



Descriptive part of garden concepts (draft)

Developed by a consortium of project partners

1. Background

Lifestyle of today's society with increasing urbanization, technological systems and extensive consumption habits challenges people's well-being in many ways. Lifestyle diseases are increasing. New solutions for maintaining health need to be found as all the challenges cannot be dealt with solely by means of medicine. The key is to find a lifestyle that offers value to people of all ages and with different abilities.

In order to fulfill the output proposed by the project, focus will here be on concepts relevant for public authorities, research and education institutions. Three main garden themes will be included: **recreation** (health maintenance), **health promotion** (therapeutic, healing), and **education**. There is also significant overlap between the three themes; a garden can contain all of them or be focused on one or more functions.

2. Overview of key features for recreation, health promotion and education gardens.

Ulrich (1999) has identified four key aspects of gardens, which facilitate health benefits: (1) the sense of control (related to the power of choosing how to use the space), (2) social support (facilitation of social encounters), (3) opportunity for physical activity with different intensities, (4) positive natural distractions (e.g. birdsong, colors, shapes to contribute to the overall calming atmosphere. Accordingly, the key features were chosen to overview interactive garden design in the **Table** below.

The activities in the gardens should be accustomed according to the local resources and potentials. Features and activities have to be in compliance with all work safety requirements and the national regulations. More in-depth descriptions of the three garden themes are found in section 4.

Table: Overview of key features for the three gardens themes **recreation** (health maintenance), **health promotion** (therapeutic, healing), and **education**.

Key features	Recreation	Health promotion	Education
Accessibility, design and safety	“Disability becomes a handicap if the physical environment causes limits to movement” (Winterbottom & Wagenfeld, 2015). Thus, it is important to secure an accessible design, suitable for various activities: paths, benches, and other structures that make them accessible to all, including individuals with mobility issues or other disabilities. Free circulation. Seating arrangements designed to be accessible also to wheelchair users. Safe infrastructure, enough light for comfort and safety,.		
	Inviting entrances and structures. Areas with well-defined paths and good space, possibly other areas with winding paths and “labyrinths”. Garden elements for leisure activities.	Spacious design with well-defined paths. Simple and year-round use of spaces. Enough of privacy. Private spaces for therapeutic sessions. Places for physical activities. Enough light for comfort and safety, both day and night	Part of or close to educational institutes. Infrastructure for group work in different weather conditions. Play and educational structures considering the age of participants
Nature contact and sensory experience	The gardens must engage all senses with landscape, diverse textures, colors, fragrances, and sounds, helping individuals relax and reconnect with nature.		
	Availability of various nature areas and experiences with various plants and animals, including water elements. Objects and information, which help to “discover”	Inviting and empowering nature contacts. -	Getting familiar with local nature and sustainable ways of living

	the plants – raised beds, sound effects etc.		
Social support/social interaction	Promotion of supporting and balanced social connection Involvement of residents in the creation and improvement of the gardens/green areas.		
	Socializing activities like sitting, having picnics, playing, sporting and gaming. Introducing and maintaining local cultural activities.	Providing safety. Supporting social contacts in the group or individual sessions with a guide or therapist.	Supporting and engaging social contacts/team building in the group with a teacher/training manager.
Sense of control	The green space for citizen use is protected from industrial noise. Quiet spaces for meditation, reflection, or simply observing nature are present.		
	Personal orientation towards activities or tranquil spaces. Various guided services.	Orientation in psychologically and physically safe environment supported by a guide or therapist. Also navigation available for individual/self-oriented visits.	Familiar and psychologically safe environment. Learning to manage risks. Allows for mistakes. Free space for creativity. Possibility to combine guided work with independent work.
Opportunity for the activities	Various kinds of physical and mental activities, offerings for individual and group needs. Nature guides will be needed, in future, more often, since people are living in towns and cities, and have lost both the knowledge and skill to interact with nature.		
Sustainability	Across themes, gardens should aim to be designed to be ecologically sustainable and can include native plants, water-saving irrigation systems and wildlife habitats, contributing to climate change mitigation, habitat connectivity and biodiversity.		

