



Testing a contemplative landscape method
to design a stress-reducing therapeutic
landscape for the Mellanorrlands Hospice

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Abstract

This thesis explores the effectiveness of the Contemplative Landscape Method (CLM) in designing a stress-reducing therapeutic landscape for Mellanorrlands Hospice, aimed at improving the well-being of palliative care patients. With the increasing importance of palliative care due to an ageing population and the growing demand for hospice services, this study addresses the pressing need for therapeutic landscapes that make a positive contribution to the emotional and psychological health of patients and staff. The interdisciplinary approach of this study integrates landscape architecture, environmental psychology and palliative care, recognising the profound impact of the natural environment and architectural design on patient wellbeing.

The study is structured around a literature review, a detailed case study at Mellanorrlands Hospice and an empirical study using CLM. The literature review provides a context for therapeutic landscapes, emphasises their relevance in palliative care settings and identifies key characteristics that contribute to their effectiveness. The case study methodically explores the existing conditions and requirements of Mellanorrlands Hospice, providing a contextual framework for the application of CLM. The empirical study focuses on analysing the existing landscape of the hospice and developing a design proposal using CLM to enhance contemplative and therapeutic qualities.

The findings of the literature review emphasise the potential of therapeutic landscapes to improve mood, reduce stress and support emotional wellbeing through both active and passive engagement with nature. The case study shows that the hospice in Mellanorrlands has unique advantages, such as location and views, that contribute to a

therapeutic landscape. However, the empirical analysis shows that the current landscape has an average contemplative score, suggesting that it could be improved to achieve a greater positive mental health response from users.

The design proposal developed through CLM emphasises the inclusion of a variety of natural elements and spaces for contemplation to meet the specific needs of hospice residents. From the results of the study, it can be concluded that although CLM offers a valuable framework for designing therapeutic landscapes, its subjective nature and the difficulty of translating two-dimensional principles into three-dimensional spaces requires further investigation. Future research should aim to refine the method for more objective application and explore its effectiveness in a wider range of settings.

This thesis contributes to the field of landscape architecture by testing the application of CLM in a real-world context, offering insights into its strengths and limitations. It emphasises the importance of interdisciplinary approaches in creating environments that support the physical and emotional needs of palliative patients and paves the way for future advances in therapeutic landscape design.

Keywords: Therapeutic garden, contemplation, Contemplative Landscape Method (CLM), stress reduction, palliative care, hospice centre.

Foreword

This work would not be what it is without the help of many people. I express my gratitude to **Tomas Eriksson** for his valuable advice and recommendations, which greatly contributed to the success of this work. I am deeply grateful to the staff of **The Mellannorrlund Hospice** and in particular to **Linda Morin** for providing the information and materials necessary for this work and for the opportunity to visit the hospice and communicate with patients and staff.

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Introduction

In today's society, palliative care issues are becoming more and more significant and urgent. According to the World Health Organisation, 56.8 million people in the world face the need for palliative care every year, especially in the last minutes of their lives. And the demand for hospice and palliative care continues to grow due to the increasing aging population (WHO 2020).

Sweden is one example of a high-income country with one of the highest levels of palliative care development (Clark et al. 2020). This high level is the result of many active and significant steps taken over the last few decades (Haugen 2017).

Palliative care has its own distinctive features, differences and needs different from conventional medical care, which will be discussed in more detail later in the thesis. Solutions to such needs are sometimes at the intersection of different disciplines, including architecture, design and landscape architecture. One example of such an interdisciplinary challenge is identifying ways to reduce stress for patients and staff in hospice centres by creating environments that are conducive to stress reduction (Brazil et al. 2010, Huggard et al. 2018, Peter et al. 2022, Yazici 2019, Ferrante & Villani 2021). Current research in landscape architecture and environmental psychology emphasises that the natural environment and architectural design can have a profound effect on patients, bringing not only physical but also emotional satisfaction (Kaplan & Kaplan 1989, Young et al. 2020, Rasmussen & Edvardsson 2007, Rowlands & Noble 2008). However, the task of creating environments capable of having an impact on stress reduction has until recently been complicated by the fact that landscape architects have no way of ascertaining whether the designs they create actually have a stress-reducing effect on people, other than surveys and blood tests, which are not conclusive evidence (Olszewska-Guizzo 2023). The most effective way of capturing stress is Electroencephalography (EEG) and functional Near-Infrared Spectroscopy (fNIRS) and the method based on MRI readings only came about in Contemplative landscape method and was only described and presented in detail in May 2023.

The challenge of creating a therapeutic landscape in palliative care settings can play an important role in providing care and support to those in the last stages of their lives and to those who care for and support them along the way. This thesis therefore aims to test the contemplative landscape method for the design of a stress-reducing landscape using the Mellanorrlands Hospice as a case study and to contribute to the development of the method and its implementation in practice.

