

COOK BOOK



Rules to select plants
for city NBS

Rules to select plants for city Nature Based Solutions

1

RAIN GARDENS

Urbanization of the landscape is leading to increased rainwater runoff and a reduction in the diversity of native plant and animal species. Water is diverted into storm drains and watercourses. Too little water soaks into the soil. .

Surface runoff of polluted rainwater degrades water quality in rivers and reservoirs. It also causes soil erosion.

Rainwater from impervious areas (e.g., roofs, concrete pavement) should be directed to adjacent areas that form a bioretention system and collected there.

Bioretention is a method of rain-water management using vegetation, which also allows water to be cleaned of pollutants by a living complex of plants and soil micro-organisms (phytoremediation).

A bioretention basin is an artificial or natural depression of land covered with plants, used to slow down runoff and absorb rainwater.

Bioretention basin with a properly selected set of plants and a drainage system are called rain gardens.

Bioretention and rain gardens can be used to **increase biodiversity** in an area and restore or mimic natural hydrological processes by improving the soaking of rainwater into the ground (infiltration).

Infiltration rain gardens prevent the loss of a valuable resource such as rainwater.



Rain garden on Zwycięstwa Avenue in Gdynia

- rainwater bioretention,
- reducing the amount of rainwater discharged into storm drains from sidewalks, streets and roofs,
- drainage of waterlogged land: a rain garden absorbs up to 40% more water than a lawn,
- improving the microclimate: easing temperature differences in the neighborhood (concrete heats up faster), higher humidity,
- purification of rainwater runoff by plants that capture pollutants,
- improved aesthetics of urban space,
- low maintenance costs,
- increasing local biodiversity by introducing more species (preferably native plants),
- creation of habitat for wildlife: shelter and food base for animals.



Rain garden on Zwycięstwa Avenue in Gdynia

The idea of rain gardens is fairly new. The origins date back to the 1980s. The first rainwater retention gardens were created in the United States, and the forerunners were landscape architects in the state of Maryland.

Nowadays, rain gardens are promoted on a large scale, especially in the United States, New Zealand and Western European countries. Increasingly, they are also being established in Poland.

Rain gardens can be established in public spaces, next to institutions and companies, or on private plots. They are simple, low-cost, low-tech solutions.

There are distinctions between rain gardens:

- in the ground,
- in a container.

Interesting facts

Preparing a green drainage investment, such as a rain garden, is cheaper, faster and less hassle than building a traditional stormwater drainage network.



Rain garden on Śliwkowa Street in Gdynia

Inground rain gardens resemble ordinary green squares, flowerbeds or flower meadows, located in a slightly recessed area, below the level of the surrounding ground. They absorb water from adjacent impermeable surfaces. They are characterized by a special construction, with layers of drainage, which facilitates the penetration of water into deeper layers.

Infiltration gardens created on permeable ground, or so-called "dry" rain gardens, container gardens and plant species suitable for such gardens will be covered. Aquatic and marsh plants, intended for planting in rain gardens with sealed bottoms (so-called "wet" rain gardens), in ponds, artificial wetlands, hydrobotanical pots, are not included.

Interesting facts

An infiltrating rain garden is not a breeding ground for mosquitoes. The development of a mosquito in the aquatic environment - from egg to adult - lasts 9-16 days, while water in a rain garden soaks into the ground in no more than 2-3 days.



