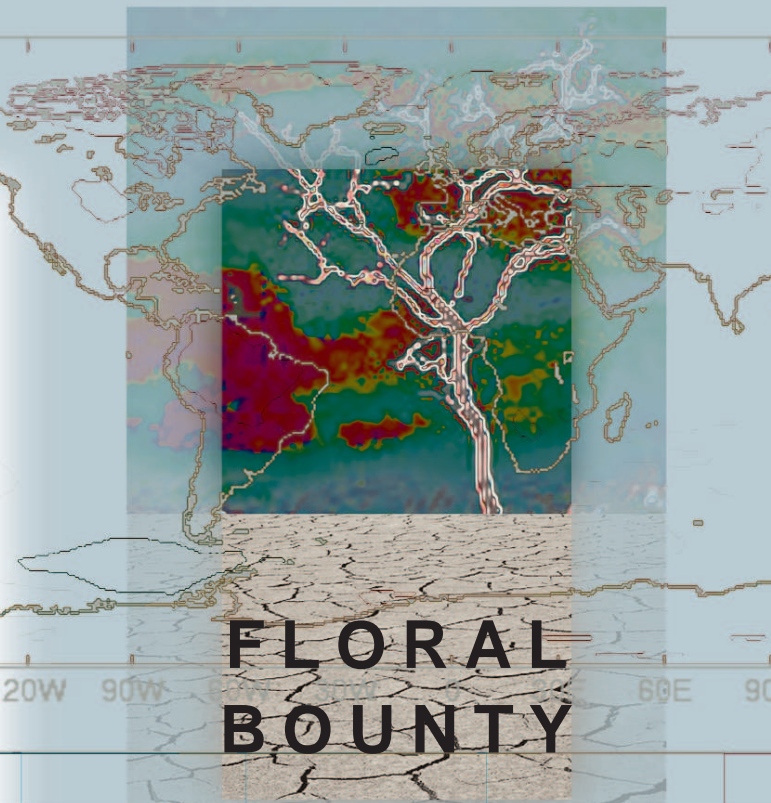


Driest County



FLORAL BOUNTY

1 Climate Change: an Essex Flower Garden in Transition

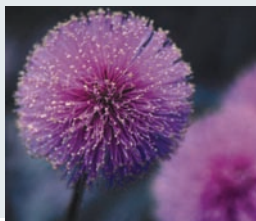
An exhibit reflecting some aspects of the effects of climate change on gardens and gardeners in the Lifelong Learning section of the Chelsea Flower Show 2008 **Stand G12**



How can an English flower garden adapt to the climate change forecasts for the next thirty to forty years?

This can be an added challenge if you are based in the driest county in Britain. The exhibit contrasts traditional Essex building, hard landscaping and detail with exotic plants that will be more familiar to gardeners as tender perennials. It looks ahead some twenty to forty years using climate change scenarios highlighted by the UK Climate Impacts Programme (UKCIP).

The Essex dry gardens at Beth Chatto's Garden and the RHS garden at Hyde Hall show that it is possible to have interesting gardens with little or no irrigation. Their sparse nature, grey foliage, emphasis on plant texture and use of gravel is not to everyone's taste. Can we retain the best elements of the traditional English flower garden with its flower, colour and particularly lushness in the future? We aim to show how the opportunities of climate change may allow us to grow this different range of plants all the year round. However, this may mean adapting our gardening techniques to get the best out of the plants.



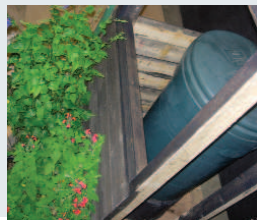


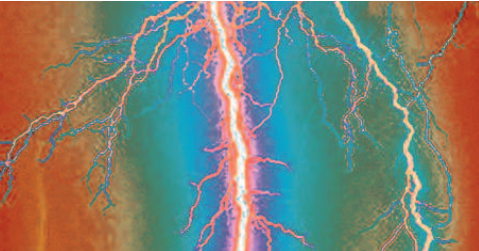
The Traditional Elements

The use of black painted timber building, traditional brick and tile work, Essex gravel paths and the host of landscape details fix the exhibit in our garden heritage. However, we are trying to give the impression that this heritage extends through the decades past, present and the future. So we have avoided clothing the stand with too many vintage and antique objects. We have incorporated a small roof mounted solar panel in acknowledgement that in the very near future these will be common place. So in twenty to forty years time these will be garden tradition rather than innovation.