	Considering the garden object effect on wildlife by garden planning.		
	Plants and garden elements which naturally increase the level of comfort – shading, air quality, noise reduction etc.	Focus on native plants and local nature discovering their benefits to human health.	Teaching the sustainable management of gardens and green areas, self-sufficiency (food), habitat resilience.
Risks	Assurance of privacy, sound, and visual noise (it is recommended that activities in the garden should be quiet, but this is not always possible). Increasing maintenance criteria. Low perceived accessibility. Users' alienation from nature. Emphasis on aesthetic designs. The pressure to transform green areas to the urban building and energy producing facilities. Eco-efficient land use requirements. Financial sustainability. Adaptation to changing weather conditions. Illegal data collection by wrong QR codes in public spaces The lack of materials/elements in the market (e.g. plants, tailored furniture). Vandalism.		

3. User surveys in gardens (still in progress).

To enable constant development/improvement of garden concepts, input from user groups is invaluable. For feedback getting, a short survey with dichotomous statements with yes/no answers was piloted. The survey is simple to fill out and it is possible to organize in different ways - by printed lists, by internet (webropol) as well as by active/creative methods - e.g. giving answers by “voting tokens” from nature elements. Such surveys are fast, don’t burden the customers and may even support the wellbeing effects.

The statements:

- 1) I got useful information and ideas for my own life and hobbies.
- 2) I got general information on nature, environment and food producing.

- 3) My mind is refreshed. This was a nice break to my everyday life.
- 4) It was great to experience nature and animals.
- 5) I could calm down, and gain some peace of mind.
- 6) I got some nice daily exercise. My body thanks me!

- 7) It was nice to contact other people.
- 8) Good food (picnic, cafeteria) was an important part of the trip.
- 9) The weather of the day was good and suitable for my activities.

- 10) There were enough services in the park (e.g. toilet, cafe, parking space, guidance).
- 11) Actually, there was nothing special for me

Use of QR codes linking to response giving options – still in progress

4. Descriptions of garden themes.

4.1. Gardens and green areas for recreation.

4.1.1. Garden concepts in relation to social needs and locality.

Gardens provide leisure and rest, but they also help to maintain the health and getting familiar with nature even without a targeted intention of the visitor. People who have regular recreation, especially in nature, are cognitively stimulated, more creative and energized. At the same time, recreational gardens can essentially improve the biodiversity by giving place for nature (plants and/or micro- and macro fauna (e.g. birds, insects) in the cities and connecting the areas outside of the cities.

The public gardens and other public green areas (laid out for recreation) provide significant benefits for the society as:

- Everyday feelings about nature and changing seasons (might be also unconscious for children who grew up in cities).
- The need for fresh air, sunlight (which was repeatedly emphasized in the meetings) as well as shelter from the sun during heat waves (gardens changes the microclimate of the cities by reducing winds, cooling temperatures etc.).
- Outdoor place for leisure personal and societal activities (e.g., conversations, children playgrounds, dog walking, reading), and for cultural events
- The balance of socializing: in the city – need to relax from the crowding and rejoin nature, in rural areas – need to socialize.
- The balance of physical and mental activities in everyday life: places for peaceful and active rest (including the objects and plants with stimulating or calming properties).

4.1.2. Elements and layouts for the interactive garden for recreation.

Important design elements and infrastructure of the recreation garden are:

- Inviting entrances with a view to the garden: a safe place (for the meeting) with the option to obtain water, snacks, get knowledge about the services.

- Good accessibility, and equipment for easier mobility for elderly people (rollators), children, people with disabilities.
- .
- Clear information to easily find the services: garden map, navigation signs, also navigation using electronic devices.
- .
- Nature contact - green territories, landscape, plants for different senses - colors, sound, touch, aroma. taste in all seasons, variable terrain, water elements, multi-layered vegetation, birdhouses.
- Areas with well-defined paths and good space, Marker stones for blind people to navigate through the area
- Possibly other areas with winding paths and "labyrinth
- Communal seating or activity areas, encouraging people to gather, interact, and participate in garden.
- Places for active and peaceful rest that are separated by plants, garden objects or distance.
- Places for various weather conditions – large trees, green architecture, combined also with artificial sheds to hide from the sun, rain and wind, equipped for battery charging (for telephone, bike, car).
- Navigation signs combined with distinctive garden objects which are easy to find, additional attractive information about nature could be added in navigation points.
- All year round attractive objects to see and activities to do.
- The attention to nature objects raised by artificial effects – art objects, audioguides, sounds, lightening, informational stands, QR codes, real-time information of air quality, soil quality.
- Storytelling, that creates meanings and integrates people with their local environment.