1.1. Current problem formulation and purpose.

As noted earlier, palliative care is actively developing and gaining importance globally and in Sweden in particular. Although research in architecture and interior design is widely recognised and actively used in the design and development of hospices (Read 2019), more extensive research is needed on the impact of therapeutic gardens on hospice patients' well-being or palliative care services.

Another challenge is the evidence and validity of methods for assessing and working with therapeutic landscapes. Researchers have noted that methods based on individual preferences and interviews can be categorised as generally accepted rather than proven (Olszewska-Guizzo 2023, Sudman et al. 1996, Finch et al. 2018). Most methods of assessing certain qualities of therapeutic landscapes are based on individual or professional interviews. Therefore, it is particularly important to investigate, test and implement methods based on health indicators.

A further problem is that existing therapeutic landscape practices are mainly focused on medical centres and aim to heal people through 'salutogenic factors', i.e. factors that contribute to human health and well-being through active engagement with nature (Stigsdotter & Grahn 2002). This in turn does not fit with the aims and objectives of the therapeutic landscapes of hospice centres in which the demand for passive patient interaction with the landscape is led.

I have also not found clear guidelines and recommendations for architects and landscape designers to design therapeutic gardens in hospice centres. Although current research demonstrates the need for garden areas to enhance the quality of life for all palliative care participants (McLaughlan et al. 2022), it is still possible to find current hospice projects designed and implemented with insufficient area to create a therapeutic garden (see Figure 1).

Considering all the above, this paper aims to test the contemplative landscape method for designing therapeutic landscapes in hospice centres. As well as identifying its strengths and weaknesses in order to further promote and implement this method in the wider practice of landscape architecture.

To achieve this goal, the following objectives are set:

Identify the specific conditions and requirements for a case in which the contemplative landscape method is utilised. This will include an analysis of the needs of the hospice centre, such as patient needs and constraints as well as the specifics of the space.

In the process of using the method, record the limitations or difficulties in using the contemplative landscape method, and explore the unique advantages and disadvantages that the contemplative landscape method offers within the selected case study.



Figure 1. The proposal for the detailed plan of the hospice center in Hovos is an example of a hospice center project in the final stages of construction, in which space for a therapeutic garden is unplanned. Source: <https://goteborg.se/>

1.2. Main questions

This raises several questions that we will attempt to answer in this thesis:

- What approaches and theories exist to consider the impact of therapeutic gardens on the human condition.
- What are the specific conditions and requirements of the case for which the tool is used?
- What features of the project are best demonstrated or improved by the tool?
- What unique benefits does the tool provide within the selected case study?
- What limitations or challenges do users of the tool face in using the tool?
- What additional functionality or improvements could be added to the tool in the future?

1.3. Method

In this paper, the Research through design method was applied with a focus on the constructivist model. Research through design is also sometimes referred to as research through design (Lenzholzer et al. 2016), research by design (Barnett, 2000; Nijhuis & Bobbink 2012), and is concerned with what can be learnt and experienced by doing design activities. In research through design, the design (process) represents the (research) method.(Jansson et al.2019)

The constructivist model is described as having great relevance to landscape architecture because it is context orientated. Questions about methods, theories or concepts are explored by testing what can be expressed through landscape architecture, whether it is how design affects people or by exploring the design process itself. Knowledge becomes context dependent and cannot be directly applied to other contexts, but can be applied either in part or as one of several comparative studies. Thus, when applying Research through design with a focus on the constructivist model the outcome of the research is knowledge, about certain design processes. , including design recommendations that are useful and meaningful for the design or design process (Lenzholzer et al. 2016).

The following research methods through design were used in this paper:

1. Literature review: Exploring existing approaches and theories regarding the impact of therapeutic gardens on the human condition.
2. Case study: Identification of specific conditions and requirements for the case of using the contemplative landscape method in a hospice centre. Selection of a hospice centre for the case study.
3. Empirical study: To record the limitations and difficulties in using the contemplative landscape method and to explore the unique advantages and disadvantages of the method within the selected case study.

1.3.1 Literature review

The main objectives of the literature review are:

1. exploring existing approaches and theories regarding the effects of healing gardens on the human condition. In order to provide an informative context for the contemplative landscape method under consideration.
 2. Detailing the contemplative landscapes method and describing the seven key elements offered by this method and explaining the extent of their impact on distress.
- Overall, each of the identified objectives of the literature review followed the four steps recommended by Brown and Corry (2001) for a literature study in the context of landscape architecture:
- (1) formulating a clear goal or question based on the client's problem and request (in this

- case identified through a literature review of the topic);
- (2) a search of the scientific literature examining the impact of landscape on the identified problems;
- (3) critically evaluating landscape assessment methods as appropriate to the situation;
- (4) applying the findings to the problem at hand.

