Fun fact

Insectivore species such as **common swift, common house martin** or **barn swallow protect us from** annoying **insects**, so how about not destroying their nests? **A common swift** can hunt up to 20 000 mosquitos a day! One family of **great tits** consumes during feeding time **120 million insect eggs**, **150 thousand caterpillars** and **75 kilos** of imago, i.e. an adult stage of winged **insects**. **Bats**, which belong to mammals, can eat up to **3000 mosquitos** a night!

Tips on bird nest boxes and hanging

- we hang bird nest boxes of various sizes and shapes for different species
- the type of the bird we want the house for determines the choice of the type of the nest boxes
- the size of the nest boxes and entrance hole, the wall thickness, materials and roof – those are the details you will find guides for on the Internet
- wooden nest boxes painted with natural oil mounted on the trees by a nail are appropriate
- nest boxes for common swifts or bats (a winged mammal, not a bird) can be a part of the façade
- no perches are needed under the entrance hole as birds do not need them, and, moreover, they attract cats and other predators unnecessarily
- we hang them on estrades, so they are safe from predators – straight trunks without branches on sides cats or pine martens could climb up
- we place them (bird nest boxes) on the leeward side
- never hang them southwards – overheating to death is at risk!
- we mount them (bird nest boxes) leaning slightly forward to avoid rainfall in

Did you know?

Birds adapt to a life in the city exposed to light and noise pollution at night, compared to the nature. The outcome is nocturnal bird singing, winter bird singing and louder chirping to drown out the background city noises.

REPTILES

- they maintain a biological balance
- they feed on insects
- the slow worm feeds on snails, apart from other invertebrates
- they are protected by law
- beautiful and useful animals
- they favour dry, warm and protected places
- a dry wall or piled up stones are a perfect shelter for them

Fun fact

A slow worm is not a snake, but a reptile. They have lost their limbs through evolution, so they have adapted to move by crawling. As slow worms are in no need for limbs, their limbs do not grow so big so we could see them.

We can also see the European green lizard in the residential areas

HEDGEHOG

- a useful nocturnal insectivore protected by law
- is solitary
- hoglets are born without spines that start to grow after their birth
- in summer we shall provide them with a bowl of water, weighted by a stone and placed under bushes
- due to the lack of appropriate places for hibernating, we can make them a "hedgehog home":
  - the simplest way is a pile of branches and leaves where he can hide
  - it can also be reinforced by pallets which we connect to each other with connecting material (screws) and fill with branches and leaves; in the lower part, holes must be cut in the pallets so the hedgehog can easily get there
  - a simple roof ensures a longer durability of the natural material

Fun fact

A hedgehog's body is protected by 5 000 – 7 000 spines they shed them over time, with new ones growing in to replace them, similarly to human's hair.

The hedgehog home and its inhabitant

INSECT

- represents food for a wide scale of other organisms, spiders, centipedes and other invertebrates, fish, amphibians, reptiles, birds and mammals
- pollinates and spreads plants by transferring their seeds
- provides the substances and nutrients circulation in nature
- participates in the decomposition processes of dead organisms

In order for insect to thrive in the city it is important:

- to provide food in the form of pollen and nectar source plants – to plant blooming plants, to leave the lawn to flourish – a reduced mowing regime
- to plant native plants species
- to create shelters and places for reproduction, e.g. insect hotels
- to integrate dead wood into a landscape where a plenty of rare, endangered or protected species evolve
- to prune old trees, such as willows or oaks, up to their "head" while leaving the trunk, which grows strong, forms hollows and in spring new twigs sprout
- to protect old trees
- to leave exposed surfaces of soil or sand for solitary bees to nest

Did you know?

Smaller insect hotels have proven to be better, as the big ones pose a great risk of spreading diseases and parasitism for insects that are there in high density.

species	material
solitary bee	holes in logs being 2-10 mm in diameter for eggs laying, hollow bamboo and Japanese knotweed stems
ladybugs,	zviazané suché palice, konáriky, vetvičky, listy
common drone flies	tied dry sticks, branches, twigs, leaves
lacewings, earwigs	straw, dry grass
Xylophagous insects, rough woodlice, centipedes, diplopods	damp decaying wood placed on the ground, under the insect hotel

We shall protect insect hotels from rain and place them in the sunlight. By using the network, we protect insect inhabitants against birds. Using ceramic flower pots, hay, and a string we can make up small insect hotels that would be attractive for earwigs, lacewings, etc.

Tip

Do you like butterflies? You can attract them easily onto your balcony. You simply need a shallow bowl where you mix water with honey in a ration 1:1. The made-up nectar attract butterflies shortly. Do not forget to fill-up the nectar regularly. We do not touch butterflies by their wings! By doing so, we damage the scales that cover their wings and thus we endanger them.

Did you know?

Earwig has a characteristic pair of forceps-like pincers at its rear-most part of the body which it uses to fold its large wings. They can fly! You don't have to fear for your ears anymore!😀 This species is very helpful in the garden and the female earwig **is an exemplary mother** that protects her eggs.

If there were no ants, we would be walking on a layer of dead remains of plants and animals several metres tall! It is their abundance that helps to fertilise the soil more efficiently than earthworms.

Odolné SÍDLISKÁ

HOW TO SUPPORT BIODIVERSITY* IN THE RESIDENTIAL AREAS

Since the dawn of the mankind, human beings have been altering and adjusting the environment they live in. Cities haven't been any different. People have been building them up for themselves and their needs. On the other hand, the cities have been gradually losing their biodiversity. Until now. Nowadays we can feel how hard it is to live in a concrete jungle which is short of the green and, by means of negative climate change impacts, is turned into a dried heat trap. Are you familiar with that? It is a place we like to escape from to cool down ourselves and enjoy the nature around.

