

How to design a nursing home garden?

An evidence-based
practice toolkit



Colophon

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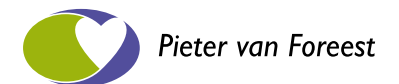
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Introduction

This toolkit was developed for organizations that want to create a garden based on evidence-based practice specifically for nursing homes.

In recent years, there has been an increase in the number of studies focusing on the effects of being outdoors on people living with dementia in nursing homes. Overall, preliminary results suggest positive effects of garden use on quality of life, behavioral and psychological symptoms of dementia, and other outcomes related to quality of life or behavioral and psychological symptoms (stress, sleep, mood), as well as physical and cognitive functioning. Qualitative studies that examined the benefits, barriers, personalization, and impact of garden use on quality of life have uncovered themes related to the experiences and possible mechanisms of the positive effects of being outdoors from the perspectives of people living with dementia, nursing home staff, and family members. Garden use appears to have a positive impact on quality of life by promoting a sense of freedom, social interaction, a calming effect, memories, and enjoyment.

Despite these benefits, it seems that being outside is still not a regular part of daily nursing home practice. Most people living with dementia in nursing homes spend their days being inactive, lying down or sitting, and on average more than 90% of residents stay on their wards during the day.

In addition to staffing, resident safety, weather and seasons, design of the main building and social activities, the design (process) can also be an enabler or a barrier to garden use in nursing homes. This toolkit aims to guide organizations through the process of (re)designing an existing or new garden into a nursing home garden based on evidence-based practice.

It was developed as part of the doctoral research of Melanie van der Velde-van Buuringen, in partnership with Pieter van Foreest, the academic networks for elderly care University Network for the Care Sector South Holland (UNC-ZH) and the Living Lab in Ageing and Long-Term Care (AWO Limburg), and garden and landscape architect Els Beekhuis van der Weijde.

The study aims to understand the effects of garden use and its implementation in the daily lives of people living with dementia in nursing homes. Do you want to learn more about this study? Scan the QR-code.

This toolkit consists of the foundations, the design process, a roadmap and the Nursing Home Garden Checklist. All were developed based on this research.

This toolkit is a living document designed to optimize nursing home gardens. This is a dynamic process and feedback is greatly appreciated. Feedback regarding the garden can be sent to Els Beekhuis van der Weijde (els@bureau-weijde.nl) and feedback regarding the process to Melanie van der Velde-van Buuringen (unc-zh@lumc.nl).



Foundations

Stakeholders

Who do you need to design a nursing home garden?

- The board
- Location manager
- Project team:
 - The commissioner of the project / Principal
 - Project manager
 - Project management support person
 - Garden and landscape architect
 - Organization's housing manager
 - Elderly care physician
 - Psychologist
 - Occupational therapist
 - Team managers/welfare managers
 - (Care) staff representative(s)
 - Client representative(s)
 - Family representative(s)

Step-by-step procedure

Before getting started with the roadmap of this toolkit, it is important to establish the following preconditions:

- ✓ Approval from the board to start the project
- ✓ Approval from location manager
- ✓ Approval from / information to client council
- ✓ Formation of project team
 - First meeting: Establish roles and responsibilities of all parties involved, as well as working arrangements
 - Second meeting: Establish plan of action (at a minimum: Investment in terms of hours, money, time schedule)
 - Start with toolkit roadmap



Design process

Step 1 Program of Requirements



The members of the project team work together to draw up a program of requirements. Who will be the user groups of the garden? Will people from outside the nursing home be able to use the garden? To what extent will the garden be freely accessible to the nursing home residents?



Step 2 The Nursing Home Garden Checklist (NHGC)



The Nursing Home Garden Checklist (NHGC) is based on factors that affect the daily use of the garden. It is completed by at least 3 members of the project team, one of whom must be the garden and landscape architect. Elements on which members of the project team have provided different answers must be discussed. The results of the requirements program and the checklist are interpreted by the garden and landscape architect, who will then translate them into a first draft version of the garden improvement plan.



Step 3 Survey



All project team members review and discuss version 1 of the draft garden improvement plan. They then decide which questions they want answered by the garden's user groups. These user groups may include clients, (in)formal caregivers, volunteers, and others. These questions can then, for example, be collected in a survey and distributed to all user groups. Another option is to conduct semi-structured interviews.