Rain garden on Śliwkowa Street in Gdynia

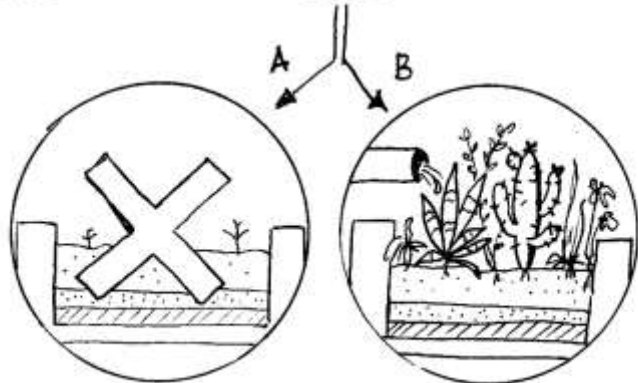
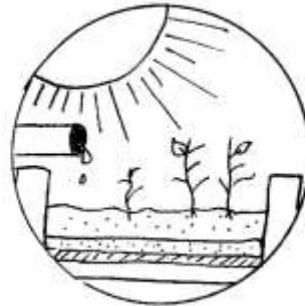
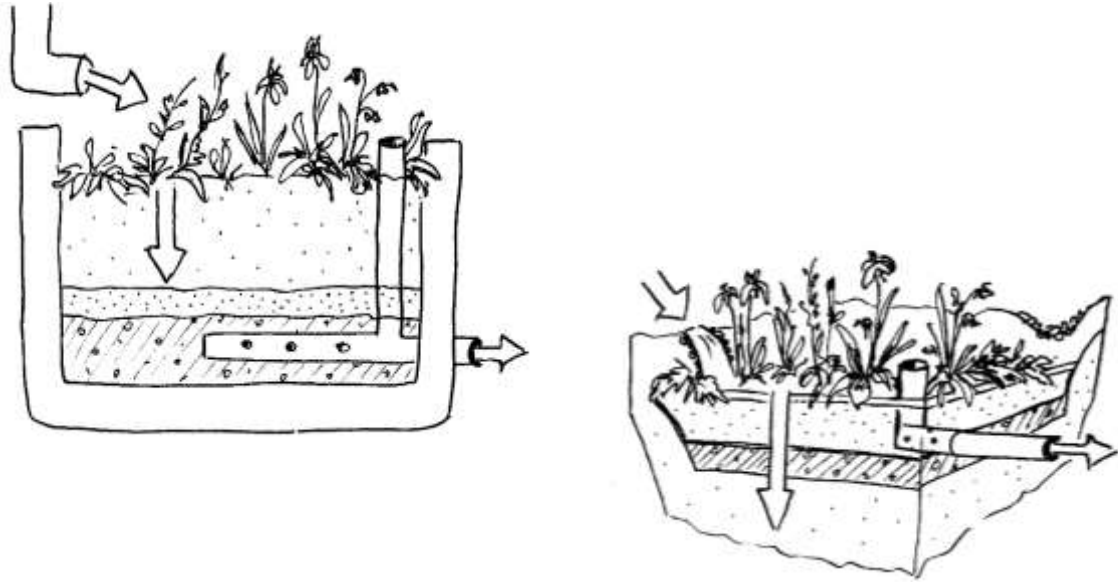
A container rain garden is a box with plants placed at the gutter outlet. This solution is primarily designed to directly absorb water flowing from the roofs of buildings.

Boxes up to 80 cm high, made of reinforced concrete, wood or plastic, work best. The ground should have a suitable structure.

A rain garden in a container should be equipped with a drain and an emergency overflow (overflow pipe) for draining excess water; the overflow opening should be covered with an openwork cover. The outflow can be connected in a bioretention system to the inground rain garden, an infiltration well or a storm drain sump.



Rain garden in a container on Swietojanska Street in Gdynia



Rain gardens take different forms - in terms of construction, shape, size, composition, selection of plants. It is easy to flexibly fit them into any space.

As with garden style, a rain garden can be formal, naturalistic or a combination of both conventions.

Formal style garden - is based on an orderly, symmetrical layout, rhythmic composition, geometric shapes. It is characterized by elegance and order. Maintaining such a composition is more labor-intensive than in the case of naturalistic gardens. It is not always possible to maintain the formal arrangement. Over time, plants growing close to each other spread to the sides and mix with each other.

From formal gardens come modern minimalist gardens, sparing in plant species, forms and colors. Minimalist gardens work well in metropolitan areas and around modern buildings. Biodiversity in such gardens remains at a low level.

