

The level Conservation Report 2018

Conservation methods are taken seriously at the Level, to safeguard many species of insects (pollinators), which have declined in many areas, town and rural areas.

Thus at the Level, measures are taken to increase biodiversity, restore and protect their natural habitats.

This can be done through certain measures:

- Good plant diversity, such as a wide range of perennials and wild flowers makes a better healthier ecosystem for pollenating insects, as well as other beneficial insects.



Honey bees visiting catmint (*Nepeta x frassenii*)



The *cirsium vulgare* (Common thistle)



The Level is a pesticide free zone, which is better for the environment and for the well-being of all. Instead we use Neem oil for controlling pests and diseases, such as greenfly or blackspot. Neem oil itself comes from a tree in India *Azadirachta indica* and has been used for years as a form of natural pest control. Another name for this tree is Margosa.



Zero pesticide

You are entering a natural area

For the respect of the environment
and well-being of all, we do not use
pesticides in this park.



Habitats for pollinators = Healthier world



- **No peat based materials are used (organic material only) such as leafs from autumn, grass trimmings, spent coffee grounds; wood ash from the pizza oven, as well as tea leafs.**
All of this organic matter (organic mulches) are beneficial as they add nutrients back into the soil as they slowly decay, as well as improving the soils structure by creating an environment for organisms that are very beneficial for the soil.

Coffee grounds on one of the borders

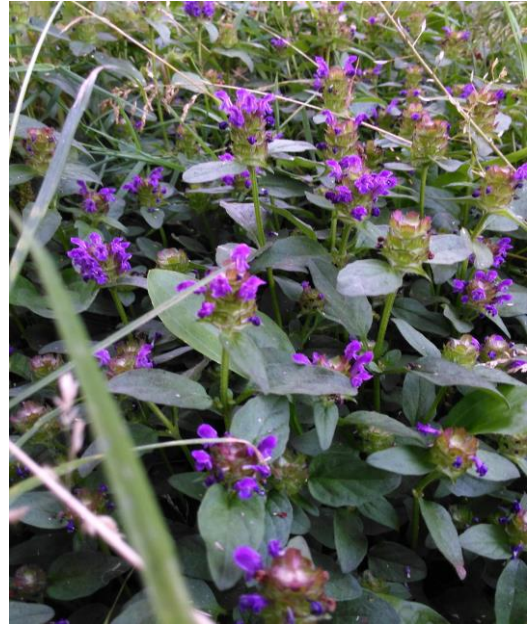


Coffee grounds are beneficial to the plants, because they slowly release nitrogen as they decompose, as well as improving the soils structure; it also encourages more earthworms to be present and keeps pests at bay, such as slugs and snails.

- **Designated areas, such as the perimeter of the park have been left to grow so that it may provide another stepping stone for wildlife, which in turn will give a 30% to 35% increase to the biodiversity of the park. In October 2015 we planted over 20 thousand Native Bluebells around the perimeter of the park.**



Common centaury



Selfheal

These wildflowers and many others provide great habitats for wildlife.

Companion planting: Some species of plants have beneficial effects to neighbouring plants, commonly known as Dynamic Accumulators or mining plants that gather certain Micronutrients & Macronutrients, such as achilleas and stinging nettles which can mine for Sodium, Sulphur, Nitrogen ,Calcium, Potassium, Iron & Copper which can improve the neighbouring plants defence against pests and diseases.

The nettle can also be used to make a natural liquid feed.



Also there are clumps of stinging nettle (urtica dioica) that provide food and shelter for more than 40 species of insects, which are completely or partially dependent on nettles.

Certain butterflies for example, Red Admiral, Small Tortoiseshell, Peacock and the Comma are dependent on nettles.

- **Ornamental grasses not only give a living bouquet effect to any border, but also provide a valuable hibernating place for beneficial insects, such as ladybirds.**



Fountain grass in winter (a great hiding place for insects)

- **Over 95% of green waste is recycled on site; such as grass trimmings, leafs and of course pruning's. The prunings them selfs are scatted under the native hedge row, which surrounds the Sothern side of the park. This provides nitrogen to the hedge row as it decays, a place for the insects; which in turn provides food for foraging birds and the remnants of the prunings provide nesting materials for them in spring and summer.**



Green waste (prunings) decomposing under the native hedge row

- We also propagate about 50% to 60% of the plants from The Level to sustain the levels diverse planting; this is done through many forms of propagation, such as division, hardwood cuttings, semi-hardwood cuttings, soft tip cuttings and of course, from seed.