The feature bench has been constructed from English oak re-cycled from our farm at Writtle College. It was constructed in a style that acknowledges the past but is of the now by Paul Margerum, one of our buildings maintenance crew.

We are not suggesting that English oak will become extinct due to climate change, but this will be an additional pressure that it will face. Already in the dry East of England there are signs that this species and some other native trees are finding life harder than they did twenty years ago. What will it be like for them in forty years time? We again do not have the answers just the concerns.





The Plants

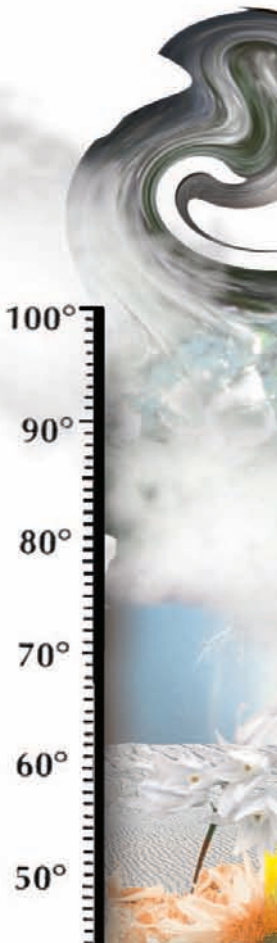
Britain has a maritime climate where the seasonal variations are not as extreme as in areas affected by continental air masses, such as central-southern Siberia which is also on about the same latitude as Britain. However climate change scenarios predict a longer growing season and higher temperatures. This could make it viable for gardeners to grow once tender ornamental plants outdoors. Fewer frosts could also mean more reliable crops of exotic salads, herbs, plums and cherries. However, plants that need a period of cold weather to initiate flowering or for winter dormancy might struggle and so some familiar spring bulbs will be difficult to grow.

For inspiration for the stand we have tended to look for plants grown outdoors in warm temperate and maritime gardens, rather than the Mediterranean. The use of *Trachelospermum*, *Nerium*, *Salvia*, *Argyranthemum* and *Euryops* are just used as examples and we appreciate there are many more that could be used. Dahlia tubers are already being over-wintered outdoors by many gardeners, as are some semi-tender *Salvia* species and cultivars, such as *S. guaranítica* 'Blue Enigma', which behaves as an herbaceous perennial.

The plants chosen for the stand should be hardy to -6.5°C , but they can be badly affected by cold damp soil in the winter when they are not growing particularly well. The foliage of some species, such as *Salvia microphylla* may discolour in cold weather but should recover when it warms up.

We have included the native cornfield annuals both to represent a link with the past, but also in recognition that these plants are and will be more under threat from agricultural and horticultural practices than from climate change. Incidentally, the Essex county flower is the Field Poppy, *Papaver rhoeas*.

A full plants list has been added as an addendum to the leaflet.



Our Garden Heritage

UKCIP notes "Heritage gardens may face particular difficulties in preserving a traditional display of plants as climatic conditions change." However, climate change will not just affect plants and lawns in these gardens. Wetter winters and more frequent extreme weather events will affect water features and increase flood risk. The generally warmer climate is likely to affect the conservation of historic buildings and their fabric.

The projected images on the stand aim to highlight this by looking at various Essex gardens and landscapes. It poses the questions, but does not presume to offer solutions. This is a gap in our knowledge that is only beginning to be addressed. However, it is sobering that English Heritage note that their national snowdrop collection at Audley End, Saffron Walden, Essex maybe under threat.

Both climate and weather are notoriously difficult to predict with pinpoint accuracy

Last years summer floods and the Arctic blast this Easter are not thought to herald a return to a climate we were used to in the middle of the last century. However, these events do highlight the uncertainty and no one expects that there will be no winter frosts or summer rain in the future.

Visitors are urged to go along to the UKCIP and RHS Stands G20 and H12 respectively, for a fuller understanding of climate change and its effect on garden and gardeners.

