of ‘urban’ species - until information is available it is difficult to address the conservation needs of this habitat.
- **Disturbance, destruction and change of the habitats** within the built environment - demolition, redevelopment and disturbance are typical within the urban environment. Many of the characteristic plants and animals of the built environment are tolerant of disturbance; however, others are not and

conservation effort must be targeted at the vulnerable species. Many sites become occupied by wildlife when the human use of the building has finished, but frequently this is only an intermediate stage before the demolition of the buildings and redevelopment of the site.

- **Removal of lichen, fern and moss growth from old structures -** the age of lichen is often underestimated and they provide an historic timeline and pollution indicator.
- **Lack of a co-ordinated approach** to the protection and enhancement of habitats and associated species within the built environment - many species, particularly birds and mammals, have habitat needs which extend over numerous landscapes. In addition many migratory species traverse and occasionally roost in urban areas. In urban areas land is owned by many different people, this makes effective management for wildlife difficult.
- **The impact of climate change** is heightened in urban areas due to increased heat island effect, and increased surface water run-off and localised flooding, with higher and more frequent rainfall.
- **Loss of mature street trees** and reduced spaces for tree pits due to loss of front gardens for car parking and increasing number of drives is reducing the cooling effect of traditional street trees. In addition the impact of invasive non-native pests and diseases on trees is increasing with global transport**.**
- **Impracticality of protecting urban habitats** - retention of certain built habitats would sometimes prevent the proper maintenance of buildings and structures or the effective economic use of land.
- **Pollution –** many sites are subject to almost constant human disturbance, including noise, air, soil and light pollution. Many lichens are very sensitive to air pollution by sulphur dioxide from the burning of fossil fuels. Surface water run-off is often contaminated with oil or salt from roads that can affect the plant species that are able to grow. Insects also may not tolerate air pollution therefore fewer insect eating birds are found in built up areas. Former industrial sites and nearby pools and watercourses may have heavy metal contamination. However, the numbers of footman moths (*Arctiidae, subf. Lithosiinae),* are increasing with the improvement in air quality; they are good indicators of air quality as their caterpillars feed on lichen.
- **Invasive non-native species** - can be a problem in urban areas as they displace native species.
- **Trapping of amphibians and small mammals in gulley pots below drain gratings –** can be reduced by used of modified kerb stones – with a recess providing a pathway between the kerb and the grating – allows animal to follow the kerb line without falling in the grating. (British Wildlife June 2014 vol. 25, no 5)
- **Leaching from closed landfill sites** of pollutants, e.g. ammonium, into watercourses (NERC report, 2014)

4.3 10-point Action Plan for enhancing the Built Environment for wildlife

Tell people what you are doing by displaying information wherever possible so that they can see and understand the importance of the work.	
1.	**Install a pond** wherever possible in new developments **- with several depths** and mud from an established pond to kick-start the nutrient recycling process. Make sure that amphibians can get out with a **few rocks or slabs at the edge** and **a ramp for hedgehogs**. Plant **shrubs for dragonflies** to perch, 2m from pond to avoid shading.
2.	**Help for hedgehogs -** promote the retention and use of **native hedges and trees** as plot dividers rather than walls or fences to create soft landscaping and give permeability in new developments. M**ake fencing 'permeable'** by creating gaps in panels and bases to allow animals to roam between gardens.
3.	Install **bird and bat boxes** - in existing and new buildings (avoiding lit areas) and in retained trees in new developments; encourage residents to **monitor their use**. Count bats emerging from their roosts at dusk. Avoid disturbing nesting birds during monitoring.
4.	**Trees and shrubs** - plant **native species, including berry bearers,** in addition to ornamentals in new developments. A**lder buckthorn** is the food plant of the brimstone caterpillar. **Create green walls** with mosses, ferns and flowering plants.
5.	**Reduce mowing -** in regularly mown areas, do **not mow too often or too short** to allow plants like self-heal, plantains and bird's foot trefoil to flower. **Aim to mow every 2-3 weeks,** always **removing cut material** to reduce nutrient levels and prevent shading of flowers. Allow **wildflower areas** to develop, cutting once between mid. Aug.– mid. Sept. to allow seedling and help invertebrates.
6.	**Bat and bird roosts -** roof repairs and replacements of soffits can remove access points into a building for bats and birds (such as swifts, house martins and starlings) and result in the loss of roosting and nesting sites. Contact the Bat Conservation Trust for free advice on how to ensure bats can return to their roost following building work. If you have nesting birds, leave a gap of 50 x 70mm between the soffit and the wall to allow birds access back into the soffit after work.
7.	**Look after trees - avoid damaging bark** when mowing and strimming around all public trees by installing bark protectors. **Retain mature and veteran trees,** and **plant new native species of trees** to ensure replacement for the future. Keep **some ivy** - it provides nest sites, summer food for holly blue caterpillars, winter nectar for insects, berries for winter bird food - and it does not kill trees.
8.	**Care for lichens - t**hey take many years to grow and may be the only example in the county. Only clean those parts of **gravestones and memorials with inscriptions,** with water and a soft brush. Leave lichens on **dry stone walls, church buildings, old gate posts and fences;** if replacing woodwork, retain some old sections from which recolonisation to the new wood can occur.
9.	**Reduce light pollution -** avoid illuminating **access points into buildings for bats or birds**, such as around the eaves or the ridge tiles, as increased light levels could deter them completely or significantly alter their emergence times and activity levels. P**oint lighting down and away from any hedgerows or trees** where nocturnal animals may forage to ensure they have a dark, undisturbed route. Install baffles to **reduce light spread.**

