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factsheet 6

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green infrastructure glossary

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The importance of green infrastructure to towns and cities all over Europe is a well articulated fact. In contrast to grey, constructed infrastructure that often serves a single purpose, green infrastructure usually performs multiple functions and offers a significant range of social, economic and environmental benefits, including enriching nature's capacity to deliver valuable ecosystem services and supporting climate change adaptation and mitigation. The use of green infrastructure offers a resource-efficient and more sustainable development process, encouraging use of space in a smart and integrated way.

To aid understanding of the language commonly used in green infrastructure and planning, this Factsheet defines key green infrastructure terms and sets out brief summaries of GI actions and interventions that can be undertaken in both urban and rural contexts.

Green infrastructure

Green Infrastructure (GI): A strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services, in either urban or rural settings. GI in urban areas can be made up of many different features, including parks, gardens and green roofs. These green urban elements can serve as part of an interconnected network and deliver multiple ecosystem services.[1]

Green infrastructure terms

Biodiversity: The variation among living organisms in all environments, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part. It includes diversity within and between species, and between ecosystems.[2]

Climate change: The large-scale, long-term shift in weather patterns and average temperatures across the world. Humans have contributed to the release of greenhouse gases (most notably carbon dioxide) into the air since the mid-1800s – causing temperatures to rise and resulting in permanent changes to the climate, affecting people and ecosystems, through, for example, the flooding of coastal regions and damage to marine ecosystems.[3]

Climate change adaptation: The process of adjustment to actual or expected climate and its effects. In human systems, it aims to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects.[4]

Climate change mitigation: Human intervention to reduce the sources of, or enhance the sinks for, greenhouse gases.[5]

Conservation: The protection, improvement and use of natural resources in line with principles that assure the highest economic or social benefits for people and the environment, now and in the future.[6]

Ecosystem: A community of living organisms – animals, plants, fungi and micro-organisms – and their physical environment that interact as a functional unit.[7]

Environmental Assessment (EA): A procedure carried out to ensure that the environmental implications of decisions are considered before decisions are made. EA can be carried out for individual projects, such a dam or airport, on the basis of the Environmental Impact Assessment (EIA) Directive, or for public plans or programmes, on the basis of the Strategic Environmental Assessment (SEA) Directive. The common principle of both directives is to ensure that plans, programmes and projects likely to have significant effects on the environment are made subject to an environmental

assessment, prior to approval or authorisation. Consultation with public is a key feature of an EA procedure.[8]

Land use: The social and economic purpose for which land is managed (housing, agriculture or transport, for example).[9]

Natural capital: The extension of the economic notion of capital to environmental good and services. Natural capital is the stock of natural ecosystems that yields a flow of valuable ecosystem goods or services into the future.[10]

Sustainable drainage system (SuDS): A natural approach to managing drainage in and around developments. SuDSs work by slowing and holding back the water that runs off from a site and allows natural processes to break down pollutants. There is a variety of components to SuDSs, including those regarded as 'green', 'soft' or 'landscaped' which use vegetation. However, not all SuDSs use GI, with some 'grey' and 'engineered' approaches being used.[11]

Sustainable transport: Transport centred around more environmentally friendly ways of travelling, such as walking or cycling. Providing sustainable transport options and ensuring that they are most accessible and affordable methods of travel can help change the travel behaviour of local populations.

Town planning: The interdisciplinary process of evaluating, organising and controlling current and future development and the use of land and its resources. It is a technical, political and participatory process which includes an overall ecological evaluation of specific uses, as well as the evaluation of social, economic and physical contexts.[12]

Vulnerability: The degree to which a system is susceptible to, and not able to cope with, the adverse effects of damage or harm. Vulnerability can refer to climate change effects and in such cases depends on the nature, scale and rate of climate change events, and on the system's sensitivity to, and its adaptive capacity in response to, such events.[13]

Green infrastructure actions and interventions

Allotment: An area of land leased from either a private or local authority landlord for the use of growing fruit and vegetables. The land may also be used to grow ornamental plants and keep animals such as hens and bees. Although sizes vary greatly, in recent years the average allotment size in the UK has been halved owing to high demand, to approximately 126.5 square metres.[14]