In summary, the literature review identified specific theories, methods, and practices that demonstrate that certain landscape types can influence the human condition. As well as introducing the reader to the contemplative landscape method that meets the needs of palliative care. The needs of palliative care, which are explored in more detail in the Case study part, have formulated the following parameters for the method :

- The tool is suitable for assessing the landscape in terms of its therapeutic qualities, especially stress reduction and mood elevation.
- The tool is suitable for assessing active engagement with the landscape and, more importantly for this project, passive engagement.
- The tool assesses the landscape as a whole and provides insight into which elements of the environment or factors are more influential than others.
- But most importantly, the tool should be tested for health indicators. In other words, it is important to analyse not only questionnaires and self-reports from users of the natural environment assessed by the tool, but also physical indicators of changes in psychological health.

- Without testing on health indicators, it is impossible to say whether an environment assessed as highly therapeutic in service delivery helps to achieve the desired health outcomes compared to a less therapeutic environment.

1.3.2 Case study

An important part of the thesis is the Case study, which is dedicated to the case study of palliative care and in particular the Mellannorlands Hospice Centre, where the contemplative landscape method was tested. Landscape architecture is closely linked to the physical and socio-cultural context. Therefore, this part elaborates on how the needs of polyclinical care, its characteristics, differences from other types of care and needs, as well as a description of the Mellannorlands Hospice Centre grounds.

The particularities of case studies in landscape architecture, such as contextualisation, multilevel and dynamic projects, allow this paper to become more relevant and applied. And importantly, it allows us to understand how the CLM tool can be used in different real-world contexts by revealing contextuality.

Mellannorlands Hospice was chosen because it was located an accessible distance away, had the necessary surrounding area to create a therapeutic garden and was one of the few centres open to the public. Data collection took place over the course of three visits to the hospice centre (Figure 2). During this time a variety of data related to the case study were collected: observations, drawings and photographs. The process of working

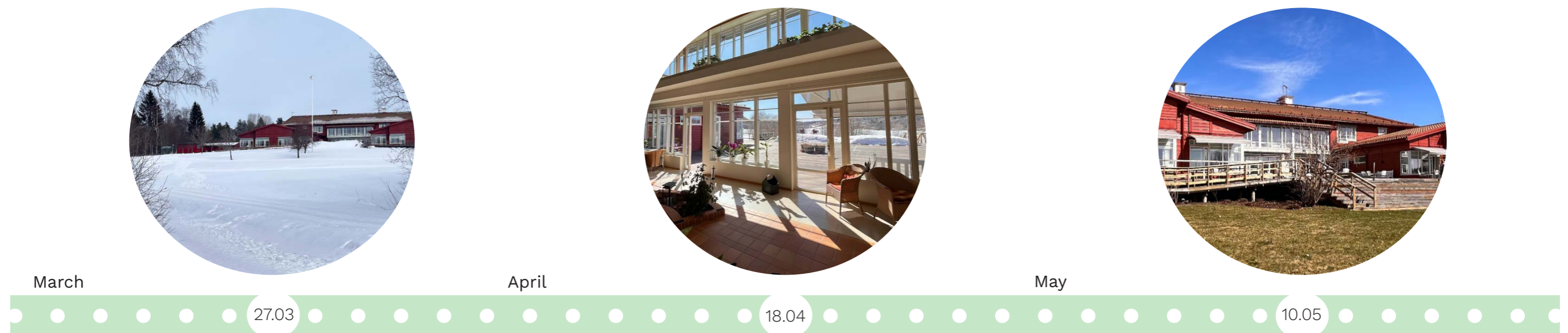


Figure 2. A timeline showing the different visits to The Mellannorland Hospice. Source: photos by the author

with the tool was also recorded, which will be discussed further in the testing section.

1.3.3 Testing the CLM method

The central part of this thesis focuses directly on testing a contemplative landscape method to design a stress-reducing therapeutic landscape for the Mellanorrlands Hospice and is divided into two main steps:

1. it is testing a method to analyse the contemplative landscape. In the analysis, a Contemplative Landscape methodology is used to assess the contemplative and therapeutic qualities of the landscape, based entirely on the detailed description of this method (Olszewska-Guizzo 2023) which can be found in the appendix to this thesis. This analysis is conducted to determine an overall assessment of the contemplative landscape and its individual elements in order to make further suggestions for improving both the individual elements and the overall impact of the landscape.
2. Testing the method on the design process of the stress-reducing therapeutic landscape. The project proposal conceptualises evidence-based principles for the design of therapeutic landscapes in palliative care based on the contemplative landscape method. Although the proposed project will not be physically created, it will serve as a theoretical model to demonstrate how research findings can be translated into practical design elements. This hypothetical project illustrates the possibilities of integrating scientific knowledge into landscape architecture, providing a blueprint that can guide future real-world applications and be used to further develop the method.

1.4. Boundaries

The process of working on this thesis had a number of limitations that affected the result:

- The literature analysis was done without detailed evaluation and detailed criticism. Only a general review of the literature in order to create a general picture and search for methods. The number of sources was determined only by what was provided by search engines.
- Method selection was done by filtering for key parameters identified during the palliative care needs analysis. Without comparing and examining other methods in detail, and relying only on comparisons suggested by the authors and researchers of the CLM method (Olszewska-Guizzo 2023).
- This thesis focuses on and prioritises the ability of landscape to influence stress reduction over other interactions between landscape and the human condition and does not examine them in the same detail.