10.	**Improve energy efficiency -** consider the use of measures for your buildings to help **reduce our contribution to climate change** and its resultant impact on biodiversity. This could include a **green or blue roof** on large developments, insulation or something as small as a **water butt**.
Encourage residents to send their wildlife records to Warwickshire Wildlife Trust, Butterfly Conservation Warwickshire, and Warwickshire Biological Record Centre.	

5. LOCAL ACTION

- It is currently unknown as to the extent of work relating to biodiversity in the built environment due to lack of co-ordination. Work is being carried out through individual groups, organisations and companies and, although some of these projects have been publicised, many will have gone unnoticed.
- The Wolseley Sustainable Building Centre (WSBC) in Leamington Spa is the UK's first commercial showcase for sustainable building products and construction methods.
- 'Green roofs' are known to exist at Severn Trent, Coventry, and the Engineering building, Coventry University.
- A 'Green wall' has been created at New St. Station, Birmingham
- Coventry City Council (2014) has installed trial street light reduction and wildflower verges on the A45.
- Warwickshire Wildlife Trust ran a Peregrine Watch 2013-14 at Holy Trinity Church, Coventry, and a further Watch is planned to take place in Warwick.
- Warwick University has installed eco buildings and measures to reduce light pollution.

6. PROPOSED LOCAL ACTIONS

ACTION	Lead	Partners	By
PLEASE CONSULT THE ***'GENERIC HABITATS'*** ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR ACTIONS COMMON TO ALL HABITAT PLANS			
Policy, Legislation & Protection			
PL1. Maximise biodiversity gains from new developments by incorporating biodiversity strategies, policies and guidance notes into local plans.	WCC	LAs	ongoing
PL2. Include an environmental statement within Neighbourhood Plans for the conservation of	WCC	WWT HBA	ongoing

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biodiversity in the built environment.			
Site / Species Safeguard & Management			
SM1. Implement the national requirement for Sustainable Urban Drainage Schemes (SUDS) in all new housing schemes of more than 10 dwellings as well as commercial and industrial developments, using the opportunity to create new habitats.	WCC	NE EA WWT LAs	ongoing
SM2. Take opportunities through development to deliver conservation measures to improve the condition of existing buildings and built structures used by protected or relevant Biodiversity Action Plan species e.g. the conversion of redundant tunnels as bat hibernacula, installation of green roofs, bird and bat boxes (**see RM1**).	WCC	NE WBG LAs	ongoing
SM3. Conserve existing bat roosts and bird roosts on buildings, in particular those of birds of prey, swifts, house martins and starlings.	HOs	BCT RSPB BTO WWT	ongoing
SM4. Conserve as much as possible of lichen, fern and moss growth on walls and memorials, e.g. only clean where necessary.	LAs	CDEG PCCs	ongoing
SM5. Incorporate features of use to wildlife in construction of new buildings, including bird and bat bricks, green walls, green and blue roofs, bird of prey platforms.	WCC	Devs	ongoing
SM6. Use trees, shrubs and flowering plants of local provenance in landscaping and road schemes.	WCC	HAuths HAg	ongoing
Advisory			
A1. Signpost advice for developers, LPAs, and occupiers on retaining and encouraging lichens, mosses, ferns and flowering plants on walls and memorials, and on creating green walls (**see 10 point plan – section 4.3).**	LBAP	NE WWT LAs Devs	ongoing
A2. Signpost advice for developers, LPAs, and occupiers on the conservation of existing bat and bird roosts on buildings, particularly those of birds of prey, swifts, swallows, house martins and starlings, during maintenance and development (**see 10 point plan –**	LBAP	WBRC BTO RSPB WBG CDEG LAs	ongoing

