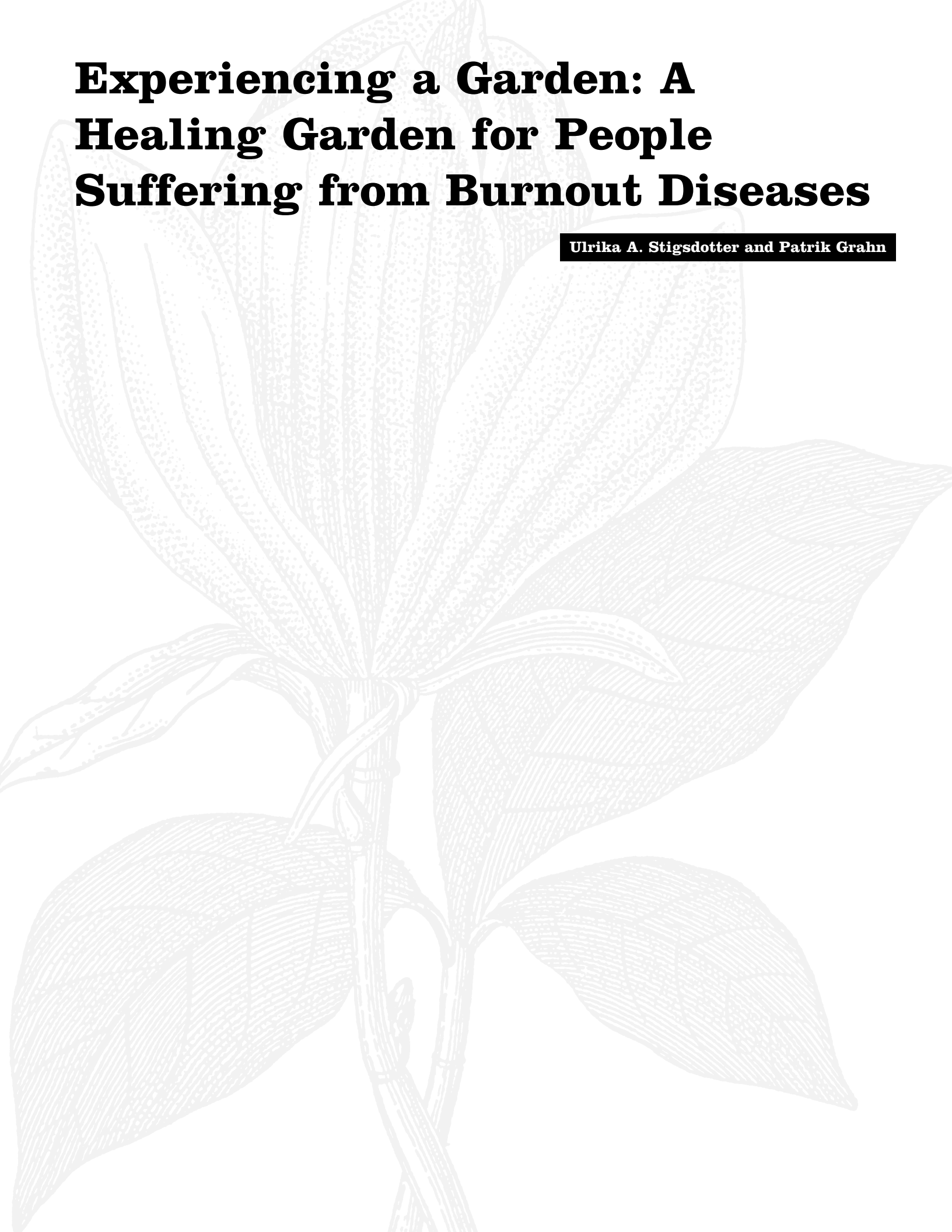


Experiencing a Garden: A Healing Garden for People Suffering from Burnout Diseases

Ulrika A. Stigsdotter and Patrik Grahn



A healing garden is being laid out at the Swedish University of Agricultural Sciences' Alnarp campus. The garden is intended to serve several purposes. It will offer horticultural therapeutic treatment programs for people diagnosed as having had burnout disease for an extended period. An interdisciplinary research program will study how the garden functions for these people. Scientists will test different design hypotheses connected with the garden as well as different forms of horticultural therapy. The garden will also serve as an object of study for students. This article describes and discusses the project's background and the process leading to the final design of the garden.

BACKGROUND

At the time of this writing, autumn 2002, a garden is being laid out at the Swedish University of Agricultural Sciences' Alnarp campus in southern Sweden. The garden is intended to be a healing garden: a garden that, in different ways, influences the visitor in a positive way (Cooper Marcus & Barnes, 1999). In a prior article "What Makes a Garden a Healing Garden?" (Stigsdotter & Grahn, 2002), the authors sorted theories of healing effects of gardens stemming from different research disciplines into three different schools:

- *The Healing Garden School.* The health effects are derived above all from the experiences of the garden room as such, its design, and contents.
- *The Horticultural Therapy School.* The health effects are derived primarily from the activities in the garden room.
- *The Instorative School* (formerly the Cognitive School). The health effects are derived from the experiences of the garden room as such, from the activities in the garden room, and the visitor's background and character: experiences of which give the visitor a feeling of belonging and identity.

The aim of creating the Healing Garden at Alnarp is to investigate how well the above-mentioned three schools can predict how participants behave in a garden, what they like and dislike there and, above all, whether, and how quickly, they recover. This aim has directed the design of the garden as well as the activities carried out in it. In some parts of the garden, the design is influenced primarily by the theories put forth by the Horticultural Therapy School, in other parts those of the Healing Garden School or the Instorative School. In the Healing Garden at Alnarp campus, all schools have had an equal amount of influence from the outset.