- Contemplative landscape analysis was only done once in the spring due to the remoteness of the site. For this reason the hospice centre was visited a total of 3 times and all times in the spring and around the same time of day.
- The time constraints, scope and focus of the thesis did not allow for the reshaping of a full design proposal. Instead, specific recommendations and directions were developed for the overall project as well as for its individual details. The principles of the contemplative landscape method are laid down, disclosed and explained, which can be discussed both with representatives of the hospice centre and with specialists of related fields, who should also be involved for further work on the design.
- The concept focuses only on the therapeutic nature of the landscape and does not address other equally important aspects of the project, such as ecological contribution and balance, the respectful neighbourhood of the protected area and the residential area and especially the visual dialogue between the hospice area and the residential parts of the city. The selection of plants suitable for the area, materials of paths, materials and design of benches and other small forms for the project as well as the architecture of the tea house are not project tasks, they have a very indirect impact on the overall solution in terms of the aims and objectives of this thesis and require joint work with both the hospice representatives and specialists from related fields. These are all important aspects of the design process that should be considered in order to achieve a thoughtful and sustainable landscape design, but are not considered in this thesis.
- The conceptual design proposal works only with the hospice centre area and does not consider changes that may occur outside of it.
- Unfortunately, within the framework of this thesis there is no possibility to implement the project and with the help of EEG or fNIRS to make an experiment confirming that the proposed changes have influenced the general level of contemplation of the landscape and as a consequence have the necessary effect on the reduction of stress in hospice patients.

Literature review

2.1. Nature's Influence on human beings

The interrelationship between humans and the environment has been recognised since ancient times. (Gerlach-Spriggs 1999, Stigsdotter 2005). Even medieval monks chose sites with beautiful natural surroundings to build hospitals and supplemented them with gardens (Gerlach-Spriggs 1999). For a long time, this nature-human connection has been explained through the observation and intuitive generalisation that human health and well-being is positively affected by spending time in natural environments, wildlife and enclosed gardens, where daylight, fresh air and greenery are responsible for the beneficial effects (Gerlach-Spriggs et al. 1999).

1984 was the starting point for evidence-based approaches in capturing the effects of nature on health (Ulrich 1984), which launched a wave of research that formed the basis for the theories of landscape architects (Verderber & Reuman 1987, Kaplan & Kaplan 1989, Ulrich et al. 1991). Ulrika A. Stigsdotter and Patrick Grahn summarised the theories from different areas of research before 2002 into three different schools: the Healing Garden School, the School of Horticultural Therapy and the Cognitive School (Stigsdotter & Grahn 2002).

Studies conducted after 2002 have continued the trend towards interdisciplinary research and generally show that the link between green infrastructure and human health are topics of research in landscape and urban planning, which have recently become increasingly important (Ying et al. 2022). An unprecedentedly large study published in 2022 on Linking the non-material dimensions of human-nature relations and human well-being through cultural ecosystem services (CESs) confirms the same. A systematic literature review based on 301 studies found that CESs tend to have the greatest positive contribution to components of human well-being such as physical and mental health through regenerative mechanisms (Huynh et al. 2022). These mechanisms denote interactions with nature that create positive regenerative outcomes associated with stress reduction, relaxation, calmness, escapism, exercise, increased longevity, and recovery from illness. (Huynh et al. 2022).

It is worth noting research into the impact of green spaces on human physical health (Twohig-Bennett & Jones 2018). There are studies examining the relationship between visiting green landscapes and well-being (Maas et al. 2009), noting a correlation between time spent in green spaces and improved mood (Berman et al. 2012), and improved mental health and vitality regardless of cultural and climatic conditions (van den Berg et al. 2016). There is also a focus on physical activity during holidays in green spaces (van den Berg et al. 2019), as well as interactions with nature such as hiking (Roscoe et al.

2022), which are likely to have a positive effect on overall human well-being, especially for people with mental health conditions such as depression (Berman et al. 2012).

Similarly, there is research interest in the effects of green spaces on people's emotional and psychological well-being (Kondo et al. 2018), as natural healing properties are particularly relevant in the case of stress reduction, an opportunity to support not only the treatment but also the prevention of some mental disorders (Zhu 2022, Stigsdotter & Grahn 2011, Malekinezhad & Lamit 2018). Various stress-related disorders can be triggered by fatigue, burnout, exhaustion, depression, anxiety or adjustment disorder (Halbreich 2021). Most research on horticultural therapy has been conducted to investigate the effects of horticulture on vulnerable populations such as the elderly (Han et al. 2018), children and youth, patients with mental illness (Siu et al. 2020), or on specific problems such as depression and related problems (Gonzalez et al. 2010), post-traumatic stress disorder (Detweiler et al. 2012, 2015, Ashton 2016).