ACTION	Lead	Partners	By
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section 4.3).			
A3. Signpost advice to land and property owners wishing to establish the current bat usage of their buildings.	WBRC	LOs WBG	ongoing
A4. Promote the retention and use of native hedges and trees as plot dividers rather than walls or fences to create soft landscaping and give permeability (**see 10 point plan – section 4.3).**	LBAP	NE WCC	ongoing
Research & Monitoring			
RM1. Identify and record location of habitats within the built environment used by protected or relevant Biodiversity Action Plan species, e.g. bats, great crested newt; make available to Local Planning Authorities (LPAs).	WBRC	WWT WBG WART WFG LPAs	2015
RM2. Undertake a survey of lichens, initially within 5 urban sites a year e.g. war memorial, old walls, old public buildings.	WBRC	BLS PCCs	annually
RM3. Investigate monitoring of the area of green roof in the sub-region, using aerial and infrared photography.	HBA	WCC	ongoing
RM4. Include monitoring of bird and bat boxes installed in new developments in section 106 agreements (Town & Country Planning Act 1990)**(see SM3)**	WCC	BTO WBRC Devs	ongoing
Communications and Publicity			
CP1. Include a speaker on best practice in protecting biodiversity in the Built Environment at least every 5 years for planners and elected councillors.	LNPIG	WCC WWT	2015, 2020
CP2. Work in partnership with a local green roof installer to provide a training course aimed at local contractors to install small scale green roofs / walls (new and retro-fit).	CSG	Unis Uni of Sh'd	2020
CP3. Hold a workshop on the identification of lichens.	WWT	BLS	2015

Abbreviations: **BCT** – Bat Conservation Trust, **BLS –** British Lichen Society **BTO –** British Trust for Ornithology, **CDEG –** Coventry Diocesan Environmental Group, CSG **– Core Steering Group, Devs –** Developers**, EA –** Environment Agency, **HAuths –** Highway Authorities, **HBA** – Habitat Biodiversity Audit partnership, **HOs** – Homeowners, **LAs** – Local Authorities, **LBAP** – Local Biodiversity Action Plan partnership, **LCs** – Local Councils, **LNPIG** – Local Nature Partnership Implementation Group, **LOs –** Land owners, **LPA** – Local Planning Authority, **NE** – Natural England, **PCCs** – Parochial Church Councils, **RSPB** – Royal Society for the Protection of Birds, **Uni of Sh'd** – University of Sheffield, **WART** - Warwickshire Amphibian & Reptile Team, **WBG** - Warwickshire Bat Group, **WCC** – Warwickshire County Council,

7. PROGRESS WITH ACTIONS

From 2015–2020 there will be a rolling programme of reporting on progress, of 10 action plans per year with an annual summary of results. Results will be entered onto the national Biodiversity Action Reporting System BARS. Progress with this plan up to 2008 can be seen at www.warwickshirewildlifetrust.org.uk/LBAP.

8. BIBLIOGRAPHY

Kirby, P. (1992). Habitat management for Invertebrates: a Practical Handbook. RSPB.

Natural England (1994) Human well-being, natural landscapes and wildlife in urban areas. A review (ENS22) exploring the issue that much conservation work is directed by objective scientific criteria such as the maintenance of biodiversity.