Step 4 In-house expertise



The garden and landscape architect translates the survey results into version 2 of the draft garden improvement plan. This second version is discussed with representatives from various disciplines within the organization, such as occupational therapists, physical therapists, and psychologists. Their expertise covers different aspects of garden use, for example, regarding safety and experience.



Step 5 Definitive improvement plan



The garden and landscape architect translates the outcomes of the feedback from the various disciplines into version 3 of the draft garden improvement plan. This version is discussed with all members of the project team. The garden and landscape architect then translates the results of this final discussion into a definitive version of the garden improvement plan..



Step 6 Evaluation

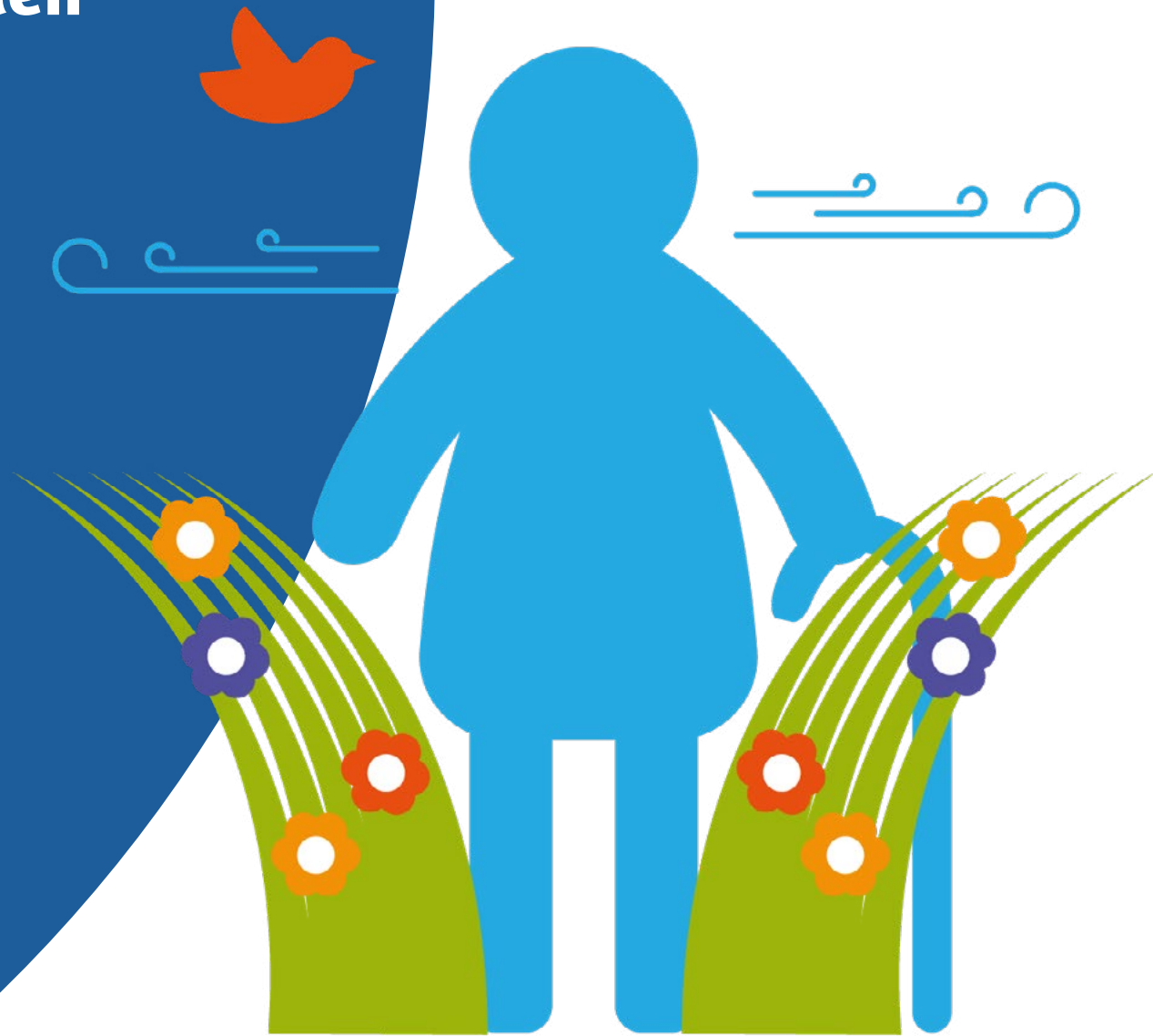


One year after the garden has been realized, the NHGC is completed again by at least 3 members of the project team, which must include the garden and landscape architect. The results are compared with the previous year. Any action points are assigned.