4.1.3. Risks

- Plants can be damaged, when visitors seek sensory experiences
- Allergic reactions
- Risky contacts with nature – mites, ticks, wasps, poisonous plants, water rats.
- Unsafe surfaces (uneven or slippery).
- Nature fears with harmless fauna (spiders, grass snakes).

4.1.4. Interactive tools for feedback receiving and response getting from garden visitors.

- QR codes with short questions as a tool for the involvement and interest raising. Changing the questions, objects and the places that are surveyed.
- Evaluating the garden objects by group observation (using standardized protocols).
- Evaluation by user statistics, for instance, the share of various groups of users can be traced for. Are there enough options for children and youth as well as for elderly people? What about people with various vulnerabilities, are they able to benefit from the wellbeing effects of nature?

- Surveys with a motivation to answer questions by giving some benefits (snack, coffee etc.).
- Virtual garden model to explain the garden development over the seasons and time and discuss it with society groups.
- Activities in social media.

4.1.5. Examples of gardens for recreation

Project partner's gardens and green areas

- Aukstaitija Protected Areas: Development of the landscape in previously degraded area. Recreation park, information, lilac plantations, events, protective fence against beavers.
- Rakvere: Parkali Promenade in the city center: designing new type of soil as a pilot, exchange high maintenance plants with lower maintenance or native plants, increasing species diversity. Surveying weather, air pollutants, mobility. Information and education.
- ZPR, Aizkraukle:
 1. Garden near the river, landscape, natural colors for nature observing. Workshop for building of wicker fence.
 2. Place for active recreation with outdoor drum set.
- ZPR, Bauska: The areas for active rest and recreation in the city separated by plantings.
- Dobeles: Garden with esthetic, functional and health value for all age habitants. Rest area with benches will be created. Fireplace, willow arches, designed for active recreation and relaxing elements, which will be integrated into the thematic willow park. Involvement of the residents in the creation.
- ZPR, Jelgava: Manor park with tree stories, brail elements, sounds, touch, nature observing.

Mākalns Garden

Other examples in BSR countries

- Terapihaven Vestre Kirkegaard, Copenhagen, Denmark,
<https://www.kk.dk/brug-byen/byens-groenne-oaser/terapihaven>
- Bangsbo Botaniske Have, Frederikshavn, Denmark,
<https://bangsbobotaniskehave.dk/sansehaven/>
- National Urban parks In Finland there are ten national urban parks with the aim to preserve urban nature and the built cultural environment as integrated entities. They are living rooms of city residents.

4.2. Gardens and green areas for health promotion - healing, therapy and well-being

4.2.1. Garden concepts in relation to social needs and locality.

In many regions, there are already nice gardens and other green areas, while their use could still be increased and diversified. There exist major potentials still to be discovered.

Appropriately designed green areas and public gardens can significantly promote the health of citizens. Such type gardens and green areas cover the needs for:

- Physical and mental health maintenance.
- Immunity boosting.
- Stress release.
- Improvement of cognitive abilities.
- Green area for the recovery after illnesses.
- Green area for rehabilitation after physical and mental traumatic experience.
- Nature- (og garden-) assisted integration for immigrants in multicultural groups.

Gardens for health promotion have ancient roots, dating back to Greeks focusing on the medicinal utilization of herbs and aromatic plants. The concept has evolved through history, in the cloister gardens of the Middle Ages, when healing was sought through a communication with nature to rejuvenate body and mind, and during the Victorian era recommending the use of fresh air and sunlight for recovery. Since 18th century, the gardens used to be integrated into hospital settings. After a decline in the mid-20th century, the benefits of being close to nature resurged in the 1990s, leading to the incorporation of gardens in patient-centered hospitals due to their therapeutic benefits.

Healing gardens are essential elements in many types of healthcare, as greenery can reduce stress caused by illness, hospitalization or treatment, and facilitate recovery after surgery. Therapeutic activities in the gardens are used to promote motor skills, social inclusion, management of sensory processing disorders, cognition and problem-solving in people with special needs. In healthcare settings, it is important to give the opportunity for stress relief in the garden both for the companions of patients, caregivers and the medical staff.