The Healing Garden at Alnarp covers about two hectares and offers both nature-like areas with restorative qualities and more traditional cultivation areas with plant beds and qualities focusing on activity. The garden is intended to:

- Offer different horticultural therapeutic treatment programs to people suffering from "burnout diseases"
- Provide a setting for an interdisciplinary research program that will study how the garden functions for these people
- Allow scientists to test different design hypotheses connected with the garden as well as different forms of horticultural therapy
- Serve as an object of study for students

The design of the garden has been developed under the direction of landscape architect and Associate Professor Patrik Grahn who is responsible for the project. He has worked in

close cooperation with landscape architects Sara Lundström, Ulrika A. Stigsdotter, and Frederik Tauchnitz. Other experts such as physiotherapists and horticultural therapists have been consulted during the design phase.

The purpose of this article is to describe and interpret the basic design of the Healing Garden at Alnarp as well as the working process itself. The article consists of two parts. The first part describes the project's theoretical background and working process and the second part describes, explains, and interprets the garden's design.

THE HEALING GARDEN: A MULTIDISCIPLINARY PROJECT

The staff of the Healing Garden at Alnarp will be organized into two teams: a treatment team that cares for the patients and a research team that follows and evaluates the treatment activities and how well the design of the garden functions.

The Research Team

The research approach will be multidisciplinary. The team will consist of four landscape architects, two occupational therapists, two psychiatrists, one rehabilitation physician, and one environmental psychologist. Of these, two landscape architects, one occupational therapist, and one psychiatrist will work full-time with these studies. The landscape architects, whose research during the past 20 years has focused on restorative rest and visual experiences, will collaborate with the occupational and horticultural therapists, whose approach has centered on activities. They will also have the opportunity to collaborate with a behavioral scientist as well as doctors in psychiatric and rehabilitative medicine. The landscape architects mainly will test and compare different design hypotheses. The behavioral scientists will focus on how the garden is used, whereas the occupational therapists and doctors in rehabilitative medicine will evaluate the patients' motor activity, pain, and activities of daily living. The psychiatrists will also study the patients' stress hormone cortisol via saliva tests, concentration capacity using various tests, and mood, sense of coherence, self-esteem, etc. using self-estimate tests. The different researchers will work together very closely.

The Treatment Team

The treatment team will consist of two horticultural therapists, one landscape architect, one occupational therapist, and one anthroposophic medical pedagogue. Two days a week one physiotherapist and one psychotherapist will also be present. Every patient will have a doctor responsible for him or her.

The Participants

The individuals visiting the garden for the purpose of rehabilitation will be called participants, not patients. The intention is to strengthen their image of themselves as non-

patients. The participants will be referred to the Healing Garden at Alnarp from hospitals, social insurance offices, insurance companies, and the industrial health service. All those receiving treatment at the garden must have some type of illness that has been triggered or severely aggravated by stress. This illness may have been diagnosed as fatigue depression, STFR (stress-triggered fatigue reactions), burnout syndrome, and/or pain in the back or back of the head. They must all have stated that they would gladly work with gardening. In the course of a treatment lasting for a few months, the participants will work and spend time in the garden together with horticultural therapists for four hours a day. There also will be a comparison group composed of individuals with the same kinds of stress-related symptoms. All patients in both groups will be selected by a team consisting of two physicians (one an expert in psychiatry, the other in family medicine), one physiotherapist (an expert in pain), and one occupational therapist/horticultural therapist. When making the diagnosis, the team members will consider:

- Diagnosis according to SCID I and II (First, Gibbon, Spitzer, Williams & Benjamin, 1999) and diagnosis of somatic morbidity
- Questionnaire of health and function - Tibblin Quality of Life SF36 (Wiklund, Tibblin & Dimenäs, 1990)
- Diagnosis of global function according to GAF-S and GAF-F (Herlofson & Landquist, 2002)
- Participant account of medical history
- Previous history of sick-leave: reasons and time course
- Blood-tests (such as levels of cortisol, steroids, and peptides)

The comparison group will receive treatment as usual. This most often involves remaining at home for a long rest period of about ten to twelve months. During this time, patients usually receive medical treatment involving selective serotonin reuptake inhibitors (SSRI; antidepressants such as Prozac and Zoloft), and five to six sessions of physiotherapeutic and/or psychotherapeutic treatment. Sometimes receiving treatment as usual implies involvement in a rehabilitation program, which most often consists of a two-week period of rehabilitation. This rehabilitation involves treatment from a team consisting of an occupational therapist, a physiotherapist, and an almoner. The estimation is that about 80% of the comparison group will receive the former treatment and about 20% the latter. The research team will follow these groups and study differences and similarities with respect to both qualitative and quantitative techniques. The groups will be assessed after four weeks, eight weeks, 16 weeks, and 28 weeks of treatment.

Because the garden will be part of a large project involving many people, the researchers and designers will need to work strategically and in parallel, basing their efforts on three overall perspectives that will be briefly presented below:

- The needs of the participants
- The design requirements of the research studies
- The geographical and historical context of the garden

THE NEEDS OF THE PARTICIPANTS

A Picture of the Pathology

When designing a healing garden, it is of utmost importance to understand the group of people for who the garden is intended. Those afflicted with fatigue depression, STFR, or burnout syndrome (henceforth “burnout diseases”) are usually between 25 and 45 years of age. When a person is over 45, susceptibility to stress tends to diminish (Maslach, 2001). Women are more likely to be afflicted, particularly those employed in caring professions, such as nurses, preschool teachers, etc. Those who are highly engaged in other people’s lives and fates run a greater risk of becoming burned out. The most prominent symptoms of burnout diseases are a general feeling of being rushed and stressed along with fatigue, irritability, and inability to concentrate (Nyström & Nyström, 1995; Uvnäs-Moberg, 1997; Folkow, 1998; Lundberg, 2001). They often suffer from severe pain concentrated to the back and back of the head, but also from wandering pain afflicting different body regions (Pearlin, Menaghan, Lieberman & Mullan, 1981; Burckhardt, Clark & Bennett, 1991; Rivano-Fischer, 2001). These people are hyper-susceptible to stress. When at their worst, they feel almost electrified, such that the slightest odor or sound seems unbearable (Hallsten, 2001; Rylander, Nygren & Åsberg, 2001). They may act aggressively and at the same time with sadness or despair. Some people state that they find it difficult to listen to music, others that they can hardly stand the smell of perfumes. Most importantly, they find it increasingly difficult to tolerate other people (Klingberg Larson, 2001). Family members and workmates may feel that these individuals have undergone a personality change, have become more self-centered, and feel less empathy for the people around them.