A naturalistic garden refers to natural plant communities and draws ideas from local landscapes. It has a free-flowing character, is full of intermingling plants, and human interference is kept to a minimum. It provides shelter and food for local fauna. In a naturalistic garden, it is better to give up foreign species in favor of native plants.



Rain garden on Zwycięstwa Avenue in Gdynia

When choosing a place for the establishment of a rain garden, we take into account the following conditions:

- **Proximity to buildings** - the minimum distance of an infiltrating rain garden from a building is 5 m, for a garden in a container - 30 cm, to avoid dampness of the wall.
- **Proximity to utilities (installations) and technical equipment** - access to existing technical equipment (such as connection boxes) or networks running underground must be maintained.
- **Proximity to woody plants** - root damage hinders work and can be harmful to trees and shrubs.
- **Slope of the terrain** - rain gardens are established in areas with a slight slope of the terrain (up to about 10-12%), so that water can flow freely and seep into the ground.
- **Sun exposure** - we choose plant species depending on whether the garden is in shade, semi-shade or a sunny spot.
- **Groundwater level** - should be at least 1.5 meters below the level of the infiltrating rain garden.
- **Soil permeability** - this parameter determines how quickly rainwater will be absorbed; permeability can be modified with a layer of drainage.
- **Landscaping** - a visually attractive rain garden is worth locating in an exposed area.



Rain garden on Śliwkowa Street in Gdynia

Properly designed rain gardens are an aesthetically pleasing, eye-catching element of an urban space.

Advantages of a rain garden:

- ease of care,
- no need for watering (after plants have grown and outside of dry periods),
- no need for fertilization,
- the possibility of combining rain gardens into an extensive system.

Interesting facts

In rain gardens, plant root systems, together with microorganisms that populate the ground, reduce and neutralize contaminants washed off the pavement and carried by water, such as pesticides, herbicides, heavy metals, animal droppings, rotting plant residues, and petroleum substances.

European
cranberrybush
'Roseum'
Viburnum opulus



Plants are the most important element of a rain garden, and they determine its appearance.

The rain garden uses plants that prefer moist habitats, which at the same time tolerate both periodic flooding and drying of the ground. In addition to wild, native plants from variegated habitats, these are often foreign species that grow in traditional gardens, on average soil - not very dry and not very wet.

Due to the nature of the rain garden, associated with water, it is advisable to choose plants with the right habit and appearance, characterized by lush, succulent foliage, with large or sword-shaped blades.

In infiltrating rain gardens, avoid planting aquatic and swamp plants (such as duckbill, marsh vermilion, water arrow), which cannot withstand prolonged drought. As a result of moisture deficiency, they look unattractive or die quickly.

Blue Moorweed
'Variegata'
Molinia caerulea



In rain gardens, we primarily plant native, local plant species. Native - that is, occurring within the limits of their natural range in the area where the garden is created.

Plants of foreign origin, i.e. brought by man from other geographical areas, are not recommended. Avoid planting alien species especially near watercourses and in open areas, from where they can easily penetrate into natural plant communities.

Do not plant in gardens invasive, potentially invasive and expansive species that are easily wild, which can crowd out native flora.

Rain gardens planted with appropriate native plant species can become naturally rich habitats for local flora and fauna, even in the center of a large city.

There are plant communities in Poland from which we can draw examples of species that perform well in rain garden conditions, that is, tolerate both periodic flooding and longer periods of drought.

Rainy flower meadow is one of the variants of naturalistic dry rain garden. It is based on a combination of native perennials found in moderately fertile moist meadows, so-called Molinia meadows, where the ground water level varies throughout the year and the ground can become dry in summer. Molinia meadows are usually mowed once a year, or even every 2-3 years or less frequently. In our climate, Molinia meadows are among the plant communities that are the richest in species and most colorful.

Water avens
Geum rivale



Garden angelicas
Angelica archangelica



Siberian iris
Iris sibirica



Guelder rose
Viburnum opulus



Goat's beard
Aruncus sylvestris



Alchemilla
*Alchemilla
xanthochlora*



Purple loosestrife
Lythrum salicaria



In naturalistic rain gardens, native plant species look best.