Young plants being grown on at The Levels yard



- We also started a seed bank herbarium (Collection of preserved plant specimens) in august 2016, where the seeds are contained in envelopes or old coffee jars.



Seeds collected
Centaurea macrocephala
Digitalis pupurea
Echinops ritro
Crocsmia 'lucifer'
Dispsacus fullonum
Lychnis coronala
Eupatorium cannabinum
Papaver rhoeas

Plus many more.

The Levels mini seed bank herbarium

- Information: Informing the public about the plants of the Level through the level plant database, which informs them about the plants flowering at that specific time and if they are suitable for pollinators?



The level Plant database









Salvia x sylvestris 'caradonna'

Family: Labiatae / Lamiaceae (Sage family)

Common Name: Caradonna sage

**More than 800 species are widely distributed throughout the world
(North and South America, Africa, Asia and Europe)**



-  **Flowering: Late spring, early summer.**
-  **Position: Full sun.**
-  **Hardiness: Hardy.**
-  **Propagation: propagate by division in spring.**
-  **Pests & Diseases: Generally trouble free, but low temperatures could cause stunted growth on young plants.**
-  **Cultivation: Cut back to ground level in winter.**



Many types of salvia attract pollinators especially bees, plus some sages have medicinal or culinary use.



Scan here for text info about this plant.

An example from the Level plant database.



- As well as having plant databases for the public, there is also Level Garden News which informs them about new projects (such as the butterfly bed) and also specific plants of interest, such information can be found on the Level web site and is also displayed on certain information boards at the Level.



The park's Butterfly Bed which is situated between the café and the MacLaren pavilion is now complete with its new explanatory sign and new planting, of which 50% are propagated at the park itself, from seed, cuttings and plant division .



Some of the new plants that have been added to this bed are:

Verbena bonariensis



Centaurea montana



Centaurea macrocephala



Echinops



5 varieties of Buddleja



Hemp agrimony



An example of The Level Garden News

- Herb rock gardens provide a great habitat for insects; due to their diverse planting, such as Basil, Chives, Tarragon, Thyme, Mint, Rosemary, Oregano, Marjoram, Coriander and Sage. The rocks also provide a place for certain insects to hide and for lichens to grow on.



The herb rock garden (above) at the level, that not only provides a habitat but also gives culinary delight to the café.

- A 'bee bed' has been established in the north west corner of the park, as part of ongoing collaboration through the Brighton & Lewes Downs Biosphere programme to improve urban green spaces. This showcases to the public the attractive garden plants that people can grow themselves to benefit a variety of pollinators, an initiative with the University of Sussex's Laboratory of Apiculture and Social Insects (LASI). We also collect data of the pollinators and the plants they visit, this data is then sent back to the university, in order to gain better understanding of the pollinators and the plants they visit.

Making a Bed for the Bees to give Nectar Rewards!

Before you is a flower bed of garden plants specially selected to demonstrate which varieties are attractive to bees. You can grow these plants in your own garden, to provide summer colour and nectar rewards for a diversity of pollinating insects.

These little creatures play a vital role in helping to produce many of our food crops, especially fruits such as apples – we in turn need to help the bees get enough of their food, by growing garden flowers that provide them with nectar and pollen.

Growing here are more than a dozen types of garden plants. Most – but not all – are highly attractive not just to our eyes but also to the taste of pollinators. The plant varieties around the outside are attractive to pollinators, whereas for comparison those in the centre are not (see pictures right).

Take a look at each plant when they are in flower and see if you can tell which works best for different pollinating insects, by counting the numbers of each type of insect (see pictures top right) visiting each variety of plant.

Research has shown that garden flowers vary by more than 100 times in the number of insects that they attract. Different varieties attract a different mix of insects, for example borage is visited mostly by honey bees and lavender by bumble bees.

Then why not grow a few bee-friendly plant varieties in your own garden to help out? You'll find them easy to grow, suitable for a mixed border and widely available from local garden centres.