Individuals stricken with burnout disease are often intelligent, creative, and competent (Maslach, 2001). They are accustomed to being efficient, are often verbal, find it easy to express themselves, and may sometimes be regarded as critical of the people around them. Their harshest criticism, however, is usually of their own abilities. If they feel that they are ensnared in trivialities and find no outlet for their skills or if they feel that their work is not appreciated they may react by increasing their efforts to levels far beyond their actual strength. Vagueness and obscurity on the part of their superiors and workmates as to whether they have done enough or been efficient may also play an important part in this regard. The above circumstances may end in a collapse, with the burned out person chiefly sleeping during the first sick-leave period and feeling deep sadness and depression between sleep episodes (Pariola, 2001). Interest in getting back to work gradually increases, but returning to work too early may lead to a setback and bring about a very long sick-

leave period. During this time, the individual is often hypersensitive to stress.

What characterizes this condition is that the slightest demand may trigger reactions of tears, irritation, immense tiredness, and/or aggression (Maslach, 2001). At this stage, burned out individuals are afraid of not being able to meet perfectly the demands confronting them. Yet the people around burned out individuals – family, friends and workmates – must make demands on them. Otherwise, they will not be able to return to society. The question, then, is how these demands should be presented. A healthy approach involves making demands that these individuals feel they can meet within a short period of time, and that they are able to cope with. Burned out individuals and others susceptible to stress become more self-confident when they are able to cope with a task (Klingberg Larsson, 2001; Pariola, 2001).

DESIGN REQUIREMENTS OF THE RESEARCH STUDIES

What can the Healing Garden at Alnarp offer? For these groups it is important to:

- Design places where sad, distressed, and/or upset people can be calmed down and restored
- Be able to meet the demands of the garden at a slow pace, from very low level demands to increasingly advanced levels
- Ensure that the burned out individuals feel they can manage

It is of fundamental importance that the therapists are clear in their roles and always sensitive to how much the burned out individual can manage. Here the therapist must take on the role of a sensitive boss. The programs the therapists draw up for the participants will be focused on the garden. At the start the activities may consist of just managing to come out into the garden, be there, get to know it, rest there, and perhaps pick a few berries and fruits. Gradually, the activities will become somewhat more challenging. For patients with pain, it is important to develop exercises that do not overstrain affected body parts so that the muscle mass is built up properly and the blood circulation to these parts is sufficient. Many patients with pain also find strong sunlight trying, so it is important that shady places for cultivation in the garden are available (Pearlin et al., 1981; Burckhardt et al., 1991; Klingberg Larson, 2001; Rivano-Fischer, 2001). The treatment constantly involves using nature, animals, and the garden for the purpose of care. Gardening activities include cultivation, thinning, watering, weeding, sowing, and harvesting. Nature-oriented activities include clearing and thinning, putting up nesting-boxes, and tending the animals that graze in the grove and meadow. In connection with this, the products of the garden are used for cooking and handicrafts.

A Balance Between Actively Gardening and Just Experiencing the Garden

The three different schools entail different design solutions. Thus the garden layout must allow researchers to study how well these schools succeed in predicting how the participants will use and appreciate the garden and, moreover, in predicting the nature of the participants' rehabilitation. When designing the Healing Garden at Alnarp, the senses constitute an important aspect and can be related both to the Healing Garden School and to the Instructive School (Stigsdotter & Grahn, 2002). To address sensory factors, the designers have worked with different water sounds by experimenting with water speed and fall height. The visitors can come close to the vegetation, the stones, and the water so that without making any particular efforts they will be able to touch things, taste berries, and smell flowers. In this process, the designers have consciously worked with colors and forms with a view to both harmony and contrast.



FIGURE 1: The designers have consciously worked with colors and forms in the garden and ensured that the visitors can come close to the vegetation (Photo: Ulrika A. Stigsdotter).

Garden activities will be given considerable scope and can be related to the Horticultural Therapy School (Stigsdotter & Grahn, 2002). To maintain and strengthen experiential value cultivation is important, but so are activities connected with laying out and working in the garden, such as clearing and thinning the forest stands. Activities will be tailored to the entire garden including areas planned for cultivation as well as to those planned for nature.

The Visitor's Strength of Mind

Earlier studies at the Department of Landscape Planning at Alnarp of how people function in parks and gardens have shown that experiences of nature affect people differently, largely depending on their life situation (Grahn, 1989, 1991; Ottosson & Grahn, 1998). A pyramid was developed to illustrate how individuals experience nature and how many demands they are able to absorb from the environment (Grahn, 1991; Ottosson & Grahn, 1998; Stigsdotter & Grahn, 2002).

Presumably, the participants in the horticultural therapy program will arrive with varying degrees of strength of mind. Therefore, the intent has been to design the Healing Garden at Alnarp to suit participants at all levels. The garden must be designed to make different degrees of demand on the participants. Demands can involve simply being together with other people as well as cultivation of a bed that requires considerable care. There are areas or garden rooms to which participants can retire privately and also rooms in which they can be with several individuals at the same time.