The means of how we can get the nature and its inhabitants back to the city to live a better standard of life and of what we can do so that even other organisms could thrive in the residential urban areas are disclosed in this leaflet you are currently holding in your hands...

* The word "**biodiversity**" stands for **diversity of life** ranging from viruses and bacteria, to fungi, to plants and animals.

How to support and enhance biodiversity in the residential urban areas?

THE GREEN

- to plant native species of plants, including bushes and trees
- to reduce mowing regime in the largest possible areas
- to set up flowery, herbaceous, and vegetable patches
- to form communal gardens and fruit orchards
- to include hedges from the native species of bushes and trees into the environment, including the edible ones
- to plant pollen source, nectar source and fructiferous plants
- to plant climbing plants (vines) next to the fences – green walls
- to set up green vegetative roofs
- not to plant invasive non-native plants
- to remove invasive non-native plants

ANIMALS

- to create shelters and nesting possibilities
- to integrate dead wood, stones, sand and water element into the environment
- to feed them during winter with appropriate food
- to provide them with water during summer
- to eliminate light pollution
- not to disturb and startle
- not to damage their shelters and nests

OTHER MEASURES

- to eliminate the usage of chemical agents, pesticides, and synthetic fertilisers
- not to use pyrotechnics
- to substitute road salt with alternative gentle means
- to extend previous and semi-pervious surfaces at the expense of impervious concrete-like and asphalt surfaces
- to manage rainwater

Old trees protected in the park, London

THE GREEN IN THE CITY

What are trees capable of?

- protect from the sun
- cool down the surrounding by water evaporating from leaves
- increase air humidity (a grown-up deciduous tree is able to evaporate between 100 to 400 litres of water a day!)
- leaves can absorb pollutants, i.e. polluting agents
- absorb dust
- reduce wind speed and flow
- reduce noise
- absorb precipitation
- by means of roots they secure a better soaking up of rainwater into the soil
- prevent from floods
- provide food and shelter to other organisms
- create a space for many organisms including animals
- decorate the surroundings

Fun fact

The pedunculate oak (*Quercus robur*) provides more than **1 000 species of organisms** with home, while *Ginkgo biloba* houses only 7 species and thuja (*Thuja occidentalis*) and cyprus (*Cupressus*) only 1 species (*Lamprodila festiva*, which may cause their death).

Did you know?

A silver linden, often planted instead of "our" linden tree, is toxic for pollinators. The nectar present in its flowers has a toxic effect, especially on bumblebees and, to a lesser extent, on bees as well. Bees, wasps and bumblebees are not capable of digesting this sugar since they lack the type of enzyme which assists in the process of digesting the sugar. Mannose-6-phosphate is accumulated in bees' bodies and in excessive quantities is the main cause for paralysis, even death.

Lawns with a reduced mowing regime

- the numbers of flowering plants are increasing each year, without planting!
- they trap carcinogenic dust and pollen allergens
- they protect from respiratory diseases
- they trap precipitations better, thus retaining moisture in the soil
- they eliminate floods
- plants withstand heat waves better
- by having a higher water vapour, they improve a local climate
- they are the food source for pollinators
- they create shelters for a plenty of animals
- they represent winter home for insect
- they save mowing related costs
- in times of droughts, they look better than dried up yellowish mown lawns

Fun fact

A number of invertebrates winter over in unmown plants and they are also a rich source of seeds for birds in winter. If we mow all lawns in fall, we shall steal animals' winter homes and their food and, by doing so, we threaten their successful survival in a harsh season.

Green walls

- we can plant climbing plants next to fences and walls
- insects find flowering plants providing nectar attractive, for instance ivy
- birds can nest in huge grown green walls
- we can also plant edible plants such as wine grape or Actinidia – kiwi; apart from animals, we, people, can enjoy eating these crops

Green roofs

- they mitigate the climate change impacts (they absorb carbon from the atmosphere)
- they avoid interior overheating in the building during summer and its cooling in winter
- they trap rainwater
- water vapour aids to cool down their surroundings
- they provide a shelter and, depending on the plants composition, the food especially for insects, spiders and other invertebrates
- they can be supplemented with waterers for birds and insects, insect home or other shelters

Fun fact

As many as **300 species of invertebrates** shall find their shelter on green roofs. In London, scientists are said to find rare species of bugs and new species of spiders on green roofs.

BIRDS

- are the environment bioindicators; where they thrive so will other organisms
- they spread plants' seeds and feed on insects
- in winter, they are fed by seeds (sunflower, millet, corn), fatballs; yet they will appreciate your apples too
- we do not feed waterfowl (swans, ducks, etc.) human food, as it harms them; if we cannot resist the impulse to offer them something small, in winter time, we can feed them grind cereal corns or chopped vegetable leaves, or, eventually, food intended for such purposes; the best option is not to feed them at all and let them search for food on their own
- in summer we shall provide them with drinking water
  - the bowl mustn't be deep, there is a risk of drowning
  - the bowl of water must be placed out of cat's reach, on a high place
  - if we place stones into the bowl, it may serve as a swimming pool
  - regular water refill is required
- during dry spring, common house martin and swallows shall be supplied with water they need for the building material for their nests
- to prevent birds from flying into glass panels and windows, we can put to use screens (curtains, drapes, roll-tops, shades), or even using the UV pen or UV sticks on the glass, which reflect UV light. The most dangerous are transparent glasses birds cannot see and reflective glasses that reflect their own surroundings and in such a way birds are led to believe there are no barriers

To sum it up, let's make a wish for our city to bloom, chirp and buzz and for all of us to find our wishful home.

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You will find more information on the project on

odolnesidliska.sk

broz.sk/deliver

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Life