DoE. (1995). Species of Conservation Concern in Biodiversity. The UK Steering Group Report.

Gilbert, O. (1996) Rooted in stone: the natural flora of urban walls. English Nature . Peterborough, pp.21-22.

Sue Everett, S. (2007). British wild plants for wildlife schemes. British Wildlife, vol.18, no.3:161-168.

Falk, S.J. (2009) Warwickshire's Wildflowers - provides habitat-specific species lists, and explanations of habitats from a botanical viewpoint.

Treweek Environmental Consultants (2009) Regional Spatial Strategy (R.S.S.) Phase 3 Regional Habitats Targets Review, Technical Report pp.71-94, prepared for the W. Midlands Regional Assembly.

Lawton,J.H. (2010) Making Space for Nature: a review of England's wildlife sites and ecological network. Report to Defra.

DEFRA (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services.

Environmental monitoring in Natural England (2012) A report describing the main themes being delivered within Natural England's Integrated Monitoring, programme, illustrating this with examples of surveys we manage and detailed case studies, including urban parks, paths, cycleways, bridleways and playing fields.

RSPB (2013) State of Nature – a stocktake of of all our native wildlife by 25 wildlife organisations.

HBA (2013) The State of the Habitats of Warwickshire, Coventry and Solihull.

Gaston, KJ., Gaston, S., Bennie, J. and Hopkins, J. (2014) Reducing the impacts of artificial light. British Wildlife, vol.25 no 5, pp. 332-339.

David Goode, D. (2014) Nature in Towns and Cities (Collins New Naturalist Library, no.127)

9. FURTHER INFORMATION

UK Urban Biodiversity Action Plan (1995-1999 now archived)

Biodiversity Planning Toolkit (2001) - a new online resource to help incorporate biodiversity and geodiversity into the planning system and new development.

Habitat Biodiversity Audit (HBA) for Warwickshire, Coventry & Solihull – mapping data set and associated information. Phase 1 (JNCC) 1996-2002 and Phase 2 (Local Wildlife Sites) ongoing.

Buglife - the Invertebrate Conservation Trust (2004) – provides Information on the habitat-management requirements of key invertebrates.

Natural England (2006). Environment quality in spatial planning – incorporating the natural, built and historic environment, and rural issues in plans and strategies.

RSPB (2006). Healthy, wealthy and wise - Sustainable communities: creating the right environment.

British Trust for Ornithology (2007). 'Creating and managing habitats for birds on and other wildlife on waste water treatment sites' and 'Managing habitat for birds and other wildlife in urban green spaces' – guidelines available online.

CABE (2009) – Grey to Green (Archived) - reveals the urgent need for more people, with the right skills, to manage the living landscape of our towns and cities.

CIRIA (2007) Building Greener Project - offers help with introducing complementary wildlife features such as invertebrate boxes and the use of green roofs and walls.

World Business Council for Sustainable Development (2013) A report: Eco4biz, Ecosystem services and biodiversity tools, provides an overview of approaches for companies wishing to measure, manage and mitigate their impact and dependence on nature.

RSPB / Royal Town Planning Institute / Chartered Institute of Ecology & Environmental Management (2013) Planning Naturally - a report that engages with planning systems in the UK and abroad, in order to protect important wildlife sites and to promote biodiversity in development.

Defra / NE (2013) Green Infrastructure's contribution to economic growth: a review carried out by Sheffield Hallam University.

Neighbourhoods Green - an ODPM - funded project to improve our green spaces Flora Locale - promotes the restoration of wild plants and habitats for the benefit of biodiversity, landscapes and people in town and countryside.

Plantlife – carries out plant species and habitat conservation, owns and manages nature reserves, campaigns, and raises awareness through education.

Parish Wildlife Map Toolkit – How to make a Wildlife Map

Green roof activities in Sheffield - originated with some small research programmes in 1999. Since then, research activity has increased dramatically. Sheffield City Council became very active in policy development and promotion of green roofs. Groundwork Sheffield is a powerful green roof advocate, and the city now contains a number of landmark green roof projects.

SUDS - the provision of sustainable drainage systems (Suds) will be a requirement for all new housing schemes of more than 10 dwellings as well as commercial and industrial developments from 6 April 2015.

10. CONTACT

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