Communication: Garden Rooms with Different Characters

A healing garden must be able to communicate with the visitor on many levels, through sight, smell, hearing, etc. Earlier research at the Department of Landscape Planning at Alnarp has shown that there are eight main characters that constitute the fundamental building blocks of parks and gardens. These characters consist of symbols that manifest themselves through many different sensations via sight, hearing, locomotion, etc. (Grahn, 1991; Berggren-Barring & Grahn, 1995a, 1995b; Grahn & Berggren-Barring, 1995; Hedfors & Grahn, 1998; Stigsdotter & Grahn, 2002). In the Healing Garden at Alnarp all eight characters will be included in the design. Some characters will be laid out separately and others will be combined. Most of the characters require more nature-like areas with large masses of growth such as tall trees and many different kinds of plants. The eight garden room characters are:

1. *Serene* – A peaceful, silent, and caring room
2. *Wild* – A room facilitating fascination with wild nature
3. *Rich in Species* – A room offering a variety of species of animals and plants
4. *Space* – A room facilitating a restful feeling of entering another world; a coherent whole
5. *The Common* – A green, open place allowing vistas and visits
6. *The Pleasure Garden* – An enclosed, safe, and secluded place
7. *Festive* – A meeting place for festivity and pleasure
8. *Culture* – A historical place facilitating fascination with the course of time

Visitor Accessibility to the Garden

The Healing Garden at Alnarp is intended to be accessible to everyone and modeled on the *Design for all* concept (Welch, 1995; Månsson, 1999). *Design for all* implies designing products, environments, and services in such a way that they can be used by as many people as possible, no matter what qualifications or needs they may have.

THE GEOGRAPHICAL AND HISTORICAL CONTEXT OF THE GARDEN

A garden always exists in a context such as a large, open, and luxuriant cultural landscape or on top of a garage roof in a noisy town. The context affects the garden and the experience the visitor has in it. As a result it is important to examine what surrounds the garden. Before beginning to design the new garden it was important to understand the history of the place. History explains why the location has its present appearance. Formulating the purposes of the garden in relation to its historical background is important in creating the best possible garden design.

Alnarp University campus is situated in the fertile and flat agricultural area of southwestern Sweden near the Baltic. In a sea of fields, Alnarp stands out like a green island with its great 150-year-old English landscape park and vast experimental fields. The most grand and beautiful elements of the landscape that give Alnarp its character are the castle, the farm, and the park. The park was laid out in 1862 in one of the few virgin forests of Scania and, inspired by the English landscape park, was designed for usefulness as well as pleasure (Gustavsson & Neldestam, 1999). It was a park that combined and offered good educational opportunities and enjoyable experiences of beauty. In the park are remnants of the virgin forest that provides both a frame around the landscape rooms and serves as a wedge between two large parts of the garden. The soft, organic forms of the pleasure park contrasted with the systematically ordered and geometrically shaped grid of the cultivation area. This is an important theme that will remain present in the Healing Garden at Alnarp. Cultivation and teaching have been the main themes at Alnarp during the past 150 years. The area of the campus area where the garden will be laid out is called Fruit and Berry because fruits and berries have been

cultivated there for over 70 years. Fruit and Berry comprises a total of 12 hectares and is in the eastern part of the campus area. The whole of Fruit and Berry is enclosed by a lush and healthy system of almost three-meter tall, strictly pruned hedges. Hedges will constitute the basic structure of the healing garden as well.

RESULT: DESIGNING A SOLUTION

The aim of the design is to create garden rooms that are not too abstract, unfamiliar, or challenging. Preferably, the garden environment should be experienced as rather familiar yet interesting. The design requirements based on the research and the needs of the participants have led to three objectives for the garden. The first objective is more demanding and focuses on cultivation and horticultural therapy; the second is less demanding and focuses on a more nature-oriented and restorative function; and the third objective is to introduce rooms in accordance with the Instorative School. These rooms would pique people's curiosities and tempt them to feel and smell the water, grass, flowers, and soil, aiming to break the participants' shell and encourage them to partake in all activities. There are also transition stages between very demanding rooms and undemanding rooms. The intent is to be able to illustrate the more orthodox manifestations of horticultural therapy and healing gardens, and at the same time point to interesting transitions and intersections. There are some who regard the wilderness as the optimal restorative environment, while others advocate more half-open and open pastoral environments.

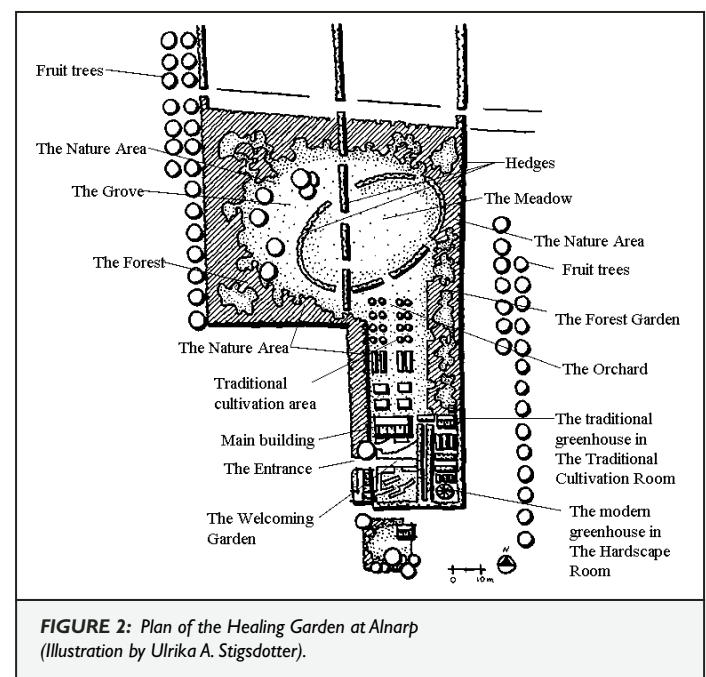


FIGURE 2: Plan of the Healing Garden at Alnarp (Illustration by Ulrika A. Stigsdotter).