It is worth choosing perennials in such a way that something blooms throughout the season in the garden.



Bistorta officinalis
Polygonum bistorta



Meadow crane's-bill
Geranium pratense



Blue bugle
Ajuga reptans



Dusky crane's-bill
Geranium phaeum



Siberian iris 'Blue Mere'
Iris sibirica



Great burnet
Sanguisorba officinalis



Yellow loosestrife
Lysimachia vulgaris



Male fern 'Linearis'
Dryopteris filix-mas



Valerian
Valeriana officinalis



Brown knapweed
Centaurea jacea



Common soapwort
'Rosea Plena'
Saponaria officinalis



True forget-me-not
Myosotis scorpioides

Ostrich fern
*Matteucia
struthiopteris*



Formal-style rain gardens use foreign plants in addition to native species.

Choose perennials that are attractive throughout the season, tolerate harsh habitat conditions and are healthy, not attacked by diseases or pests.

Day Lilies
Hemerocallis cv.



Eastern purple coneflower
Echinacea purpurea



Hostas 'Abiqua Drinking Gourd'



Fall phlox
Phlox paniculata



Bergenia
Bergenia sp.





Bird cherry
Prunus padus



Black elder
Sambucus nigra



Common ivy
'Profesor Seneta'
Hedera helix



Alder buckthorn
Frangula alnus



Common dogwood
Cornus sanguinea

Birch 'Youngii'
Betula pendula



Rowan
Sorbus aucuparia



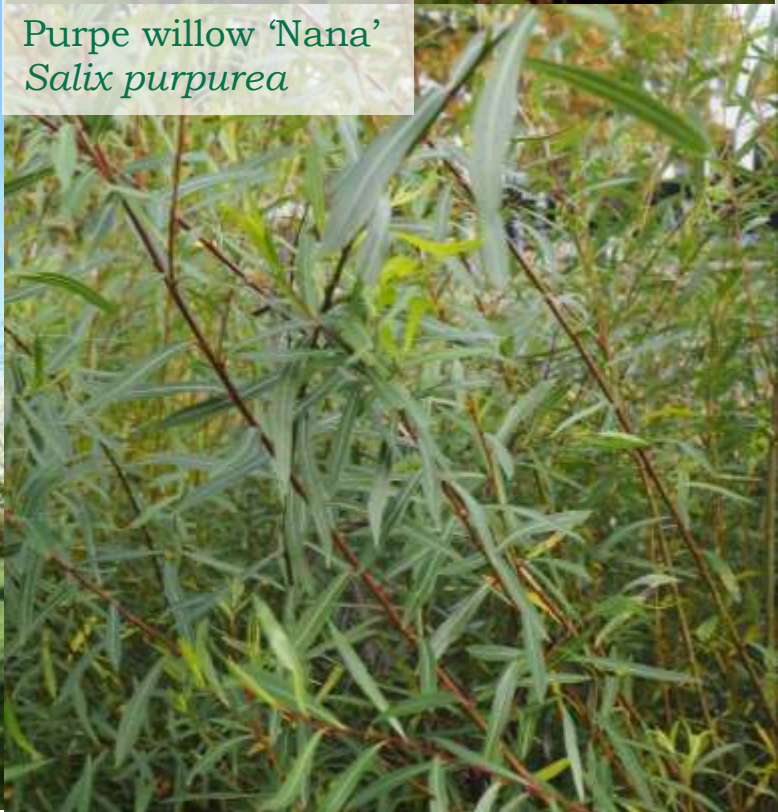
Common alder
'Imperialis'
Alnus glutinosa



Common hornbeam
'Columnaris'
Carpinus betulus



Purpe willow 'Nana'
Salix purpurea



Bald cypress
Taxodium distichum



Katsura
Cercidiphyllum japonicum



Pin oak
Quercus palustris



Buttonbush
Cephalanthus occidentalis



American sweetgum
Liquidambar styraciflua



Black chokeberry
Aronia melanocarpa



Before buying plants, draw up a planting plan - either on your own or with the help of a landscape architect who specializes in rain garden design.