2.2. Contemplative Landscape Model

We have enough understanding that different landscapes can have an impact on human well-being. Nevertheless, not every landscape has therapeutic properties, and not every green space is good for mental and physical health. It is not nature as a whole, but relatively certain aspects of it, specific characteristics and properties, that benefit humans. More specifically, some aspects of the surrounding landscape can have a beneficial effect, while others do not and can be entirely ignored by our perceptions, brain, and psyche, or even negatively affect people's well-being (Cooper-Marcus et al. 1999).

In the process of literature research, a range of tools for qualitative assessment of green spaces were found. However, only one of the tools fulfilled the requirements, especially the fact that the tool was validated against health data. Moreover, the tool explicitly targets brain activity patterns related to relaxation, stress reduction, mindfulness, and positive effects such as being in the "here and now" - feeling connected to the present moment (Olszewska-Guizzo et al. 2022).

This tool, the Contemplative Landscape Model, was developed and validated by a group of scientists led by Agnieszka Olszewska-Guizzo.

The model is based on existing theories from environmental psychology, neuroscience, urban planning, and design and is specifically designed to identify landscapes that

positively affect the state of an observer's stress reduction and immersion in a contemplative, meditative state of mind. Its principles are based on creating or enhancing the natural and contemplative character of an area by incorporating specific features and elements into the design and generally enhancing the contemplative power of the landscape to create a landscape that has an impact on reducing stress and improving the overall human condition. (Olszewska-Guizzo et al. 2016, Olszewska-Guizzo 2023)

By the author's definition, a contemplative landscape is a landscape scene that, through passive sensory influence alone, can evoke and restore positive emotions and reduce stress and mental fatigue in most people, regardless of age, socioeconomic or medical status and cultural background.(Olszewska-Guizzo 2023)

In this tool, the contemplation of space is a critical factor in the therapeutic properties of the landscape. It depends on seven key components: Character of Peace and Silence, Compatibility, Layers of the Landscape, Landform, Biodiversity, Color and Light, and Archetypal Elements. (Olszewska-Guizzo et al. 2016) These components were determined by summarizing all possible physical characteristics of contemplative spaces used in previous research. (Olszewska-Guizzo et al. 2016)

The landscape evaluation process is based on determining an overall landscape contemplation score, the average of scores comprising components. The basic premise is that combining certain aspects of landscapes within a single scene increases the contemplative value of the landscape scene and is, therefore, more likely to affect human mental health and well-being positively. The authors provide a paper guide (see Tab. 3) that can be taken into nature to evaluate individual scenes. A more detailed guide with supporting questions is also presented in the book (Olszewska-Guizzo 2023) as well as in this paper (see Appendix).

It is important to note that the tool has been calibrated for use in urban and suburban green spaces. It is focused on the scale of urban forests, parks, or gardens and refers to the surrounding urban infrastructure rather than the extensive regional scale.

2.3. Contemplation

Before exploring this tool, it is vital to understand the essence of the concept of contemplation. Contemplation is a core component of passive recreation, including walking, bird watching, and all types of low-movement recreation. In addition to attention to the external world, it also includes elements of inner wandering, self-exploration, spirituality, and transcendence that occur through balanced, small amounts of auditory and visual cues (Watts et al. 2017). Another essential feature of peaceful contemplation is the sense of being present and experiencing the "here and now" - this sense of "wholeness" and identity with the world around us is an integral part of

mindfulness practice, along with a non-judgmental attitude and acceptance of one's destiny and limitations (Cullen 2012).

However, it is significant to remember that contemplation is an individualized experience that one experiences most often alone and in a quiet, safe, and comfortable environment.

Contemplation of the landscape is not only calming but also promotes deep inner dialog, encourages reflection, and overall can be a transformative experience - it can encourage reflection on processes and meanings that are important and meaningful to us, on belonging and connection to nature and its natural cycles day and night, seasons, birth and death, on social processes, and, by extension, on the banality of human existence and mortality. (Issa 2019).

This ability of contemplation to immerse a person in the process of inner wandering accompanied by tranquillity (Olszewska-Guizzo 2023) can have a significant impact on people experiencing an existential crisis, reducing stress and creating a favorable cognitive environment for living this crisis. Unfortunately, the relationship between landscape contemplation and psychological crises in palliative care has not yet been explored. For now, however, we have every reason to assume such a link.

Finally, it should be noted that the tendency to contemplate manifests differently in people, with some being more engaged and sensitive to their surroundings than others. (Olszewska-Guizzo 2023) Therefore, it must be remembered that the effects of contemplation may also vary.