The area of the Healing Garden at Alnarp will be delimited from its surroundings by three-meter tall, strictly pruned hedges. To make this two-hectare area more manageable for the visitor, it will be clearly framed by tall hedges and forest stands. The more work-demanding areas of the garden will be situated near the entrance. The intensive garden then changes, via a grove of fruit trees, into a pasture and finally into wilder woodland. The cultivation and nature areas will be divided up into a number of garden rooms of different kinds. To create a unifying feeling and structure throughout the garden these separate garden rooms will be framed by pruned hedges. Inside the hedges, different types of gardens with various healing qualities based on the eight garden characters mentioned earlier will be laid out. Different design hypotheses will be tested in the various garden rooms.

DESCRIPTION OF THE GARDEN

The Nature Area

The largest area in the Healing Garden at Alnarp will consist of more nature-like parts involving no cultivation and is called The Nature Area. Here, there will be very little traditional

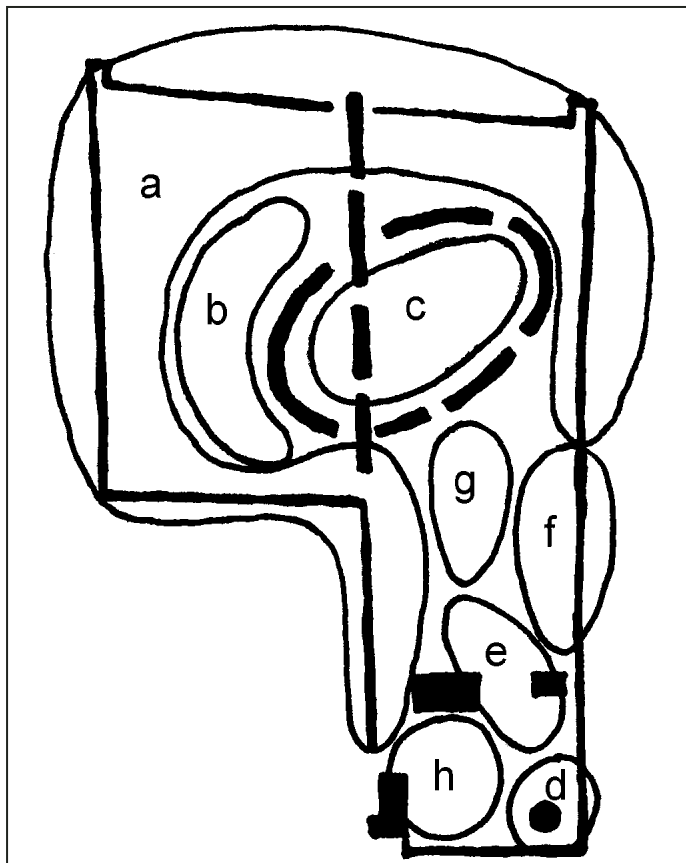


FIGURE 3: The locations of the different garden rooms within the garden (Sketch by Ulrika A. Stigsdotter).

garden character: instead a more nature-oriented character will dominate. This area is divided into a forest, a grove, and a meadow surrounded by an ellipse.

The Forest. The characters Wild, Rich in Species, and Space will be integrated into this room. The character Wild will be the most prominent, particularly in the northern part of the forest area at the back of the garden. The character Rich in Species will be achieved through the variety of plants that usually make up a Swedish forest. Space will also be created by allowing the forest ample space. Here, the huge crowns of many large trees are intended to make the visitor feel as if he/she has entered another world. The Forest will begin at the entrance, then follow the western border up to the northwest, where it will expand. After this it will become narrower, following the northern border and then turning to the south again, ending at The Forest Garden. The forest area, with its huge masses of growth and tall trees, will embrace the cultivation area north of The Fruit Store. In The Forest a meandering path will be laid out throughout the forest stand. This familiar theme can also be found in the areas of virgin forest surrounding the 150-year-old landscape park at Alnarp. The Forest is also enclosed by hedges. In order that the visitor may experience the wild character of the room, the side of the hedges facing the Traditional Cultivation Room will be strictly cut, whereas the side facing The Forest will remain uncut. The idea is that The Forest should be able to offer restorative qualities to participants seeking seclusion, peace, and strength.

The Grove. In the northwestern part of the area a pastoral grove will be laid out. This grove will consist of broad-leaf trees, shrubs, and herbs naturally appearing in the half-open, cultivated countryside of southern Sweden. The Grove constitutes a cherished part of the landscape and appears in numerous Swedish poems and songs composed over hundreds of years. A pond also will be laid out in The Grove. The dominant characters are Serene and Space. The pastoral landscape of the grove is suggestive in its structure of the more closed parts of the landscape of the savanna (Hägerhäll, 1999), which in several experimental studies has proved to have a powerfully restorative influence on stressed individuals (Coss, Clearwater, Barbour & Towers, 1989; Parsons, 1991; Parsons, Daniel & Tassinari, 1994).

The Meadow. The Meadow is another part of the pastoral landscape, also of great importance in Swedish poems and folksongs. This room conveys a prominent, intense expression of The Common, but also of Space and Peacefulness. In order that the freer, open meadow should be able to meet the strict, geometrically delimited cultivation area, a strong form was needed- organic, yet strict. At Alnarp, there are a number of rather small rooms enclosed by hedges in the form of ellipses. They have been laid out on the borders between wild nature and tended garden, an approach that may have been

inspired by the allotment gardens designed by the Danish landscape architect C. Th. Sørensen (Bucht, 1997). Ellipses will manage the meeting between the wild and the strictly pruned rooms very well. The Meadow is an elliptical room and stands out in the garden due to its form and size. The room is bordered by a rather low, pruned hedge surrounding a slightly bowl-shaped expanse of meadow. The ellipse, or part of it, recurs in other garden rooms such as The Welcoming Garden.