A list of plant species and varieties should be prepared, along with the number of specimens. Spontaneous purchases may cause the temptation to acquire species that are not always suitable for the conditions of the habitat you have and not always in optimal quantity. Without a plan, it is easy to succumb to the aesthetic charms of the offerings.

Within a given species, there may be cultivated varieties (cultivars) with different sizes, habit, leaf or flower color, flowering season, etc.

When choosing plants for the garden, it is necessary to keep in mind their habitat requirements (sunlight, soil moisture and pH, etc.), habit and size of the mature plant, matching shapes and colors of leaves and flowers. Species with a wide ecological range should be preferred.

In the foreground, we plant low plants, or particularly showy plants that are worth seeing up close. Taller species are usually planted in the background..

Species of very large size, architectural or particularly valuable and attractive can be planted individually as solitaires.

In the planting plan, the largest plants should be plotted first, forming the "scaffolding" of the garden, around which smaller species are grouped.

Larger groups of plants of a particular species or variety, forming a distinct "spot", usually look more impressive than single plants.

We buy plants from reputable nurseries or garden stores. When choosing plants, we are guided by the healthy appearance of the seedling. It should show signs of fresh growth. It is best to choose plants produced in containers.

The number of plants needed can be roughly calculated on the basis of their target size: we plant low species and varieties at a spacing of 10-30 cm, and for tall plants it should be at least half of their target height

It is important to take into account that in the right conditions plants grow quickly. One small seedling sprouts more and more rhizomes or rhizomes over time. The number of plants in 3-4 years can increase - approximately - up to ten times.

Alchemilla
Alchemilla acutiloba



Heart-leaved oxeye
Telekia speciosa



Plants produced in containers can be planted at almost any time of the year, except during the frost period. They acclimatize better in a new place if they are planted outside the summer period. Transplanting plants from containers minimizes damage associated with disturbance and drying of the root ball.

Plants in rain gardens should be planted 10-15% denser than recommendations for the species in traditional gardens.

Plants in a container are planted even more densely to make the garden look attractive from the beginning. It is better to avoid overloading with different species. In the case of containers, minimalist plantings, composed of a few species, make a better impression.

Plant cuttings of plants in pots are distributed over the garden area so as to achieve the desired visual effect.

In naturalistic gardens, individual species are best placed singly or in small groups, irregularly, randomly - so that the whole composition reflects the environment of plants in natural communities. It is inadvisable to use only plants of one species (monoculture) due to the greater threat from diseases and pests.

We dig holes in the places where we want to plant plants - at least of such a size that when the seedling is inserted, the root ball does not protrude above ground level. If the soil at the planting site is weak and sandy, you can mix it with compost soil.

Before putting the seedling into the pit, remove the plant from the casing (in the case of plants grown in containers), turning "upside down", and loosen (or even gently cut) the root ball if it is heavily overgrown. Then we press the root ball of the seedling, backfill the voids around it with soil, and thoroughly tamp the soil so that it is firmly embedded in it.

Plant to the depth at which the plant has grown so far. Plant the trees so that the root neck (the short section between the roots and the stem) is uncovered.

After planting, we water all plants intensively. We make up for the lack of substrate if the garden has settled unevenly during watering.

After planting, it is a good idea to cover the surface with a 3-5 cm layer of wood chips or bark. This will hinder the growth of unwanted plants.

Royal fern
Osmunda regalis



Caring for plants in a rain garden is easy.

It boils down to watering freshly planted seedlings. It's also a good idea to water plants during prolonged drought.

In a rain garden we do not use fertilizers or chemical pesticides.

On an ongoing basis, we remove above-ground fragments of plants that are withered, broken, unsightly. You can cut out after flowering the forming fruits or fruiting bodies, if you do not want the plants to spread.