This bee bed has been created by Brighton & Hove City Council Parks department working with Professor Francis Ratnieks of the University of Sussex's Laboratory of Apiculture and Social Insects (LASI) as part of their research under the "Sussex Plan for Honey Bee Health & Well Being".

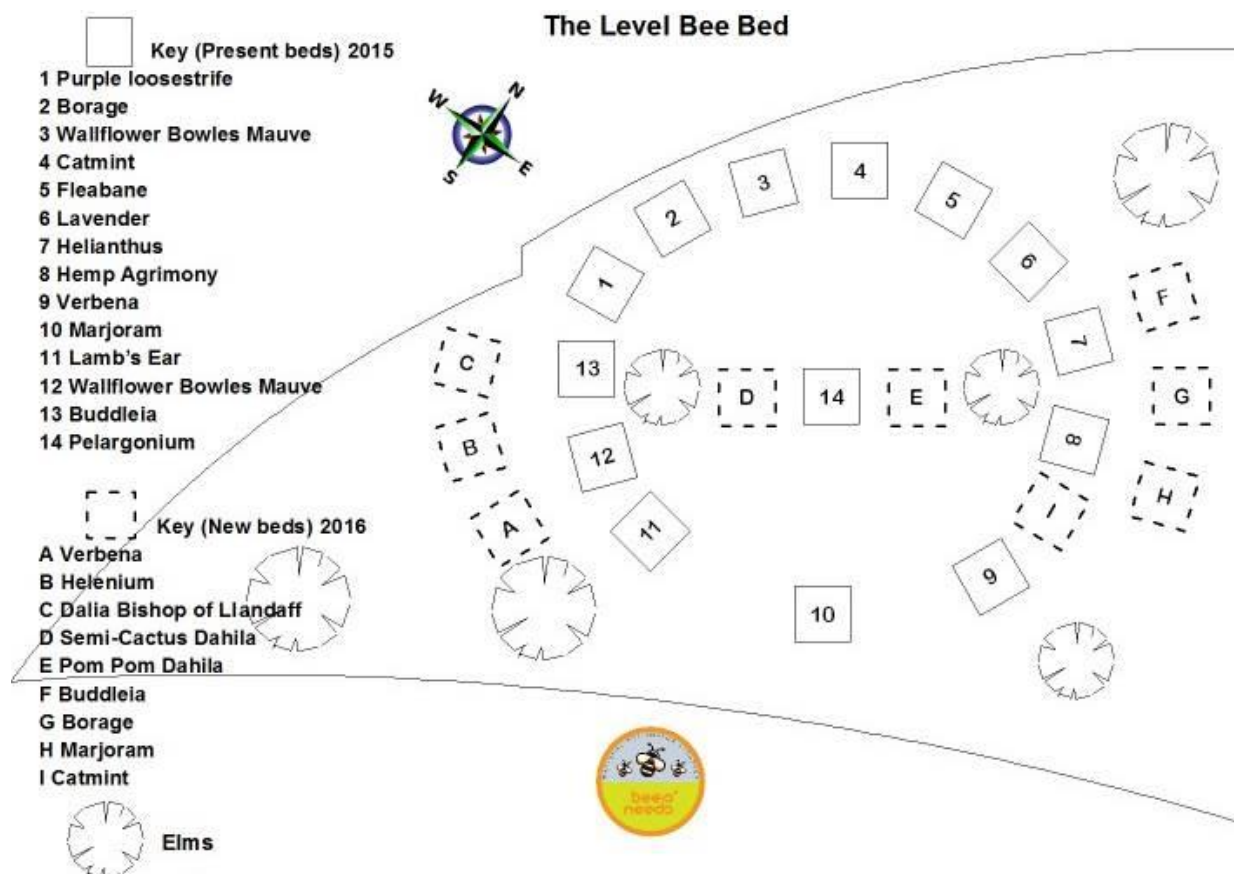
This initiative is part of the Brighton & Lewes Downs Biosphere's mission to connect people and nature, by improving urban green spaces to benefit both.

Brighton & Lewes Downs Biosphere

LASI LABORATORY OF APICULTURE AND SOCIAL INSECTS

US University of Sussex Life Sciences

Brighton & Hove City Council



New interpretation signs were made up for this project
 This diagram above demonstrates beds established in 2015 as well as 2016.