Cultivation Areas

Horticultural therapy requires gardens focused on cultivation and gardening. In the Healing Garden at Alnarp, there will be four different rooms focused on various kinds of cultivation, all of them clearly related to horticultural therapy. There will be a very demanding room with cultivation in raised plant beds and shrubs in straight rows, a somewhat less demanding cultivation room inspired by Swedish allotment-garden areas, a much less demanding room where the cultivation is focused on forest gardening, and finally an orchard that meets the ellipse and has a more pastoral character.

The Hardscape Room. Of the three garden rooms focused on cultivation and horticultural therapy, the most extreme and demanding is The Hardscape Room. In this room, none of the eight room characters will actually be represented. The design of this garden room is focused on carrying out the activities of cultivation and horticultural therapy in a rational manner.

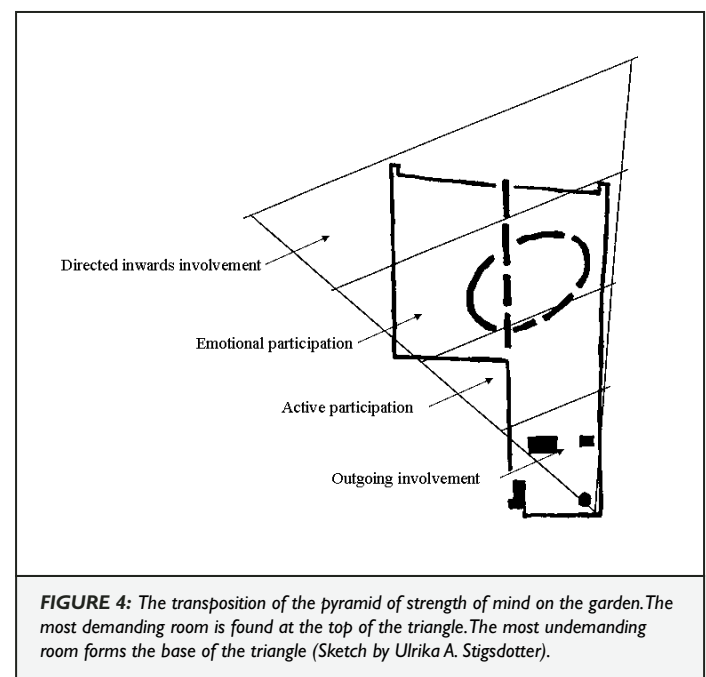
The Hardscape Room represents an attempt to design a garden room in which the activities alone, gardening and horticultural therapy, are in focus. The goal is to eliminate the spatial qualities and the amount of verdure of the garden. The Hardscape Room, however, will be delimited by pruned hedges just like the other garden rooms. Just as in the other gardens, the landscape architects have availed themselves of the best plant material and of plant beds with the best conditions for cultivation, both low and raised. In contrast to the other garden rooms the plants will not be part of a garden composition but will stand alone in their cultivation beds. In this room it is possible for participants, students, and researchers to construct and test different types of plant beds of varying height, length, and width. A newly produced greenhouse adapted for those with disabilities will also be placed here for research purposes. This type of greenhouse gives a very modern impression and may be likened to a glass igloo. Both the inventor of the greenhouse and others will study how well it functions.

The Traditional Cultivation Room. As the name suggests, this garden room is designed like a traditional garden focusing on cultivation. The garden room will be elongated from north to south and like all the other garden rooms enclosed by form-cut hedges. Just as in The Hardscape Room, some of the

cultivation will be carried out in plant beds of different heights. In spite of this, the garden rooms differ markedly. In this room the verdure dominates but will be kept back in strict rows. Both the walls and the floor of the room will be organic material, which will help to give the room a soft, friendly, and less demanding character. On the grass-covered ground, the stone-meal path will wind its way between the plant beds. The room closely and clearly resembles the common Swedish allotment garden. The room characters the Festive, Culture, and Rich in Species can be found in this room. Participants coming to the Healing Garden at Alnarp will engage in horticultural therapy all over the garden, but the more traditional form of horticultural therapy will be carried out in The Traditional Cultivation Room.

The Forest Garden Room. Forest gardening is a rather new concept in Sweden. It is interesting as it offers great cultivation possibilities in a small area, and its organic and nature-like design is markedly different from the straight and strict lines of traditional plantations. In The Forest Garden Room, the landscape architects envision opportunities for cultivation in organic forms. Here, there is room for several room characters, such as Rich in Species and Space as well as The Pleasure Garden.

This garden room is designed to resemble a natural forest. Nevertheless, the cultivation element is highly salient. A forest garden is a designed agronomic system based on different plant layers. The purpose of the forest garden is



to create a biologically sustainable system: it should be productive and require little maintenance work in the long run. Considering that the participants may sometimes wish to experiment with cultivation on their own, it seems a good idea to allow them to work in an environment that offers small private rooms as well as opportunities to consider what individual plants need in terms of light, heat, water, etc. These factors may lead to a more creative and playful contribution, making this perhaps the most instorative room in the garden. People suffering from burnout diseases are very often creative, but they are also plagued by a desire to be good, capable, and efficient. They may be more sensitive than others to the demands of the environment. In The Forest Garden Room there is more potential for these people to be creative in cultivation.

The Orchard. Between The Traditional Cultivation Room and The Meadow an orchard will be laid out. Fruit trees are highly symbolically charged, as is shown by religious tales and fairy tales such as Astrid Lindgren's *The Lionheart Brothers*, but also by how people talk about fruit trees in blossom or bearing fruit. In southern Sweden, fruit trees have traditionally been planted inside the gardens as well as on the borders of pastures, and they have also been used as trees for avenues (Gunnarsson, 1997). It is only natural that The Orchard be viewed as a transitional zone between cultivation and pasturage.