In spring, we cut low above the ground all the dead parts of perennials, form shrubs and pluck the withered leaves of evergreens.

Mint
Mentha sp.



Page	Description
1	Rain garden on Zwycięstwa Avenue in Gdynia - in the foreground the Lady's Mantle (<i>Alchemilla acutiloba</i> Opiz)
2	Rain garden on Zwycięstwa Avenue in Gdynia – Faassena catnip (<i>Nepeta x faassenii</i> Bergmans) in the foreground
3	Rain garden on Śliwkowa Street in Gdynia
4	Rain garden on Śliwkowa Street in Gdynia
5	Rain garden in a container on Swietojanska Street in Gdynia
6	Rain garden on Zwycięstwa Avenue in Gdynia
7	Rain garden on Śliwkowa Street in Gdynia

PICTURES OF PLANTS

Page	SPECIES	FORM	HEIGHT	DECORATIVE VALUES	POSITION	SUBSTRATE MOISTURE	ORIGIN
9	European cranberrybush 'Roseum' <i>Viburnum opulus</i> L. 'Roseum'	shrub	3-5 m	white flowers (May-June); variety with spherical inflorescences	semi-shady, sunny	moderately moist, moist	cultivar; native species; Europe, Asia
10	Blue Moorweed 'Variegata' <i>Molinia caerulea</i> (L.) Moench 'Variegata'	perennial	0,3-1 m	ornamental grass; variety with cream-striped leaves	sunny, semi-shaded	moderately moist, moist, water-logged	cultivar; native species; northern hemisphere
11	Water avens <i>Geum rivale</i> L.	perennial	15-70 cm	maroon outer perianth leaves (April-May), original infructescences	semi-shady, sunny	moist, water-logged	native species; northern hemisphere; flower meadows
11	Garden angelicas <i>Angelica archangelica</i> L.	biennial plant	1,5-2,5 m	a magnificent architectural plant	sunny, semi-shaded	moist, moderately moist	native species; Europe, Asia
12	Siberian iris <i>Iris sibirica</i> L.	perennial	40-90 cm	large blue-violet flowers (May-June)	sunny	moist, water-logged, moderately moist	native species; Europe, Asia
12	Guelder rose <i>Viburnum opulus</i> L.	shrub	3-5 m	white flowers (May-June); red fruit	semi-shady, sunny	moderately moist, moist	native species; Europe, Asia
13	Goat's beard <i>Aruncus sylvestris</i> Kostel.	perennial	0,8-1,7 m	cream flowers in fluffy panicles (June-July)	semi-shaded, shady, sunny	moderately moist, moist	native species; northern hemisphere
13	Alchemilla <i>Alchemilla xanthochlora</i> Rothm.	perennial	40-50 cm	ornamental leaves and inflorescences, groundcover	sunny, semi-shaded	moist, moderately moist	native species; Europe
13	Purple loosestrife <i>Lythrum salicaria</i> L.	perennial	0,5-1,2 m	pink-violet flowers in slender inflorescences (July-September)	sunny, semi-shaded	moist, water-logged, moderately moist	native species; Europe, Asia
14	Bistorta <i>officinalis</i>	perennial	0,2-1 m	pink flowers in cylindrical	sunny, semi-shaded	moist, water-logged,	native species; Europe,