Gardens and green areas are indispensable for maintaining health in a hectic lifestyle. Much evidence exists about the calming and relaxing effects of nature. These effects can be revealed by detecting the heart rate, blood pressure, muscle tension and stress hormones. The positive effects of nature can be seen by the increase in positive emotions and by the recovery of the body and mind.

Public green spaces also provide plenty of physical activities. Nature enables natural moving, which includes a wide range of exercises to maintain balance, agility, endurance and muscle strength. Optimally, nature gets you moving all year round and under various weather conditions. In addition, the regular exposure to nature is boosting the immune systems and decreasing the risks for allergies and other autoimmune diseases.

Also, exposure to sun light increases the production of serotonin, which is an important hormone that stabilizes our mood, feelings of well-being, and happiness.

Various terminology and approaches are used to describe and apply health promotion in the gardens, (which must be considered searching the information).

Generally, well-being is understood as being healthy and happy. While having a more profound understanding, the elements – endurance, resilience, flexibility and strength can be highlighted in more details. The aim is that a person feels good in his body both physically and emotionally. Gardens (promoting physical, emotional, and psychological well-being serve for health maintenance) are also boosting the immune systems and decreasing the risks of autoimmune diseases.

Beneficial nature effects can be also related with social participation and meaningful activities, which enable people to attach themselves to their immediate environment and the community. These effects are further reflected by the person's self-esteem and ability to manage his/her everyday responsibilities.

Regarding nature (including garden) therapy, there are at least two approaches(in the world) on how to understand and apply it. With the first approach, therapeutic effect is provided mainly by nature and the garden, in itself. The educated guide (e.g. from the Association of Nature & Forest therapy) helps the processes to happen so that the garden can exert the maximal therapeutic effect on the person. The garden is a therapist, the guide that opens the doors. These practices reduce the impact of stress, burn out as well as promote faster recovery, but without a specific goal or exact result that should be achieved. In a way, nature and garden gives a person the best that he needs at the specific stage of his life, in that situation. In the second approach, the therapeutic activities are led by the therapist with a medical education, with specific rehabilitation goals, and the garden serves as a favorable environment for these activities.

Important: the regulations of using terms “garden therapy”, “therapeutic gardens “ and “health forests” as well as the authorisation of the use the title of garden therapist differ in each country, and current legislation must be followed.

The term “healing” can be used in a broad sense to characterize a process that promotes overall well-being (Stigsdotter and Grahn 2002). In another approach, the terms “healing” and “healing gardens” are related to recovery after physical and mental trauma (Yang, 2010). In such cases, the healing garden needs to be purposefully chosen and designed, and the process has to be guided by a therapist.

There is a significant overlap among these garden properties, and the nature impact and favorable effects may refer both to well-being, therapy and healing.

4.2.2. Elements and layouts for the interactive garden for health promotion.

Here are the main requirements for garden therapy that are provided by an educated guide. In various gardens, the set of the elements can differ and various adaptations can be added.

- The path length should be adjusted to the physical condition of visitors.
- Objects with water fit well in therapy gardens with their sound and reflection, but deep or fast waters should be avoided.

- Clear lines of paths and plantings are preferred instead of labyrinths. Clear lines in garden planning are needed not only for safe movement, but they have also a calming effect on stressful mind.
- A view to the horizon line and sunset is essential element in therapy garden.
- In unknown places, the presence of a companion is needed for visually impaired visitors. Therefore, the width of paths must suit for at least 2 people walking next to each other.
- Many small fences/hedges should be avoided - they make it difficult to orientate and can cause injuries.
- Groundcover must be stable in the paths for wheelchairs and rollers. Flat, low cut lawn is suitable, but not the gravel and woodchips.
- A natural shield against street or industrial noise and human crowd is needed. (In larger green areas,) The plantings of trees and bushes, the hedges, hills and earth walls are used to stop the noise. However, in the city, it is possible to establish therapeutic garden also in courtyard, protected by building walls.
- Large trees are maintaining the history and life stories. They are home and refuge to many living creatures, and important elements of recovering therapy garden.
- Different plants and nature elements provide visual and sensory stimulation, contribute to mental relaxation, and improve air quality. To allow the visitors in wheelchairs to experience the aroma and touch of plants, the path must be near to the planting.
- There are many plants which attract attention, for instance, by colors, aroma, distinct height and form, edible and tasty fruits and fragrance. All the senses are present also in natural areas and with local plants, but they might be less noticeable. Informative materials and guidance can promote the awareness and sensory experience with these plants.
- In these gardens, it is important to show not only growing and flowering, but also aging and dying are interesting as senescent flowers after blooming time with seeds, fallen leaves, fallen trees and stumps.
- Additional elements for sensory experiences and motor skill promotion can be added as a bare-foot path with different textures and as activities with stones, sand etc. Tactile elements are welcome especially for visible impaired visitors.
- Paths and bridges are important structures in therapeutic use because they can be attached with metaphoric meanings.
- Place for meditation with enough privacy.
- The garden therapy often ends with tea or coffee. Therefore, a place for tea and coffee preparing and drinking with benches and tables tailored for people with different sizes and abilities should be located close to the exit.
- Places, like arenas, for group sessions and reflections for group therapy.
- Some people need more engaging and empowering activities in which animals are involved. The health promoting activities in green areas can be combined with the canine therapy, equine therapy etc.