The Welcoming Garden

The most difficult part of the garden to design was The Welcoming Garden. Many sketches were made and rejected. Theories from the Healing Garden School, the Instorative School, and to some extent the Horticultural Therapy School have directed and inspired the design. The Welcoming Garden will be the first garden room visitors enter. It is therefore important that the room does not make any demands on the visitor, so that even those with little strength of mind manage to cope with it. At the same time, it should be experienced as interesting and attractive. Visitors should feel welcomed, safe, and secure here and feel like they can be themselves. It is difficult to design a fascinating garden room that at the same time demands nothing of the visitor – a room that just welcomes without asking anything in return and yet attracts and challenges. One must imagine two types of welcome. One is more social, the other more sensory. The Welcoming Garden must therefore be divided so that those who want more of the sensory experience can go to one part and those who want more of the social experience can go to the other. The room character that dominates the whole garden room is Serene.

In The Welcoming Garden, the more social part will be close to the entrance and the more sensory part to the south. The sensory part will offer more contrasts of sun and shade, particularly in the southeastern corner where there is a wetter

woodland area. Here the visitor will also find dripping water, fragrant plants, and berries rich in flavor. Everything is planned so that very little gardening will be required in the long run and the demands on the visitor will be low. In this area the visitor will find the room characters Serene, Rich in Species, and The Pleasure Garden. At the entrance there will be a larger, more sunny, and more open room with many seats and opportunities for spontaneous encounters. The room characters Serene, Culture, and Festive will be represented here.

DISCUSSION

The coupling of cultivation and garden design is natural. Gardens are about experiencing nature through one's senses as well as through one's activities. A garden, however, may make many demands on the participant: on some days perhaps too great. Because Alnarp is situated at some distance from the city, travel to the garden may be difficult for participants if they sometimes find horticultural activities unpleasant. This is why it is necessary for the Healing Garden at Alnarp to have many separate garden rooms: some of them more focused on cultivation and others on restorative effects. If the participant feels that the demands are too great on a given day, the more restorative parts of the garden may better satisfy his or her needs. Different garden rooms are designed to make different degrees of demands on the visitor. Depending on the individual's present state, he or she can decide what garden room to visit.

Laying out a garden takes time, as does plant growth. Though the healing garden is designed with fast-growing plant material, it will take a number of years before The Forest and The Forest Garden have developed the thick masses of growth they need. Despite this long-term perspective, the designers consider it necessary to build up this garden. The garden is seen as a kind of real-life laboratory: an attempt to examine the team's and other researchers' design hypotheses at full scale and to test the different treatment programs suggested by horticultural therapy. Because the garden possesses so many unique qualities and nuances it is essential to conduct the studies in real life.

Describing a garden and its effects is not easy. Noting the variety of impressions is difficult but important. There is a danger that description will become too objective, illustrating only the layout and activities of the garden. The ethereal and aesthetic values of the garden must not be forgotten, as it is its ability to activate the visitor's senses that makes the garden so unique. A garden also constitutes a constantly ongoing process as it changes all the time. It is experienced differently early in the morning and late in the evening, in rain and in sunshine, in the spring and in the autumn, today and in ten years. It is perhaps not surprising that poets, painters, and composers have taken on the difficult task of describing the beauty of the garden with their many nuances of expression. Researchers can learn a great deal from them. A great deal

can also be learned from participants, who will react to their different impressions of the garden depending on their day-to-day moods and treatment progress.

SUMMARY

The purpose of this article is to describe, explain, and interpret the basic ideas underlying the design of the Healing Garden at Alnarp as well as the working process itself. Because the garden is a large project involving many people, it was necessary to work strategically and in parallel on the basis of three overall perspectives: the needs of the participants, the design requirements of the research studies, and the geographical and historical context of the garden.

In offering different therapeutic treatment programs to people who have suffered from burnout diseases, the garden is divided into two parts: one more demanding and focused on cultivation and horticultural therapy; and the other less demanding and focused on a more nature-oriented and restorative function. The garden consists of eight garden rooms designed to create different degrees of demand on the visitor.

The team now awaits the results from the various researchers as well as the judgments of the participants. What aspects of the garden do the participants appreciate and what is in need of change? Though the team regards the garden as a continuously ongoing process, it is hoped that it will, from the outset, convey a serene feeling of beauty and peacefulness to all visitors, both ill and healthy.