Community orchard: A collection of fruit (and sometimes nut) trees planted among grass for the use of local residents. Traditionally, orchards were at the centre of villages. Community orchards are excellent places in which people can meet, as well plant and cultivate varieties of fruit trees.[15]

Green belt: A largely undeveloped, often treed, agricultural or other outlying area of land used to separate or ring urban areas, restricting urban sprawl. The green belt is protected, with the aim of keeping land permanently open and free from further development.[16]

Green corridor: A strip of green land that connects green areas or hubs and allows the movement and dispersal of wildlife, usually through urban landscapes. Green corridors can also be used to link housing areas to, for example, cycle networks, places of employment, town centres and community facilities, thus promoting walking and cycling.

Green façade/wall: A wall (partially) covered in greenery, often planted in soil at the base, but sometimes using wall-mounted boxes or special panels. The vegetation increases the wall's attractiveness and offers several benefits, such as contributing to heat retention and cooling, stormwater retention, and the capture of airborne particulate matter and volatile gaseous pollutants. Also known as living walls or vertical gardens.

Green roof: A vegetative roof system that hosts plants in a growing medium installed over a waterproof membrane. Green roofs can be designed to optimise energy conservation (through insulation) and/or for aesthetic value. In rainy climates they can be a source of water for homes, since they can retain 60-90% of annual precipitation, depending on rain frequency and intensity. Green roofs can be designed to be low maintenance, needing little or no irrigation during winter and only occasional weeding or feed application.

Green space: A patch of vegetated land within the urban fabric, ranging in size from a pocket garden to a large urban park.[18]

Green space creation: The creation, from space that was previously not green at all, of free-access areas of grass, trees and other vegetation, set apart for recreational or aesthetic purposes in an otherwise urban environment. Green space creation can help to make an area safer, by encouraging its greater use, with attendant natural surveillance, due to more people being visible in the area; encourage physical activity, such as walking and playing; and boost residents' and other users' mental wellbeing and physical health.[19]

Green space enhancement: Improvement to existing green space to make it more attractive and/or safer. Better management and stewardship can often allow green spaces to flourish and improve them so that they can be enjoyed by all.[20]

Nature-based solutions: Actions that are inspired or supported by natural processes and which simultaneously provide environmental, social and economic benefits. Such solutions are designed to bring natural features and processes to cities, landscapes and seascapes.[21]

Park: A publicly accessible area of natural, semi-natural or planted space intended for human enjoyment and recreation and often for the protection of wildlife or natural habitats. Parks often host facilities for play and rest.[22]

Permeable paving: A method of surfacing vehicle and pedestrian pathways to enable infiltration of stormwater run-off. Typical surfaces include paving stones and pervious concrete. Permeable paving allows stormwater to percolate and infiltrate through the pavement, reducing run-off and improving water quality by filtering pollutants in the layer below.[23]

Urban tree planting: The process of planting tree seedlings in towns and cities. As urban sites may not be the natural habitat for trees, tree choice and location are vital if trees are to grow and flourish. Planting trees in urban areas can yield many benefits in addition to their aesthetic value, such as reductions in particulate pollution and noise levels.

Wayfinding: An important tool that helps users of an area to navigate their way around. This often includes the use of signs, road or pavement markings, streetscape elements, street networks, and graphical communications.[24]

Wetland creation: The creation of a distinct ecosystem inundated by water, either permanently or seasonally, where oxygen-free processes prevail. Aquatic vegetation thrives on the unique hydric soil. Wetlands can be used for water purification, water storage, the processing of carbon and other nutrients, the stabilisation of shorelines, and in support of plants and animals.

Woodland creation: The planting of new trees to form woodland or low-density forest, providing open habitats with plenty of sunlight for inhabitants and some limited shade at ground level. It can help in urban cooling, in providing shade and shelter, in minimising run-off from fields, and in reducing the impact of flooding. Planting close to existing wildlife-rich areas, such as ancient woods, buffers them from the impact of neighbouring land use and can help in making connections to other existing habitats.[25]

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Thanks are due to Catriona MacRae for writing/compiling this Factsheet.

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December 2019