	<i>Polygonum bistorta</i> L.			spikes (May-July)		moderately moist	Asia; flower meadows, flowerbeds
14	Meadow crane's-bill <i>Geranium pratense</i> L.	perennial	30-80 cm	large blue-lilac flowers (June-September)	sunny, semi-shaded	moderately moist, moist	native species; Europe, Asia; flower meadows
14	Blue bugle <i>Ajuga reptans</i> L.	perennial	15-30 cm	blue flowers (April-August), groundcover	semi-shaded, shady, sunny	moderately moist, moist	native species; Europe, Asia
14	Dusky crane's-bill <i>Geranium phaeum</i> L.	perennial	30-70 cm	dark purple flowers; groundcover	semi-shady, sunny	moist, moderately moist	native species; Europe, Asia; flower meadows, flowerbeds
14	Siberian iris 'Blue Mere' <i>Iris sibirica</i> L. 'Blue Mere'	perennial	40-90 cm	large blue-violet flowers (May-June)	sunny	moist, water-logged, moderately moist	cultivar; native species; Europe, Asia
14	Great burnet <i>Sanguisorba officinalis</i> L.	perennial	0,6-1,4 m	dark maroon inflorescences (June-September)	sunny, semi-shaded	moist, moderately moist	native species; Europe, Asia; flower meadows
15	Yellow loosestrife <i>Lysimachia vulgaris</i> L.	perennial	0,4-1,2 m	yellow flowers (June-August)	sunny, semi-shaded	moist, water-logged, moderately moist	native species; Europe, Asia; flower meadows
15	Male fern 'Linearis' <i>Dryopteris filix-mas</i> (L.) Schott	perennial	40-90 cm	fern with decorative leaves	semi-shady, shadowy	moist, moderately moist	cultivar; native species; northern hemisphere
15	Valerian <i>Valeriana officinalis</i> L.	perennial	0,5-1,7 m	pale pink flowers (June-July)	semi-shady, shadowy	moist, moderately moist	native species; Europe, Asia; flower meadows
15	Brown knapweed <i>Centaurea jacea</i> L.	perennial	0,2-1,2 m	purple-pink flowers (June-October)	sunny	moderately moist, moist	native species; Europe, Asia; flower meadows
15	True forget-me-not <i>Myosotis scorpioides</i> L.	perennial	15-60 cm	blue flowers (V-September)	semi-shady, shadowy	moist, moderately moist	native species; Europe, Asia; flower meadows
15	Common soapwort 'Rosea Plena' <i>Saponaria officinalis</i> L. 'Rosea Plena'	perennial	30-80 cm	double pink flowers (June-September)	sunny, semi-shaded	moderately moist, moist	cultivar; native species; Europe, Asia; flower meadows
16	Ostrich fern <i>Matteucia struthiopteris</i> (L.) Tod.	perennial	0,5-1,7 m	fern with decorative leaves	semi-shaded, shady, sunny	moist, moderately moist, water-logged	native species; Europe, Asia; flowerbeds

17	Day Lilies <i>Hemerocallis</i> cv.	perennial	30-90 cm	large, orange, yellow flowers (June-October)	semi-shady, shadowy	moderately moist, moist	Garden hybrid; Asia; flowerbeds
17	Eastern purple coneflower <i>Echinacea purpurea</i> (L.) Moench	perennial	0,5-1 m	purple flowers (June-October)	sunny, semi-shaded	moderately moist	North America; flowerbeds
17	Fall phlox <i>Phlox paniculata</i> L.	perennial	0,5-1,2 m	purple-pink, pink, white, lilac flowers (June-September)	sunny, semi-shaded	moderately moist, moist	North America; flowerbeds
17	Hostas 'Abiqua Drinking Gourd' <i>Hosta</i> 'Abiqua Drinking Gourd'	perennial	0,5-1 m	decorative leaves	semi-shaded, shady, sunny	moderately moist, moist	cultivar; Asia; flowerbeds
17	Bergenia <i>Bergenia</i> sp.	perennial	40-50 cm	decorative leaves, pink flowers (April-May)	semi-shaded, shady, sunny	moderately moist, moist	Asia; flowerbeds
18	Bird cherry <i>Prunus padus</i> L.	shrub/tree	5-15 m	white, fragrant flowers (V)	semi-shaded, shady, sunny	moderately moist, moist	native species; Europe, Asia
18	Black elder <i>Sambucus nigra</i> L.	shrub	3-7 m	cream flowers (May-June)	semi-shady, sunny	moderately moist, moist	native species; Europe, Asia
18	Common ivy 'Profesor Seneta' <i>Hedera helix</i> L. 'Profesor Seneta'	climber	3-10 m	decorative variegated leaves; as a ground cover or climbing plant	semi-shaded, shady, sunny	moderately moist, moist	cultivar; native species; Europe, Asia
18	Common dogwood <i>Cornus sanguinea</i> L.	shrub	4-6 m	cream flowers (May-June), navy blue fruits	partial shade, sunny, shady	moderately moist, moist	native species; Europe, Asia
18	Alder buckthorn <i>Frangula alnus</i> Mill.	shrub	3-6 m	the caterpillars of the lemon summer leaf butterfly (<i>Gonepteryx rhamni</i>) feed on the leaves.	semi-shady, sunny	moderately moist, moist	native species; Europe, Asia
19	Birch 'Youngii' <i>Betula pendula</i> Roth 'Youngii'	tree	1-3 m	Umbrella-shaped grafted forms	sunny, semi-shaded	moderately moist	cultivar; native species; Europe, Asia
19	Common alder 'Imperialis' <i>Alnus glutinosa</i> (L.) Gaertn. 'Youngii'	tree	5-8 m	a variety with feathery leaves and an openwork habit	sunny, semi-shaded	moderately moist, moist	cultivar; native species; Europe, Asia
19	Rowan <i>Sorbus aucuparia</i> L.	tree	5-15 m	orange fruits are food for birds	sunny, semi-shaded	moderately moist	native species; Europe, Asia