With many patients it is more meaningful to consider nature-activities as a "resource" or "strength" (that enables the implementation of various health-related processes). This is especially important, if the focus of services is customer-orientated and the main purpose is to support the client as an active decision-maker in his/her own life.

Virtual nature elements certainly cannot replace the real activities in nature. However, it can be used to provide a certain gratifying experience and stress relief for immobile patients.

4.2.3. Risks

- Lost nature relationship and inabilities to find the health potentials of nature?
- Allergic response to certain plants (birch, populus).
- Garden management activities can disturb therapeutic activities, but can be also used as a tool to integrate people with daily activities.
- Coping with the changing weather conditions (e.g. using appropriate clothing).
- Low maintenance requirements do not always harmonise with therapy garden requirements.
- Assurance of privacy and silence, if necessary (sound, and visual noise). It is often recommended that activities in the garden should be quiet.
- Too many groups and activities can disturb each other, e.g. in canine therapy sessions.

4.2.4. Interactive tools for feedback receiving and response getting from garden visitors

In the processes for health promotion and therapy, it is important to get feedback and response not only from patients and clients but also from therapists and other specialists.

Basic information about the health promoting service in gardens can be obtained from surveys and inquiries. They can be filled out both by prints or by online tools. After the garden therapy (supported by the guide), the participants can be deeply relaxed and need a peaceful time to settle down feelings and experiences. Therefore, the feedback can be asked in the next few days after garden therapy. Some people need “digital detox”, which is another reason to spend at least a day between therapy sessions and online surveys.

For a profound evaluation, also the observations made by the professionals who are taking part in the intervention, are necessary.

There are also physical measurements available. For instance, stress reactions and the daily amounts of physical activities in the gardens and green areas can be easily traced by smart watches.

In our project, two types of surveys were piloted - the general one with dichotomous statements (described before) and the additional one - getting anonymous answers with open questions.

The survey with open questions:

1. Why did you apply for wellbeing practice in the garden and what did you expect from it?
2. How would you describe how you felt before the wellbeing practice in the garden?

3. What is the most vivid thing you remember and what do you want to take with you in your everyday life?
4. Did you notice any changes in yourself after the wellbeing practice in the garden?
5. What were the most important benefits for you personally and for your well-being?
6. What do you think are the common benefits of the group?

4.2.5. Examples of gardens for health promotion

Project partner's gardens and green areas

- Klaipeda: Japanese style garden, educational and recreational activities, supported by specialists, improved with shading, sound, sense elements.
- Birzai: Garden near the hospital, green area for stress release and mental health, also in digital way.
- LatHort: Garden practice with therapeutic purpose lead by an educated guide.
- Loue: Therapeutic garden used in social work for rehabilitation or integration programs.



Figure 1: Klaipėdas Japanese garden, Lithuania.

Other examples in BSR countries

- Terapihaven Moellebaek, Kolding, Denmark, <https://selvvaerddogsammenhaeng.dk/terapihaven-mollebaek/>
- Stensbæk Terapihave, Gram, Denmark, <https://www.stensbaek.com/terapihaven/>
- Hildegaards Have, Nyborg, Denmark, <https://abildgaardjensen.dk/hildegaards-have/>
- Health forest of Kouvola City Centre, Finland, (located next to new Ratamo hospital),

4.3. Gardens for education

4.3.1. Garden concepts in relation to social needs and locality

Exploration and learning is a life-long activity, necessary for society. Besides knowledge and practical skills, it maintains brain functions and gives a sense of satisfaction. Home gardening and community gardening are common and popular hobbies.