Roadmap

Step	Action	Who
1	Draw up the Program of Requirements	Project team
2a	Complete the Nursing Home Garden Checklist (NHGC)	At least three members of the project team, which must include the garden and landscape architect
2b	Discuss results of the NHGC and find consensus on differences	The same three members of the project team, which must include the garden and landscape architect
2c	Draw up version 1 of draft garden improvement plan	Garden and landscape architect
3a	Discuss version 1 of draft garden improvement plan	Project team
3b	Decide which questions should be answered by the user groups (for example, clients, (in)formal caregivers, and volunteers) of the garden	Projectteam
3c	Prepare and distribute a Survey to all user groups. Another option is to conduct semi-structured interviews	Project team
3d	Discuss results of survey/semi-structured interviews	Project team
4a	Prepare version 2 of draft garden improvement plan	Garden and landscape architect
4b	Discuss version 2 of draft improvement plan garden with in-house experts	Representatives from different disciplines within the organization, such as occupational therapists, physical therapists and psychologists, who have expertise in different areas in garden use. For example, regarding the topics of safety and experience.
5a	Prepare version 3 of draft garden improvement plan	Garden and landscape architect
5b	Discuss version 3 of draft garden improvement plan	Project team
5c	Formulate definitive version of the garden improvement plan	Garden and landscape architect
6	Evaluation using the NHGC	At least three members of the project team, which must include the garden and landscape architect

De Nursing Home Garden Checklist (NHGC)



VITALE TUIN

1.

Accessibility: physical, cognitive, and permission

Residents should be able to go outside independently and unhindered, into the garden or onto the balcony. Ideally, everyone should have the possibility to go outside to a garden where risks are minimized. This will often mean that the garden is enclosed.

This theme is divided into three parts

1. Physical accessibility (can I go outside?);
2. Cognitive accessibility (am I aware that I can go outside, do I know how and does the idea appeal to me?);
3. Permission to go outside (am I allowed to go outside?).



1.1 Accessible garden, physical: can I go outside?		
1.1.1	Every resident can go outside into the garden or onto the balcony, with assistance if necessary.	
1.1.2	There is a direct connection between the living area (an area where residents spend most of their time) and the outdoor area. This connection is as short as possible.	
1.1.3	Opening the door does not require much effort or strength.	
1.2 Accessible garden, cognitive: am I aware that I can go outside, do I know how and does the idea appeal to me?		
1.2.1	The garden can be seen from inside the building.	
1.2.2	The door to the garden is clearly visible and you can see that it leads to the garden.	
1.2.3	Near the door is an area with a coat rack, clearly recognizable to residents as a coat rack.	
1.2.4	In case it rains outside, umbrellas, raincoats and rain boots are available at the coat rack, ready to use. These may be the residents' personal items, or extra second-hand items.	
1.2.5	In case it is cold outside, blankets, hats, scarves, and mittens/gloves are ready to use at the coat rack. These can be residents' personal items, or extra second-hand items.	
1.2.6	A toilet is located near the entrance and is clearly recognizable as such to residents.	
1.2.7	There are signs in the garden indicating where the toilet is located.	

1.2.8	Next to the entrance is a seating area that is clearly visible.	
1.2.9	The contrast between outside and inside is minimal. Difference in brightness is prevented, for example with a sunshade or pergola.	
1.2.10	Residents perceive the garden as being safe.	
1.2.11	There is an option for emergency communication when residents are out of sight of staff.	
1.3	Accessible garden: permission (am I allowed to go outside?)	
1.3.1	Employees agree that the garden has a predetermined safety level.	
1.3.2	Relatives agree that the garden has a predetermined safety level.	
1.3.3	The door is always open during the day, for example, between 10:00 and 16:00 hours. At other times residents can also go outside, but the door is closed and more assistance is therefore needed.	
1.3.4	There is no draft when the door is opened.	
1.3.5	The garden is visible from inside the building (staff can see the resident).	

2.

Safety

The garden should not present any danger to the residents that has not been discussed and accepted first. So the garden has a predetermined level of safety. Remember that it is impossible to make a garden 100% safe, just as it is impossible to make the building itself 100% safe. Risks are a fact of life. This theme consists of two elements:

- 1. A safe garden:** If the garden is not perceived as safe, residents will not feel free to use the garden, making it inaccessible, see point 1. For a garden to be used, the first requirement is therefore that it is a safe garden.
- 2. A pleasant garden:** The second element of a safe garden is the feel of the garden. Is it a pleasant place where people want to be, even in bad weather?