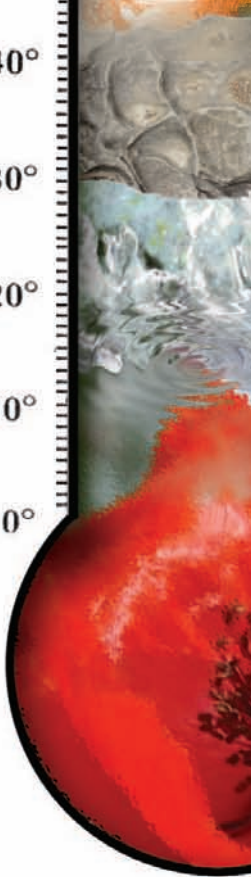
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30°

20°

10°

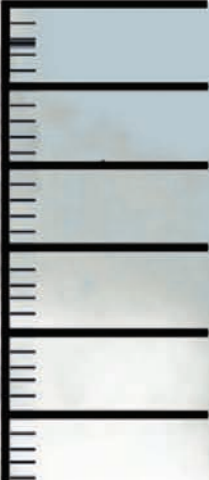
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Be Water Wise

The exhibit has a central water feature which is the end point of a water harvesting system. The water is collected from the roofs and is transferred first to the water butt, before then being allowed to spill into the feature. A retractable cover will prevent evaporation when closed but also can be opened so that water can be used for irrigation. The feature can provide some evaporative cooling of the area during hot weather.

Rainfall is expected to fall increasingly during winter, and summers are likely to become drier, so these tips will be increasingly important as the growing season extends and drought events become more common.



When planning a new garden, check to see if the plants are drought tolerant and avoid any that require a lot of water

Water newly planted herbaceous plants, shrubs and trees as they can be more vulnerable to drought in their early years. It is best to water them deeply and infrequently compared to little and often in order to encourage deep rooting

Avoid watering established plants unless they show signs of real stress

Water the ground and not the plants

Target irrigation to those plants that really do need watering, for example the Dahlias featured on the exhibit need to be kept fairly moist for strong growth and flower

Irrigate early morning with a good soak to encourage deep rooting. The water will be available during the day and provide some evaporative cooling as it dries



Avoid evening watering if possible as humidity and warmer temperatures at night, may encourage disease

Use large containers for patio plants. They help reduce water use as they retain moisture better than small pots

Group pots of plants together so as to reduce the rate at which water is lost and use a watering can rather than a hose

Use mulch to cover bare soil and avoid surface evaporation

Invest in a water butt to catch water from your roof. This pure water is the ideal thing for your plants and as it takes less water from reservoirs, rivers and underground sources as it benefits the wider environment

The independent non-governmental organisation Waterwise and your local water company can provide support and advice about the efficient use of water in the home and garden.

Aspects of Plant Cultivation

Gardeners are advised start adapting their planting and horticultural practices to ensure survival of their gardens. Many experts already think that gardening books are out of date.

Britain's mild climate will still be interrupted occasionally by cold Arctic air in winter and hot subtropical air in summer, as it is now. So it will still be important to exploit garden microclimates in the future. The courtyard nature of the exhibit would allow for a number of microclimates particularly those avoiding cold Arctic winds in spring.

The management of soils will, as usual, be important, particularly on our heavy Essex clays. Cool wet winters will present a challenge for gardeners hoping to grow many less tender plants, such as those featured on the exhibit. Working a sharp lime free grit sand into the soil, will not only improve the drainage, but will also enhance soil aeration, make it easier to work, and encourage strong root formation by the plants. Well rotted organic matter will aid water retention, improve texture and add to the fertility of the soil.

Writtle College, a partner of the University of Essex, provides a range of full and part-time courses in both Further and Higher Education, including Foundation, Honours and Postgraduate opportunities.

New courses for 2008/2009: Green Space Management, Social and Therapeutic Horticulture, Horticulture (Historic Garden Management), Horticulture with Garden Design.

Writtle College is actively examining aspects of climate change and is seeking partners in this research. Please contact Andy Boorman, School of Horticulture (avb@writtle.ac.uk) if you are interested in partnering or have a proposal for research.

Open Days:

Wednesday 4 June 2008

Saturday 19 July 2008

Wednesday 22 October 2008

Wednesday 12 November 2008

Wednesday 10 December 2008

Wednesday 21 January 2009

Wednesday 11 February 2009

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Writtle College would like to recognise Essex County Council as being the main Sponsor for this exhibit and would also like to extend special thanks to the above for their help:

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