Many citizens wish to learn to improve their everyday life. These skill are also strengthening the society's resilience in general:

- Get, at least partially, food self-sufficient.
- Grow the fresh and tasty ingredients for the food. Keep garden plants with familiar tastes of childhood.
- Create beautiful home surroundings and have personally inspiring plants. Maintaining the local cultural heritage.
- Manage the gardens in an environmentally-friendly way.

For the vocational and higher education institutions and students, the gardens and green areas are suitable for obtaining practical skills and for supplementing knowledge with life sciences.

Schools and preschool children need outside learning besides their classrooms. This enables children to engage with their learning by their own senses and personal activities. The alternative environments for learning need to be easily achievable, in order to be regularly used.

“An education garden” is a specially designed outdoor space where people can learn about plants, gardening and environmental sustainability. These gardens are often part of educational institutions like schools or universities, community centers, botanical gardens, museums or environmental organizations and serve as “living classrooms” to teach a variety of subjects such as biology, ecology, nutrition, and horticulture.

In Denmark, ‘school gardens’ in the big cities have been a part of education for over a century. A school garden is an educational space where preschool and young school children engage in hands-on learning about gardening, nature, and sustainability. One example is Copenhagen School Garden: <https://kbhskolehaver.dk/>.

(In cities and densely populated urban areas in Denmark,) Communities are today emerging around different types of urban gardens where people meet and grow vegetables, fruit and other plants together. They can also be considered as educational, as garden users learn together and from each other. Urban gardens make use of small or unconventional spaces and can take many forms, ranging from small community gardens to personal container gardens, rooftop farms, and vertical gardens.

In Finland, schools and nurseries use local forests and nature areas in order to facilitate outdoor education. Especially “forest-preschools” are common. Methods of outdoor education can be used for a wide range of school subjects. Besides the academic skills they are also providing valuable support for the physical and psychological strengthening of the children.

Flexible learning environments are especially needed by those pupils who lack school motivation and run a high risk of exclusion from education. These pupils often do not get motivated by traditional teacher-led ways of learning, but instead they benefit e.g. from learning by doing. Versatile learning environments can include learning camps and field trips which strengthen the sense of belonging.

4.3.2. Elements and layouts for the interactive education garden.

- Collections of plant species and varieties that provide material for teaching, or illustrate horticulture in a historical context.
- Labeling of plants (plant family, species, variety).
- Engagement of pupils/students in maintenance work – to educate them in the meaning of care.
- Activities for mitigating climate change (e.g., mulching, green manure, green architecture etc.), resource-saving and enhanced biodiversity can be tested and learned.
- Sections designed to attract bees, butterflies, and other pollinators can be built, providing a real-world example of biodiversity and the importance of pollinators to ecosystems.
- Beds for growing flowers, vegetables, herbs, and native plants can be used to learn about plant life cycles, pollination, and ecosystems.
- Using of plants that contribute to the purification of rain and precipitation water. Composting and recycling areas to teach sustainable practices like composting organic waste and the importance of recycling.
- Educational games for various knowledge levels.
- The smart technology elements for easier management and better comprehension of information – QR codes with links to the information websites about the particular information on plants and garden management, 3D garden plans, virtual garden models.

4.3.3. Risks

- Pollution affects on the quality of edible plants, if the garden is located in the city or near to traffic lines.
- Work safety using garden instruments.
- Plant protection may require separating the treated area from visitors or informing about it with warning signs.
- Differences in background, interests, and wishes of learners of one group. Physical strength. Fear and bad mood.
- Giving of unreliable, too one-sided or out-dated information.

4.3.4. Interactive tools for feedback receiving and response getting from garden

- Schools and nurseries are following their results normally by testing. Therefore, also the changes while using alternative learning environments can be noticed. Improving social and psychological skills will be shown by decreasing the amount of problematic behavior and conflicting situations.
- Discussions with the teachers.
- Observation of the group engagement.
- The questions and answers using interactive presentation software (e.g. Mentimeter), quick quiz.