2.1 Safe garden	
2.1.1	It is not easy to walk out of the garden and leave the grounds.
2.1.2	Any necessary fences are incorporated in the greenery, match the green surroundings, or provide a nice view of the surrounding area. An alternative can be natural end points to the garden, such as a shed, conservatory, seating area or water point.
2.1.3	Gates are properly locked, high enough and concealed if possible.
2.1.4	Doors and gates that are recognizable as such, are also accessible to residents.
2.1.5	The surface is as flat as possible, with as few edges or indentations as possible..
2.1.6	There are no changes in colour or differences in colour intensity in the walking direction of the pathway (these are considered barriers).
2.1.7	The pathways are free of obstacles. Any unavoidable obstacles are marked with a contrasting colour.
2.1.8	The surface is not shiny, too light (due to reflection of sunlight) or light grey (take vision problems into account).
2.1.9	The edges of pathways are clearly visible. They can be darker or lighter, including greenery (e.g., grass).
2.1.10	Pergolas or other structures do not create confusing shadow patterns on the ground.

2.1.11	If the surface is not level, a handrail is provided.	
2.1.12	Pathways are wide enough (at least 150 cm). They may occasionally be narrower, but never less than 90 cm.	
2.1.13	The maximum inclination is 1:25 (4%).	
2.1.14	Any small stairs must be clearly visible, have a handrail and be in clear contrast with the surroundings. Handrail: between 850 mm and 950 mm high. Possibility of a second handrail at 600 mm. It should be no more than 50 mm in diameter and must be placed at least 50 mm away from a wall. In addition, alternative ways to get to your destination may consist of, e.g., cordoning off part of the stairs at a fair distance using an attractive stairgate, which shows you have to walk around the gate to get to the stairs.	
2.1.15	There are no plants with poisonous berries within easy reach in the garden.	
2.1.16	There are no sharp textured plants next to the pathway (some grasses can be very sharp).	
2.1.17	It is not possible to lose your way in the garden, you can see where you are going.	
2.2	Pleasant garden	
2.2.1	The residents have a clear overview over the green, natural, biodiverse environment.	
2.2.2	The garden has an area where you can sit by yourself quietly and sheltered.	

2.2.3	There is a part of the garden where you can be with other people.	
2.2.4	There are seats where you are protected from the wind.	
2.2.5	It is possible to sit in the sun (preferably in the morning and late afternoon).	
2.2.6	In the afternoon, it is possible to sit in the shade. Preferably shade from a tree or pergola, but at least a parasol. These must be simple parasols, which anyone can operate.	
2.2.7	It is possible to sit outside and stay dry when it rains.	
2.2.8	There are enough seats (at least every 100 metres).	
2.2.9	The seats can be used without assistance. (They have different heights because everyone is different, as well as (arm) rests)	
2.2.10	There is space for wheelchairs or mobility scooters next to each seat.	
2.2.11	There are seats with soft cushions that are clean and dry.	
2.2.12	From each seat, the next seat is already visible.	
2.2.13	Each seat has an interesting view. Each seat has a different view.	

2.2.14	The garden has enough intimacy, and there are sufficient seats where you can feel "at home", "normal" and "away from the nursing home for a while".	
2.2.15	The design of the garden matches what residents need: experience and recognition. There is a balance between feeling at home, peace and harmony, and adventure and excitement. Active versus passive.	
2.2.16	Garden furniture and other elements are recognizable to residents.	
2.2.17	It is not possible to walk behind the seats. From the seat, you have a view of as much as 6 metres.	
2.2.18	There is sufficient privacy in the garden, taking into account being visible from the building.	
2.2.19	There is no noise pollution from, for example, roads, air conditioners or a generator.	
2.2.20	There is no odour nuisance from, for example, a factory or a broken sewer system.	
2.2.21	It is not difficult to be able to eat and have a drink outside. For example, by providing water jugs and glasses.	

3.

Orientation

One very important aspect of resident autonomy in the garden is determined by the extent to which the garden can be interpreted by the resident. Three things should be very clear in any garden:

1. How do I access the garden;
2. Which route can I take in the garden; and
3. How can I leave the garden and re-enter the building?