- A new butterfly bed situated near the café, complete with its new explanatory sign and new planting, is for the benefit of butterflies and other pollinators. The plants that we have selected are Echinops (Globe thistle), Verbena bonariensis, Verbena hastata, Penstemon, Nepeta (Cat mint), Mullein, Centaurea montana, Hemp agrimony and some buddlejas Royal red, Black night, white profusion, Empire blue and Nanho blue, as well as some clumps of stinging nettle.



Butterfly bed

This flower bed was created to provide a habitat for butterflies, moths and other pollinating insects. It helps them provide an essential service to people too.



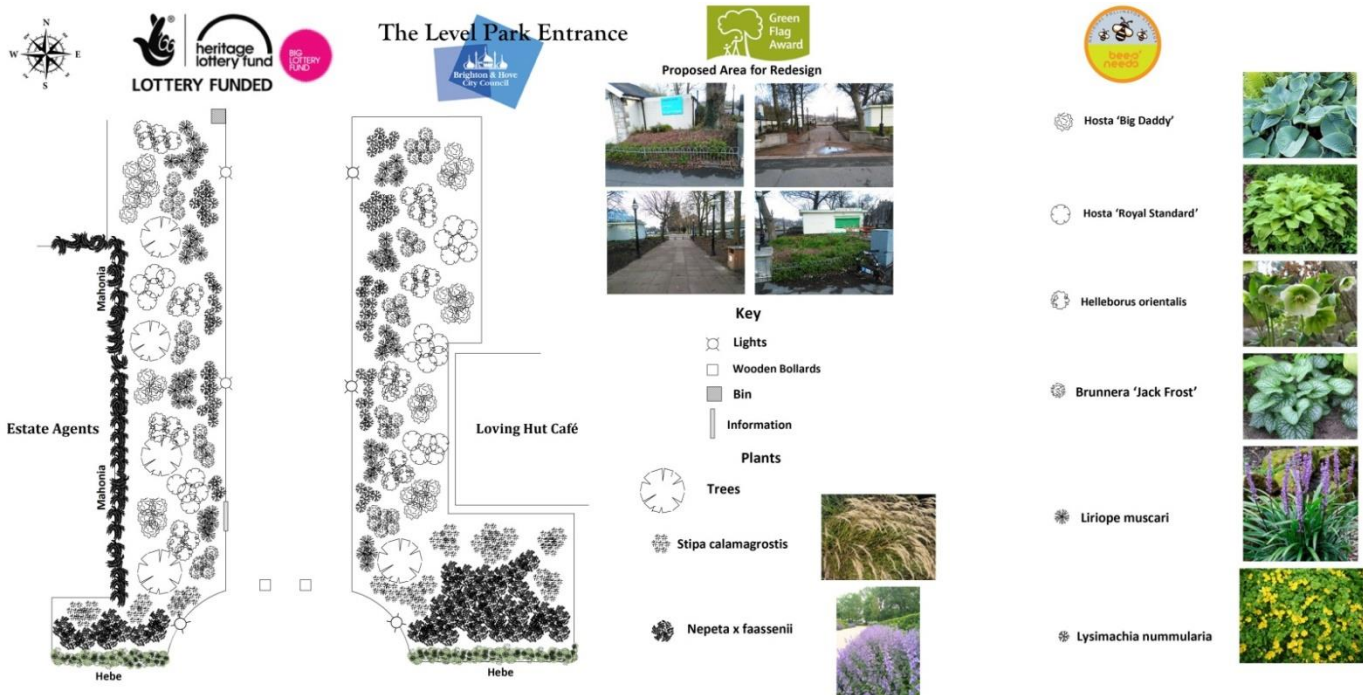
Habitats for pollinators = a healthier world



Brighton & Lewes Downs Biosphere



- The front entrance of the park has also been landscaped with more attractive shade tolerant plants.



The plan for the south entrance 2016

- We have also replanted two beds near the café with drought tolerant plants to demonstrate to the public the changing effects of our climate, and that we need to make better plant choices for the future.
(Plant diversity creates a better healthier ecosystem)



All the plants selected for this project are all beneficial for pollinators.