4.2.5. Examples of education gardens

Project partner's gardens and green areas

- Aarhus: Living Lab to show the horticultural research activities at AU-Auning, historical garden. AU Auning is a 37 hectares field research site/garden for organic and conventional vegetables, legumes, fruit and berries under the Department of Food Science. The garden is used for the university's teaching at bachelor and master level, and it is also a training site for horticultural students.
<https://food.au.dk/research-and-innovation/facilities>.
- The Green Museum historical garden, "The Agricultural Botanical Garden at the Green Museum, Auning, Denmark,
<https://detgroennemuseum.dk/viden/den-levende-kulturarv/>
- Rakvere: Native plants for health, biodiversity, pollinators, resource saving.
- Dobeles: Native plants for health and water quality, wastewater treatment.
- Tukums: Water garden and Garden School. Permanent and thematic expositions – colors, patterns, herbs. Joint garden management, events.
- ZPR, Jekabpils: School garden with flowers, bushes, herbs for experiments and education.
- LatHort: Horticultural plants at different times, growing systems for biodiversity and climate resilience. Food baskets from local plants.
- The Garden of the Agricultural University, Denmark, <https://plen.ku.dk/pfv/haven>
- Elonkierto Park. Exhibition park for rural natural resources where you can learn how humans and nature work together. <https://www.elonkierto.fi/en/>



Figure 2b: AU-Auning Education Garden, Denmark. Apples in the education orchard.



Figure 2a: AU-Auning Education Garden, Denmark. Pea plots for research and education.

Other examples in BSR countries

- Copenhagen Botanical Garden, Denmark,
<https://www.nucleus.dk/files/docs/regnskoven/3BrugBotaniskHaveiundervisningenmf.pdf>
- Oestergro Roof Farm, Copenhagen, <https://www.oestergro.dk/>
- Moellevangens Byhave, Aarhus, <https://mollevangensbyhave.dk/>
- Kamu, early education, Helsinki, Finland.
<https://www.kamueducation.fi/nature-daycare>

5. Available planning materials

Plants with sensory qualities. Links to suggestions:

- <https://www.growjoy.com/therapeutic-garden>
- <https://discoverandshare.org/2021/03/16/top-10-plants-for-a-sensory-experience/>
- <https://schoolgardening.rhs.org.uk/resources/info-sheet/plants-for-a-sensory-garden>
- https://www.gvsu.edu/cms4/asset/41BD4140-E833-EC59-3F25827028CDBF83/ian_warnock_sensory_garden_ideas_and_plant_lists_2017.pdf
- <https://naturejobs.squarespace.com/sensory-plants-list>
- <https://www.kew.org/read-and-watch/how-to-create-a-sensory-garden>
- <https://terrafirmalandscapes.co.uk/latest-news/a-guide-to-sensory-garden-design>
- https://fireflyfarmandmercantile.com/collections/sensory-garden-collection?srltid=AfmBOoq5ilB5apMqdYEbKoruUph4rTyYA187xT1DpL-ZUQce-_Cv2LAr&page=3
- <https://www.gardeners.com/how-to/create-a-sensory-garden/9673.html?srltid=AfmBOopXcLcgVzHcZjFGgrdFM7XRbZE7FybS6pKRU6mT3RRIdo7DV4in>

6. References

Hanson, H. I., E. Eckberg, M. Widenberg and J. Alkan Olsson (2021). "Gardens' contribution to people and urban green space." *Urban Forestry & Urban Greening* 63: 127198.

Stigsdotter, U. and P. Grahm (2002). "What Makes a Garden a Healing Garden?" *Journal of Therapeutic Horticulture* 13: 60-69.

Ulrich, R. S. (1984). "View through a window may influence recovery from surgery." *Science* 224(4647): 420-421.

Winterbottom, D. & A. Wagenfeld, 2015. Therapeutic Gardens: Design for Healing Spaces.

Yung Chin Yang (2010). A healing garden for adults with posttraumatic stress disorder in Shiaolin Village, Taiwan. Thesis for the degree of Master of Science in Landscape Architecture, Washington State University, Department of Horticulture and Landscape Architecture.

ex.libraries.wsu.edu/esploro/outputs/graduate/A-healing-garden-for-adults-with/99900525030101842.