Clarity regarding these three things can be achieved through careful design focused on visual guidance. Landmarks can be extremely helpful. For example, a sculpture, a bridge, a tree, a playground, animals, etc. Anything you would mention when giving directions to someone. Make sure that the right landmarks are also placed at the correct height. People are generally more inclined to look down rather than up.



3. Orientation	
3.1	It is easy to see where in the garden you are in relation to the door.
3.2	It is possible to walk at least one but preferably several different routes without having to turn back.
3.3	A logical, easy to follow pathway takes you back to the door.
3.4	You see greenery by the door that leads to the garden
3.5	Landmarks along the pathway make it easy to remember the route.
3.6	In case of a larger garden, the pathway is marked clearly. The markings are placed below a height of 120 cm.
3.7	It is easy to find your way back to the door that leads into the building.
3.8	If there are multiple doors: Each door has its own distinctive characteristics.
3.9	The garden is welcoming. It invites you to enter the garden and to walk further into the garden.
3.10	While walking, you clearly experience the transition from one part of the garden to another. For example, at a little bridge, a pergola, or an overgrown arch.

3.11	To avoid dead ends, there is always something at the end of a path. For example, a seat, a sculpture, etc.	
3.12	There are various garden features, and they are visible from a distance.	
3.13	If the garden is accessible at night: There is sufficient lighting to find your way around. These lights do not blind you or create unpleasant shadows.	
3.14	14 If the garden is not accessible at night: The garden is pleasantly lit so it is enjoyable to look at from inside the building.	
3.15	The garden is interesting and welcoming. The design is clear, but it is not boring.	
3.16	plan of the garden is available. For example, at each access point to the garden.	

4.

Social interaction

An important characteristic of an accessible garden is that it enables social interaction. The opportunity to meet other residents, family, friends and family carers is essential. Are there elements that can help start a conversation? Trying to focus on something other than yourself is known to stimulate communication. Interaction with animals can be a valuable addition to an accessible garden. As can having a connection with a day care centre, school or just the neighbourhood. However, it is also important that part of the garden remains a quiet place without 'forced' social interaction. Try to turn garden work into an experience for residents also, preferably during the day. For example, by making sure that there are chairs near where the work is being done and that the gardeners are in for a chat. Also, let the residents know when something is going on in the garden so they can watch if they want to.



4. Social contact	
4.1	The garden has terraces, where a larger group of people can gather to sit and relax, have a drink or something to eat.
4.2	There are smaller seating areas for groups of 2 or 3 people to sit.
4.3	These smaller seating areas provide a sense of security, are cosy and have plenty of greenery.
4.4	There is space for wheelchairs next to the benches or next to the table.
4.5	Pathways are wide enough (at least 150 cm) to allow walking side by side, even with a wheelchair. Occasionally they can be narrower, but never less than 90 cm.
4.6	There is a quiet place in the garden where staff can take a break without any residents being there.
4.7	It is possible to have a drink or something to eat (or it is possible to bring some from inside).
4.8	There is an area in the garden where it is possible to have a meal together.
4.9	There is an opportunity for grandchildren to play in the garden.
4.10	If there is a school or nursery nearby, they may also get access to the garden.
4.11	There are petting animals in the garden.

4.12	There are works of art in the garden. Ideally, they are changed regularly (including their location) so that they continue to attract attention.	
4.13	These works of art are chosen based on their ability to get a conversation going.	
4.14	The art does not evoke fear; takes into consideration that residents may no longer be able to read the context.	
4.15	Staff have the opportunity to do part of their work outdoors.	
4.16	Staff are encouraged, and supported, to do part of their work outdoors.	

5.

Meaningful activities

A large garden also provides space for a variety of activities. These activities should be tailored to the preferences, abilities and wishes of the residents and their loved ones. These can be things they used to do together, for example, the residents' talents or hobbies. There must be activities for all, keeping in mind all genders. It is important that the garden is a pleasant place for staff and visitors also. This increases the likelihood of residents going outside. For residents who do not want to participate in an activity, these activities should not be a barrier to going outside.

Provide variety in the level of liveliness. This can be done by placing several smaller tables instead of one very large one in the garden. One very large table can at times result in too many people being there. This in turn results in too much noise or residents not having a good overview. All activities should be suitable for the location. Activities should be compatible with the philosophy and culture of the location.