One the plant species chosen for this bed was Achillea 'Summerwine'

- A new Bee Bed was created at the open market in 2017 with the help of volunteers from The Level and also the open market, turning a so called brown area into a green area, linking the two sites together. This in turn provides another stepping stone for wildlife.

THE OPEN MARKET BEE GARDEN

IN PARTNERSHIP WITH THE LEVEL AND BRIGHTON & HOVE CITY COUNCIL



Our little garden space has been turned into a bee friendly zone with the help of volunteers from The Level Conservation Initiative.

This Bee Garden is a pesticide free zone, which is better for the environment and for the well-being of all. Instead we use Neem Oil for controlling pests and diseases, such as greenfly or blackspot. Neem oil itself comes from a tree in India. Azadirachta Indica and has been used for years as a form of natural pest control. Another name for this tree is Margosa.

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Companion planting: Some species of plants have beneficial effects to neighbouring plants, commonly known as Dynamic Accumulators or mining plants that gather certain Micronutrients & Macronutrients, such as Achilleas and Stinging Nettles which can mine for Sodium, Sulphur, Nitrogen, Calcium, Potassium, Iron & Copper which can improve the neighbouring plants defence against pests and diseases.

The plants that you see before you can be planted in your own garden to provide summer colour and nectar rewards for the diversity of pollinating insects. 40% to 50% of the plants are propagated at The Level to sustain diverse planting; this is done through many forms of propagation, such as division, hardwood cuttings, semi-hardwood cuttings, soft tip cuttings and, of course, from seed.

For more information please visit:
www.brightonopenmarket.co.uk
www.brighton-hove.gov.uk/thelevel

Special thanks to the following traders in the market for their support:

Market Florist Unit 4, The Food Shed Unit 9,
Miniature & Moss Unit 10, Tea and Honey Unit 31,
Beth Radish of The Artpothecary Unit 20 for designing this sign
and to Steven Peters, Garden Manager of The Level



Green Roof

• The Green Roof at The Level has many benefits:

- 1) Provides a more pleasing habitat.
- 2) It is a modular system of pre-grown trays of wild flowers
- 3) They provide a habitat for plant species, animals, birds and insects
- 4) Sustainable drainage (absorbing about 60-70% of rainwater)
- 5) Insulation-reduce cost of heating and cooling
- 6) Sound attenuation
- 7) Carbon Footprint reduction (Urban Heat Reduction) The ability to trap particles and gases (CO₂)
eg: Can absorb around 100g (3oz) of particulate pollutants per square meter (of one car) = 3oz per sq yd per year



Photo of the green roof plus its solar panels (south side)

The Level Rain Garden



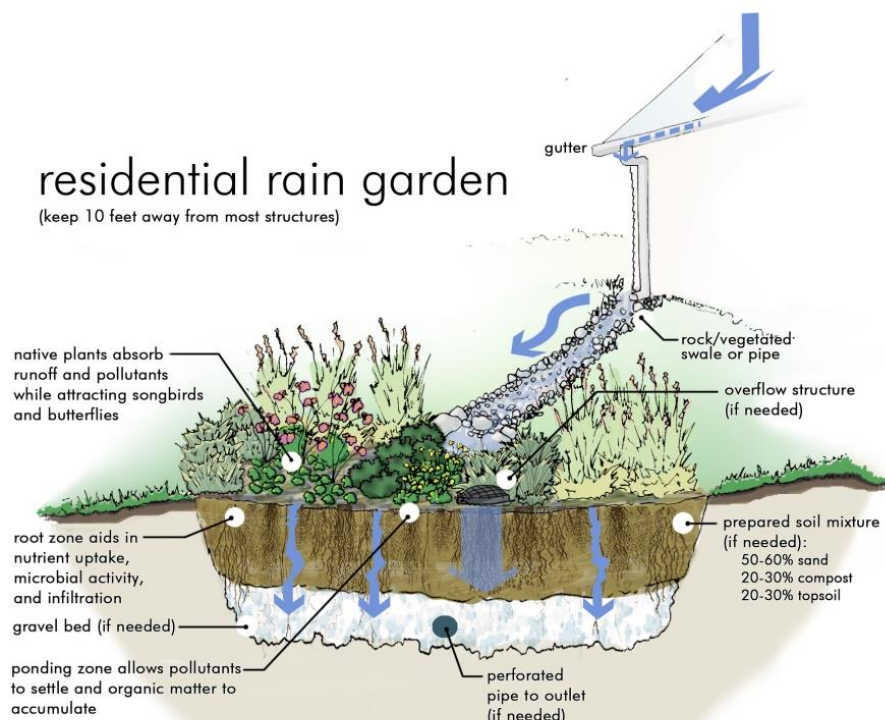
In spring 2017 we made a rain garden next to the café, in order to absorb excess rain water (75%) from the new flat roof, this new addition to the Level will prevent semi-flooding to this particular area and in addition to this we have also planted some particular plants that can cope with such conditions, such as:

Eupatorium cannabinum (Hemp agrimony)
Which is also very good for pollinators



There are also some varieties of grasses, *Stipa calamagrostis* (Needle grass) and *Stipa arudinacea* (Feather grass) that can also deal with the damp conditions, thus making this particular bed more sustainable and more attractive to the eye.

This diagram shows a very good example for a successful rain garden, that can be implemented to any garden.



Volunteer development at The level Park

For the past four years we have been running a volunteer garden club each Thursday morning.

The idea for the gardening clubs is for people to understand more about the world of horticulture, biodiversity and conservation.



- This would include a weekly plant ID to build one's knowledge of the plants we have at the level.
- Propagation skills, such as hardwood cuttings, plant division, softwood cuttings, layering and sowing seeds. (All this promotes a form of sustainability for the park)
- Plant care in which the volunteers learn how to look after the plants, such as pruning skills.
- Planting skills (what plant where and why?)
- Beneficial planting to encourage pollinators.
- Companion planting.
- Encourage environmental knowledge.
- How to garden without the use of pesticides.

Over 50% of the individuals that have participated in the garden club have gone on to study horticulture (RHS 1,2 and 3, & landscape design) This is a positive outcome as it helps to close the horticulture skills gap.



Volunteers working in one of the borders at the level

Other benefits of the gardening clubs are:

- To make new friends.
- Feel that you are doing your part for the wellbeing of the park.
- To become park ambassadors.
- An aspect of eco therapy for all.
- To enjoy through learning.
- Enhancing health and wellbeing



Working with City College students

In 2014, we worked with the students from City College to promote the level as a great place to be for them to learn things, such as:

- Encouraging environmental knowledge through guided talks on biodiversity and sustainability of the level.
- Teaching the students the importance of sustainability and what they can do at home and at college. (Making a wildflower area for example)
- Additionally, doing such things in the park as a group, builds their self-awareness, confidence, communication skills and makes them better aware of the environment that surrounds them.
- Doing regular bee counts throughout May and June for students to identify most commonly seen bees and build up a database with the results.

For example the flowers which attracted the most bees that year were:

Nepeta x frasseni (catmint), *Salvia x sylvestris* 'caradonna', *Allium schoenoprasum* (chives), and a favourite with the bumble bees was *Tymus Vulgaris*.



Left *Nepeta x frasseni* (catmint)

No1 for bees

The park has also won the bees needs award consecutively during the years of 2015 and 2016 for providing home and food for pollinators.



Bees needs awards 2015 and 2016



In November 2017 the Green Spaces Forum was launched

Brighton & Hove Green Spaces Forum (BHGSF) is a volunteer organisation set up to provide an independent voice and communication hub for community groups working in Brighton & Hove's parks and open spaces.

Benefits of joining the Brighton & Hove Green Spaces Forum

Coming together as one community helps improve communication between those involved in caring for our parks and open spaces. Specifically the BHGSF aims to facilitate:

- Communication between green spaces voluntary groups and other agencies.
- A mechanism to help green spaces volunteer groups mutually support one another.
- Visibility and access to different funding opportunities that are available.
- Easy access to available volunteer training opportunities.
- One voice for green space community groups whether large or small.

Mission Statement:-

"We seek to bring together volunteer groups concerned with the management of Brighton & Hove green spaces to exchange information, advice and knowledge: Communicating and working in partnership with similar groups and organisations to maximise environmental improvement and conservation."