REFERENCES

- Berggren-Bärring, A.-M. & Grahn, P. (1995a). Grönstrukturens betydelse för användningen: En jämförande studie av hur människor i barnstugor, skolor, föreningar, vårdinstitutioner m fl organisationer utnyttjar tre städers parkutbud. *Landskapsplanering Rapport 95:3*, Alnarp.
- Berggren-Bärring A.-M. & Grahn, P. (1995b). Importance of the single park area on experienced characteristics. *Ecological Aspects of Green Areas in Urban Environments*. IFPRA World Congress Proceedings, 110. Antwerp, Flanders, Belgium: September.
- Bucht, E. (1997). *Public parks in Sweden 1860-1960: The planning and design discourse*. Unpublished doctoral dissertation, Swedish University of Agricultural Sciences, Alnarp.
- Burckhardt, C.S., Clark, S.R., Bennett, R.M. (1991). The fibromyalgia impact questionnaire (FIQ) development and validation. *Journal of Rheumatology* 18: 728-33.
- Cooper Marcus, C. & Barnes, M. (Eds.). (1999). *Healing gardens: Therapeutic benefits and design recommendations*. New York: John Wiley & Sons.
- Coss, R.G., Clearwater, Y.A., Barbour, C.G. & Towers, S.R. (1989). *Functional decor in the International Space Station*. TM 102242. Moffett Field, California: NASA Ames Research Station.
- First, M.B., Gibbon, M., Spitzer, R.L., Williams, J.B.W. & Benjamin, L.S. (1999). *Handbok SCID-I och SCID-II för DSM-IV* (Swedish edition by Jörgen Herlofson). Danderyd: Pilgrim Press.
- Folkow, B. (1998). Hur påverkas hälsan av den psykosociala miljön? In R. Ekman & A. Skott (Eds.), *Hjärnstress: vår tids stora folksjukdom* (pp.2-3). Gothenburg: Swedish Medical Congress.
- Grahn, P. (1989). Att uppleva parken. Äldre, sjuka och handikappades behov och användning av parker. *Stencil*, 89:6. Sveriges lantbruksuniversitet, Institutionen för landskapsplanering. Alnarp.
- Grahn, P. (1991). Om parkers betydelse. *Stad & Land* 93. Movium/institutionen för landskapsplanering, Sveriges Lantbruksuniversitet, Alnarp.
- Grahn, P. & Berggren-Bärring, A.-M. (1995). Experiencing parks. Man's basic underlying concepts of qualities and activities and their impact on park design. *Ecological aspects of green areas in urban environments*. IFPRA World Congress Proceedings, 97-101. Antwerp, Flanders, Belgium: September.
- Gunnarsson, A. (1992). Fruktträden och paradiset. *Stad & Land* 105. Movium/institutionen för landskapsplanering, Sveriges Lantbruksuniversitet, Alnarp.
- Gustavsson, I. & Neldestam, A. (Eds.). (1999). *Arkitektur i Alnarp*. Alnarp: Akademiska hus & Sveriges lantbruksuniversitet.
- Hallsten, L. (2001). Utbränning. En processmodell. *Svensk Rehabilitering* 2001(3) 26-35.
- Hedfors, P. & Grahn, P. (1998). Soundscapes in urban and rural planning and design. *Yearbook of Soundscape Studies* 1: 67-82.
- Herlofson, J. & Landqvist, M. (2002). *MINI-D IV: Diagnostiska kriterier enligt DSM-IV-TR*. Danderyd: Pilgrim Press.
- Hägerhäll, C. (1999). *The experience of pastoral landscapes*. Unpublished doctoral dissertation, Acta Universitatis Agriculturae Sueciae, Agraria 182, Uppsala.
- Klingberg Larson, S. (2001). Stressutlösta utmattningsreaktioner och utbrändhet. Stockholm: Liber.
- Lundberg, T. (2001). Stress. En fysiologisk försvarsreaktion. *Svensk Rehabilitering* 2001(3) 36-38.
- Maslach, C. (2001). *Utbränd. Om omsorgens personliga pris och hur man kan förebygga utbränning*. Stockholm: Natur & Kultur.
- Månsson, K. (1999). *Bygg för alla*. Stockholm: AB Svensk Byggtjänst.
- Nyström, C. & Nyström, O. (1995). A process-oriented personality exploration starting from a crisis-theoretical frame of reference. *Stress and Crisis Inventory -SCI-93*. Partille.
- Ottosson, J. & Grahn, P. (1998). Utemiljöns betydelse för äldre med stort vårdbehov. *Stad & Land* 155. Movium/institutionen för landskapsplanering, Sveriges Lantbruksuniversitet, Alnarp.
- Pariola, M. (2001). *Stress. Om stressen och dess orsaker*. Kompendium från Arbetslivscenter, Lunds Universitet.
- Parsons, R. (1991). The potential influences of environmental perception on human health. *Journal of Environmental Psychology* 11: 1-23
- Parsons, R., Daniel, T.C. & Tassinari, L.G. (1994). Landscape aesthetics, ecology, and human health. In W. Covington & L. DeBanco (Eds.), *Sustainable ecological systems* (pp.266-280). Fort Collins, CO: USDA Forest Service General Technical Report RM-247.

- Pearlin, L.I., Menaghan, E.G., Lieberman, M.A. & Mullan, J.T. (1981). The stress process. *Journal of Health and Social Behavior* 22: 337-356.
- Rivano-Fischer, M. (2001). Smärtupplevelse. Stress, kris och anpassning. *Svensk Rehabilitering* 2001(3) 39-43.
- Rylander, G., Nygren, Å. & Åsberg, M. (2001). Utmattningsdepression. *Svensk Rehabilitering* 2001(3) 4-7.
- Stigsdotter, A.U. & Grahn, P. (2002). What makes a garden a healing garden? *Journal of Therapeutic Horticulture* 13: 60-69.
- Uvnäs-Moberg K. (1997). Oxytocin linked antistress effect: The relaxation and growth response. In B. Folkow, T. Schmidt & K. Uvnäs-Moberg (Eds.), *Stress, health and the social environment: James P. Henry's ethologic approach to medicine, reflected by recent research in animals and man: In memory of a great 20th century physiologist* (pp.38-42). *Acta Physiologica Scandinavica*. Supplement, 0302-2994; 640. Oxford: Blackwell Science.
- Welch, P. (Ed.). (1995). *Strategies for teaching universal design*. Berkeley, CA: Adaptive Environments. Boston, MA: MIG Communications.
- Wiklund, I., Tibblin, G. & Dimenäs, E. (1990). Quality of life and hypertension. *Scandinavian Journal of Primary Health Care* 1990: 1.

This article was made possible by financial support from Formas, the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, grant no. 2001-0252, and by a decision of the board of the Swedish University of Agricultural Sciences entitled "Public health – animals and nature in urban environments for recreation and health" (SLU styrelsebeslut om Folkhälsa- djur och natur i urban miljö för rekreation och hälsa).

Ulrika A. Stigsdotter is a Ph.D. student and a lecturer in landscape architecture at the Department of Landscape Planning, Subdivision Health & Recreation, Swedish University of Agricultural Sciences, P.O. Box 58, S-230 53 Alnarp, Sweden. Ulrika.Stigsdotter@lpal.slu.se

Patrik Grahn is an associate professor in landscape architecture at the Department of Landscape Planning, Subdivision Health & Recreation, Swedish University of Agricultural Sciences, P.O. Box 58, S-230 53 Alnarp, Sweden. Patrik.Grahn@lpal.slu.se