2.4 Interaction between seven key elements of a contemplative landscape

Since 2011, several neuroscience experiments and studies have been conducted using the contemplative landscape model (Olszewska-Guizzo et al. 2016, 2022b, Olszewska-Guizzo 2018). Two neuroimaging methods were used in the experiments: EEG and fNIRS. The collection of self-questionnaire data also accompanied the experiments. The results of correlations with EEG data showed that CLM scores of the assessors were highly correlated with psychophysiological indicators: Theta and Alpha frontal electrical oscillations, mood improvement, and intensity of emotions.(Olszewska-Guizzo et al. 2022a). This study also showed which key components of CLM are essential for each mental health outcome. It turned out that after optimizing the outcomes, taking together frontal Alpha and Theta scores and mood scores, the extent to which each of the seven CLM components contributed to the overall score varied (see Chart 1) (Olszewska-Guizzo et al. 2022a). According to this finding, Landscape Layers, Peace and Silence Character, Archetypal Elements, and Biodiversity are the components that are generally worth prioritizing. However, other aspects of CLM are also crucial for maximizing the experience of contemplation and should be addressed.

As this is a new tool, the main points of each of the components will be summarised below. The components are described in more detail in the book, where each component has a chapter dedicated to it. (Olszewska-Guizzo 2023)

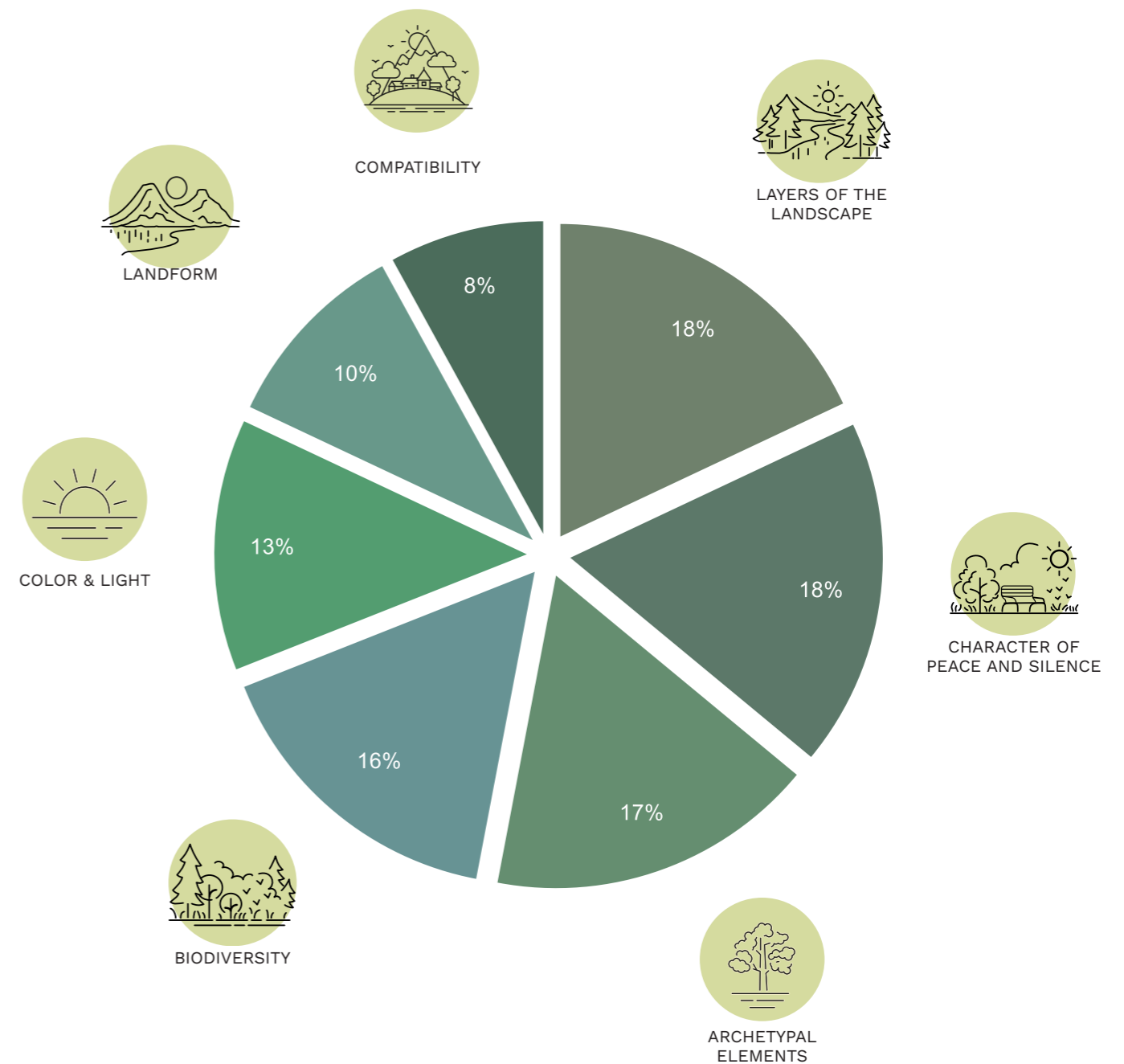


Chart 1. Proportional area chart illustrating the extent to which each of the seven contemplative landscape components contributes to the mental health and well-being scores acquired through neuropsychological research. Source: Olszewska-Guizzo (2023, p.12).



