

GreenScapes Design

SUSTAINABLE GARDENS AND LANDSCAPES

Sustainability – a word we hear increasingly these days - can be defined as *development which meets the needs of the present without compromising those of the future*. In terms of garden and landscape design, this means working with Nature, not against it. There is, however, no single established code of practice to adhere to, no right or wrong way to proceed. Sometimes the possible choices may seem counter-intuitive; for example, one might argue that maintaining a lawn requires such high inputs of energy and water that it would be better to remove it all together, and replace it with artificial turf; or that it may be better to send garden waste to be buried in a landfill, rather than burning it or letting it decompose, which both involve releasing its carbon into the atmosphere. The truth is that the design of sustainable gardens and landscapes involves weighing up the pros and cons of all the various options that are available in any given case, and often making a compromise. Any design should include three vital aims:

1. To encourage biodiversity

Biodiversity is a measure of the number and variety of types of plants, animals and insects living in, or regularly visiting, a given space. Gardens are amongst the most biodiverse habitats on earth, but, left to their own devices, they would be taken over by those native plants best adapted to the local conditions, and biodiversity would actually drop as a result. For maximum biodiversity, one must choose plants that will attract as many different animals, birds and insects as possible. There is a widespread belief that using native plants promotes biodiversity: while it is true that some native plants, notably shrubs and trees, will support a huge variety of native creatures because they have co-evolved with them over millennia, it is also the case that some 'exotic' garden plants, especially flowers, offer a bounty of nectar and pollen unrivalled by most of our natives, which will certainly attract many insects. The use of natural methods of pest and disease control, rather than chemicals, will also promote the growth of a healthy and prolific population of beneficial insects and predators.

2. To conserve water

Water use in gardens currently accounts for at least 3% of household use, rising as high as 70% in summer in homes that use sprinklers or have swimming pools. Although rain falls fairly evenly throughout the year, there is not enough of it to supply all our needs in dry summers, and the reservoirs become rapidly depleted. This shortage is exacerbated by the fact that new homes continue to be built, the number of single occupancy households is growing, and the use of water-hungry domestic appliances is increasing, to a level where demand inevitably exceeds supply. There are various ways to conserve water in the garden, including: soil management; using drought tolerant plants; buying small plants; planting in autumn; harvesting rainwater; recycling household 'grey' water (water from the shower, washing machine etc.) and stormwater management.

3. To reduce carbon emissions

Sustainability is achieved when the carbon and energy harvested and captured through the photosynthesis of plants exceed the carbon dioxide released and the energy used to install and maintain the landscape. Trees and plants capture carbon, but their upkeep can contribute to greenhouse-gas emissions: lawn mowing, leaf-blowing and use of fossil-fuel-derived fertilisers, for example, all release carbon into the atmosphere. For hard landscaping, there is an ever increasing range of materials to choose from which have a reduced carbon footprint, including: cement substitutes such as lime, pulverised fuel ash (PFA) and ground granulated blast-furnace slag (GGBS); stone from local quarries; local recycled aggregates and plastics; local or Forest Stewardship Council (FSC) accredited timber; and sand made from recycled glass. Plants and stone imported from abroad, and recycled products with high transport miles, do not contribute to sustainability. It is also very important to make any possible use of the renewable natural energy systems, particularly wind and solar power.