Sustainable garden design

blue bridge garden design

Sustainability meaning that we must be mindful of the consequences of what we do - consider everything in according to the best of our knowledge - to ensure our survival on this planet

- We *see the garden as a whole*, interacting with the elements - soil, wind, climate, light/shade, aspect, house, surroundings and most important the way you want to use it.

- Using our *experience and knowledge* in horticulture, garden and landscape design, we literally start from below the ground up as the most fundamental element of a sustainable garden is the soil.

- A good design is an asset to the house, creating *a new exciting environment to enjoy*, *explore and see develop*. New elements interact with existing to create a harmonious space which fits into its setting to enhance its surrounding.

- Knowing your gardens *unique elements* and *listening* carefully to your personal requirements, we then create a full garden design. We strive to create a garden that feels *comfortable, inspirational* and *stimulating* to maximise the enjoyment and promote its use.

- Web-sites links (at the end) give detailed information about sustainable garden elements and practical gardening. There are many important issues here which will be central to the development of a sustainable garden design.

- Hard landscape will be determined by your preferences, but locally obtained materials from sustainable sources and distributors will be encouraged.

Raised beds gives minimal soil disturbance

- No stepping on the soil creating compaction and there is no need to dig
- Keeps the soil structure
- Minimal disturbance to wildlife
- Minimal water evaporation
- Less weed seeds brought to the surface
- Easier to maintain

Soil science - an impact on the sustainable garden

Your soil components are minerals (from the parent rock), water, air, organic matter and living organisms. Its texture and properties will depend on the soil particles (sand, silt and clay) in combination with its organic matter content.

- *Sand* have a large particle size, contains a lot of air, quick to heat up in spring and has no electric charge. It will therefore usually have good drainage with a low nutrients holding capacity.
- *Clay* is on the other side of the scale with tiny particles will easily be compacted, slow to heat up in spring and has a charge. This gives it a larger water holding capacity and it holds onto nutrients well.

A healthy soil has a good soil structure with plenty of *microscopic soil life, balanced water and oxygen ratio and good nutrients availability.* These soil properties have been built up over a long time and are in the top layer of the soil. Topsoil is therefore very valuable.

- *Soil animals* like earthworms make channels in the soil, aiding drainage and drag organic matter down into the soil, which helps improve the soil. Microbes mostly around the rootball help and aid nutrients availability to the plants. Fungal strands (mycorrhiza) attach themselves to the root system of woody plants and expand the plants network for water uptake. Amazing things happen in the soil and we must value and preserve these recourses.

- *The soil structure* is very important for the drainage of water and oxygen. Clay soil is easily compacted which can cause problems, which need to be considered when developing the garden and during construction. Compaction can cause water to stay on the surface, a lack of sufficient oxygen for the plants. Plants not used to our wet cold winters, will not like waterlogged soil.

- *The soils nutrients availability to the plants* is linked to the chemistry of the soil and its pH (hydrogen ions in the soil - acidity/alkalinety). This in combination with water availability, sun/shade, prevailing wind, climate, frost pockets and micro-climate will determine what kind of plants will thrive in your garden. To get the right plant in the right place is important to avoid stress leading to disease and illnesses on the plants. The wrong plant will often need special attention and require high maintenance and sometimes not survive. To create a sustainable garden which does not fight for survival we consider the soil and other influencing factors at an early stage.

Save, harvest and recycle rain and grey waters for irrigation.

- Minimise water consumption
- Minimise stress on the plants if regular watering is an issue, particular those in pots which needs frequent watering
- Water level can be adjusted to every area
- Can be fully automated

Install a natural chemical free swimming pond instead of a chlorinated swimming pool.

With 50% plants 50% swimming area no filters are needed to sustain clear water. It is also possible to convert a traditional pool to a natural pool.

Chemical free clear swimming pool instead of a chemical dependant pool

Biological and in some phosphorous filters replace the water plants

Affordable green walls

If you need more space, why not grow your vegetables or other plants vertically. New easily maintained systems available for up to a height of 2 meters.

Aquaponics

Creating an eco-system – fish in combination with vegetable growing.
This is relatively new to the UK, but will start in Oxford in a few months.

- The system relies on the relationship between the fish and the plants to maintain the environment and creates a closed loop ecological food system.

- Nutrient rich water from Tilapia fish tanks is pumped into gravel beds with vegetables. Beneficial bacteria in the gravel beds break down the nitrates suitable for plant uptake, before the water is pumped back into the fish tank providing aeration for the fish.

- The vegetable plants will use the by-product from the fish (nutrient-rich water)and the less nutrient rich water is returned to the fish tank so no extra discharge or exchange of the water is needed. Water is only added to replace water loss from absorption by the plants, evaporation into the air, or the removal of biomass from the system.

- The fish Tilapia Rendalli are omnivores and consume a huge range of plant products including mulberry leaves, worms and any waste by-products from the vegetable grow beds - replacing the commercial feed by natural feed.

Wildlife shelters

There are many good web-sites. For information on sustainability in Oxford visit:

- www.climatex.org
- www.coinet.org.uk
- www.oxfordismyworld.org

Other informative web-sites are:

- www.lowimpact.org
- www.simplyrenewable.com
- www.rhs.org.uk
- www.hydra.uk.net
- www.wildlifetrusts.org