19	Common hornbeam 'Columnaris' <i>Carpinus betulus</i> L. 'Columnaris'	tree	3-5 m	a variety with a regular conical habit	sunny, semi-shaded, shady	moderately moist	cultivar; native species; Europa
19	Purpe willow 'Nana' <i>Salix purpurea</i> L.	shrub	2-3	spherical, dense habit	sunny	moderately moist, moist	cultivar; native species; Europe, Asia
20	Bald cypress <i>Taxodium distichum</i> (L.) Rich.	tree	10-20 m	regular habit, fluffy crown; spectacular fall color	sunny	moderately moist, moist, water-logged	North America
20	Katsura <i>Cercidiphyllum japonicum</i> Siebold et Zucc.	tree	5-20 m	openwork crown, sweet smell of autumn leaves; spectacular fall color	partial shade	moderately moist, moist	China, Japan
20	Pin oak <i>Quercus palustris</i> Muenchh.	tree	15-25 m	spectacular fall color	sunny, semi-shaded	moderately moist, moist	North America
20	Buttonbush <i>Cephalanthus occidentalis</i> L.	shrub	1,5-2 m	attractive spherical inflorescences (July-September)	sunny, semi-shaded	moderately moist, moist, water-logged	North America
20	American sweetgum <i>Liquidambar styraciflua</i> L.	tree	10-20 m	spectacular fall color	sunny, semi-shaded	moderately moist, moist, water-logged	North America
20	Black chokeberry <i>Aronia melanocarpa</i> (Michx.) Elliott	shrub	2-2,5 m	black fruit, spectacular autumn color	sunny, semi-shaded	moderately moist, moist	North America
22	Alchemilla <i>Alchemilla acutiloba</i> Opiz	perennial	30-45 cm	attractive leaves, yellow flowers (June-August)	sunny, semi-shaded, shady	moderately moist, moist	Europe, Asia
22	Heart-leaved oxeye <i>Telekia speciosa</i> (Schreb.) Baumg.	perennial	1-2 m	yellow flowers (June-September)	semi-shady, shadowy	moderately moist, moist	native species; Europe, Asia
24	Royal fern <i>Osmunda regalis</i> L.	perennial	0,5-1,8 m	fern with decorative leaves	semi-shady, shadowy	moderately moist, moist	native species; Europe, Asia
25	Mint <i>Mentha</i> sp.	perennial	30-80 cm	menthol-scented leaves	sunny, semi-shaded, shady	moderately moist, moist	many species, including native ones
30	Carex Graya <i>Carex grayi</i> J.Carey	perennial	30-90 cm	ornamental spiky fruits	semi-shady, sunny	moist, moderately moist	North America

Carex Graya
Carex grayi