2.4.1. Layers of landscape

Landscape layers have a leading importance for contemplative scenes compared to other elements of CLM. According to neuropsychological studies (Olszewska-Guizzo et al. 2022b, 2023), they rank first in contributing to overall mental health and well-being measures. The study notes that most of the benefits of exposure to landscape layers are subconsciously transmitted, i.e., changes are observed in brain scans. However, the subjects are unaware of the changes, evident in paper self-reports. Nevertheless, the landscape layers contribute to a greater extent to relaxation in the waking state (expressed by alpha oscillations in the frontal area) and to a somewhat lesser extent to the vigilance response (expressed by theta oscillations in the frontal area).

The research defines Landscape Layers interchangeably with the classic definition given in “Fundamentals of Visual Design Analysis” (Swardon et al. 1986), which distinguishes three landscape layers (distance zones):

- Foreground - more pronounced color intensity and the observer can get a more detailed impression of immediate details such as leaves or bark;
- Middle ground - plays a secondary role for the observer, where elements of the landscape begin to appear blurred, and details give way to shape, color, contour, or scale. Colors will appear bluer and softer than in the foreground, and sharpness and contrast will be reduced.
- Background- is the farthest layer in a landscape, which has the characteristic effect of aerial perspective - distant elements appear bluer (a large volume of air has a bluish tint). Because of aerial perspective, background surfaces and shapes also lose textural detail, emphasizing the outlines of figures: “The silhouettes and ridges of one land mass against

another are prominent visual parts of the background with the horizon line, the strongest of all lines” (Swardon et al. 1986).



2.4.2. Character of Peace & Silence

According to neuropsychological research, the quietness and peace of a landscape scene are key to the contemplative value of the landscape (Olszewska-Guizzo et al. 2022b, 2023). This element ranks second among the components contributing to the overall assessment of mental health and well-being. According to research, some of the benefits of the quietness and calmness of the landscape are subconsciously transmitted and mainly influence relaxation mechanisms in the waking state. Moreover, the characteristic of “peace and quiet” is of paramount importance for design aimed at self-evaluation of subjective good mood. This indicates the highest level of consideration of this CLM component in the landscape design process.(Olszewska-Guizzo 2023)

Design strategies aimed at creating this aspect of contemplative space include the rather obvious thing - simple and straightforward navigation, as well as creating comfortable places to stop, sit down, and immerse oneself in the process of contemplation and relaxation for as long as desired. Zoning, as well as separating entertainment from passive activity and contemplation, can also be an appropriate strategy. However, places of contemplation and relaxation should not be completely isolated from the crowd. However, they should be designed to feel distance from others without feeling anxious or disturbed. (Herzog & Bosley 1992).



2.4.3. Archetypal elements

According to neuropsychological research (Olszewska-Guizzo et al. 2022, 2023), the explicit presence of any of the archetypal elements in a landscape scene significantly increases overall mental health and well-being. Thus, this contemplation component is ranked third in the rankings. The research suggests that most of the benefits of archetypal landscape elements are subconsciously transmitted. They influence the relaxation mechanisms in the waking state and the attention response. This suggests that the use of pronounced archetypes in the landscape allows to slow down the brain activity of observers. At the same time, archetypal elements contribute less to self-reported, subjective good mood.

Archetypal elements are potent elements in any composition. According to Jung (1966), archetypes are universal, archaic patterns or images present in our world and copied and imitated throughout the ages. They represent part of what he called the “collective unconscious” and show “a peculiar readiness to produce the same or similar mythical ideas again and again” (Jung 1966). The contemplative landscape model suggests nine common archetypal elements: water, path, glade, mountain/hill, lone old tree, stone, rock, forest, desert, and circle. (Olszewska-Guizzo 2023)

In landscape, these archetypes are compelling means of relating the external world to the human psyche. Approaching the landscape as an object that inherently contains a unique and profound quality and meaning to recognize and operate with landscape elements consciously is particularly important when designing for mental health and well-being. (Olszewska-Guizzo 2023)



2.4.4. Biodiversity

The biodiversity component of CLM, among other characteristics described above, ranks fourth in contribution to overall mental health and well-being according to neuropsychological research (Olszewska-Guizzo et al. 2022a, 2023).

The term biodiversity is used holistically to encompass all living kingdoms in an ecosystem. Changes in vegetation, seasonal and daily, can evoke the natural cycles and our connection to them. Animals and plants in the landscape are vital for human-nature interaction and therapeutic potential. However, the presence of animals and plants alone is not enough for a contemplative experience.

The perceived richness of species and the appearance of being wild and diverse matter more than ecological metrics for promoting health. A balanced approach between wild and tamed nature is crucial.(Olszewska-Guizzo 2023)

It is also noted that the immediate presence of animals and plants is not a determining factor for human healing mechanisms. Prominent examples of landscapes dominated by inanimate objects that are highly contemplative and therapeutic - are ocean beaches (Beute et al. 2020) or deserts (Yin et al. 2022, Garza-Teran et al. 2022). This is an essential reminder that mere landscaping may not be enough (Stigsdotter & Sidenius 2020).