5. Meaningful activities	
5.1	There is a work area, which is also wheelchair accessible. The work area can also be used on sunny days.
5.2	The work area can also be used on rainy days.
5.3	There is a covered area, preferably overlooking the garden, where residents can work with plants.
5.4	There are animals to care for (or residents can watch how they are being cared for).
5.5	There are chickens, and it is possible to collect eggs.
5.6	There is an outdoor tap, (rainwater) cistern or watering can to water the plants.
5.7	There is a herb garden (raised if possible) where people can feel, smell, pick or water herbs.
5.8	There is a vegetable garden (raised if possible) where people can feel, smell, pick or water vegetables.
5.9	There is a flower garden (raised if possible) where people can feel, smell, pick or water flowers.
5.10	There is fruit to pick or eat in the garden.

5.11	Residents and staff have the possibility to work in the garden (collect leaves, cut the grass).	
5.12	Everything that is needed for meaningful outdoor activities is in a logical and visible place near or in the garden, complete and readily available. For example, a rack with brooms and rakes, boxes with items for creative activities, etc.	

6.

Reminiscence

Seeing and experiencing things from the past can be a good stimulus. It can be a topic of conversation, provide a sense of familiarity and it can also improve contact with loved ones. An effective garden that takes this into account requires knowledge about the residents' background. What did their own garden look like in the past? Do they recognize plants? What activities were they engaged in in the past?



6.	Reminiscence
6.1	The garden contains plants and garden furniture that residents used to have in their own gardens
6.2	Take the background of residents into consideration and integrate the local philosophy and culture of the location into the design.

7.

Stimulating the senses

The garden is also a place to stimulate the senses. Subtle stimuli can play an important role. Be aware of over- or understimulation. Distribute the stimuli across the garden. Don't concentrate them in one location but use them to encourage people to move through the garden.



7. Stimulating senses	
7.1	There are plants in the garden that have a distinct smell. These plants can be touched.
7.2	The garden contains plants that can be 'stroked'.
7.3	There are flowers in the garden for picking. These flowers are easily accessible and can also be taken inside.
7.4	Residents are aware that flowers can be picked to take inside.
7.5	The garden contains a colourful contrast of plants, of different heights.
7.6	The garden is attractive to birds, butterflies, and insects (there are berries, trees, bushes and lots of flowers all year round).
7.7	You can hear the leaves in the wind.
7.8	There is a pathway leading from sun to shade: you feel the difference in temperature.
7.9	There is a water element in the garden, at a convenient height to be touched. It is not too noisy.
7.10	Sensory stimuli such as sand, water or bare feet are present only if they fit the philosophy and are part of the residents' background.

7.11	There is a water bowl for birds to drink water.	
7.12	The garden has a table for plants and herbs. It has removable trays, so the plants can also be brought inside.	

8.

Orientation to time and place

Going outside every day can help to sense what time it is. Sunlight contributes to the ability to tell what time it is. Spending time in the morning and evening sun also contributes to vitamin D production. Afternoon sun should be avoided (see point 2).



8. Orientation to time and place	
8.1	The plants in the garden indicate which season it is.
8.2	The garden has interesting features for every season.
8.3	The garden consists of various sections, each with their own atmosphere.
8.4	The garden has its own character and fits well with the life philosophy and background of the residents.
8.5	The size of the elements makes you think you're in a garden.
8.6	It is possible to look at the outside world from the garden.
8.7	The garden is linked to local culture in terms of plant species and ornaments.

9.

Sustainability and assurance

A garden is sustainable, which means it is suitable for activities, the garden is meant to last for a long time, and it is flexible (i.e., it can adapt to necessary changes). Sustainability with regard to the city's ecosystem and nature is also relevant.



9. Sustainability and assurance	
9.1	There is room for organized activities.
9.2	The garden is adequately maintained.
9.3	The plants and materials that are used will last a long time and they are sturdy.
9.4	There is a budget for timely maintenance.
9.5	The garden contributes to biodiversity.
9.6	The garden maintenance team has a storage space.

10.

Greenery

The choice of greenery plays a role in many of the points discussed above. An important aspect here is a well-designed structure for the whole garden. Within this structure, the greenery can change over time. Sound knowledge of how the plants grow and how to maintain them is essential here. It is also important to know which plants are poisonous. Make sure to use plants that the residents recognize.



10. Beplanting	
10.1	The greenery is planted by a professional.
10.2	The greenery is maintained by a professional.
10.3	Changes to the garden will always involve a professional.
10.4	The ideal contrast between grey and green is 30:70.
10.5	Use many different types of plants in different colors.

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