2.4.5. Light and color

Research has shown that the benefits of the color and light aspects of the landscape are noted both at the subconscious level, contributing to the development of the mindfulness response and at the conscious level through self-report of good mood (Olszewska-Guizzo et al. 2022b, 2023). At the same time, the influence of the color and light component on the relaxation state in the

waking state remains to be elucidated.

The research also emphasizes that there is no scientific consensus on people's color preferences, and studies conducted in different geographic locations indicate that different preference patterns may exist in different places (Kaufman & Lohr 2002), probably driven by cultural factors. It is also important to remember that preferences do not directly influence mental health and well-being outcomes (what we prefer is not always good for our health).

The CLM generally defines that the most contemplative colors are warm hues and low saturation, diluted with other colors, and not overly contrasting.

It is also noted that the visible movement of shadows during the diurnal cycle or the passage of the sun and moon over the horizon, as well as multicolored highlights, rainbows, shimmers, and reflections, stimulate contemplative experiences, are related to the intangible, ephemeral aspect of nature and make a significant contribution to the contemplation of space. (Olszewska-Guizzo 2023)



2.4.6. Landform

In the analysis, landscape shape showed lower importance for scene contemplation than other CLM categories. (Olszewska-Guizzo et al. 2022b, 2023) Whether the landscape scene had a high or low landscape shape score, it had no significant effect on low-frequency brain waves. On the other hand, the self-report analysis showed improved self-esteem and subjective good mood. Landform characteristics are essential for creating a good mood but may not be prioritized in the design of therapeutic landscapes.

Research similarly emphasizes the importance of a component of landscape forms such as the sky. Watching a sunset, moving clouds, or stars at night are also natural processes of contemplation. Although the sky itself is

not an element that can be designed, some specific strategies can be used to encourage the visitor to look up. This can be achieved by manipulating attention with what is on the ground. (Smardon et al. 1986).

When working with the shape of the landscape, it is suggested to favor existing natural lines, following the natural topography if necessary to mimic the land's natural shape through landscape design. (Olszewska-Guizzo 2023)



2.4.7. Compatibility

Landscape scene compatibility showed the smallest contribution to overall landscape contemplation compared to the other CLM categories. According to neuropsychological studies (Olszewska-Guizzo et al. 2022b, 2023), even with the lowest contribution, it is an essential component of overall contemplative design.

Compatibility in landscape design refers to the unity of the elements and characteristics present in a form with its surroundings (Smardon et al. 1984). Creating harmony, balance and spatial order requires organizing elements in space in such a way as to create a pleasing unity, a whole that evokes aesthetic satisfaction.

Horizontal and vertical balance also play an essential role. Horizontal balance is the distribution of the compassionate weight of elements so that the view does not appear heavier on one side and lighter on the other. (Zelanski & Fisher 1996).

Vertical harmony involves balancing the top and bottom of the scene. The following important characteristic is the scale and proportions of objects- they should be well-designed and have the correct visual relationship to each other.

In other words, all these elements can be referred to as Spatial Order. The absence of distracting stimuli in our space is key to creating inner stillness and redirecting

thoughts from the outer world to the inner world (Hermann 2005, Krinke 2005, Tuan 1990).

Researchers remind us that although complex compassions may be more appealing, simple spaces are best for contemplation. Attractiveness and contemplation do not always go hand in hand.

To design contemplative landscapes, Agnieszka Olszewska-Guizzo suggests using a number of reductionist strategies mainly based on enhancing the contrast between form and lack of form and empathizing with the open space and natural environment. Strategies such as compressing elements: grouping, stacking, distancing; hiding or submerging objects in natural structures (e.g., underwater), using a mirror effect or transparency to hide objects, introducing temporary elements; and using dematerialized, ephemeral structures such as light, air movement, etc. instead of solid ones are just some examples of strategies for creating more reduced, i.e., more contemplative spaces. (Olszewska-Guizzo 2023)

2.5. Result of the literature review

Therapeutic landscapes and gardens can not only provide functional effectiveness of the surrounding environment, but also improve the healing process by affecting emotional well-being (Olszewska-Guizzo 2023). The green environment outside the window has a significant effect on the amount of pain relief people take after surgery (Ulrich 1984) and may have a similar effect for people in a hospice centre. An important quality of the surrounding environment is how much time the patient is willing and able to spend in it, as studies have reported a correlation between time spent in green areas and improved mood (Berman et al. 2012). Walking can have an impact on a person's well-being, especially for people with mental health conditions such as depression (Berman et al. 2012, Roscoe et al. 2022). Unfortunately, this study does not specify the nature of depression and we need more detailed studies to understand whether we can include people experiencing existential crisis in this category, but there may be positive effects on these people as well, as we can talk about the influence of green spaces in general on the emotional and psychological state of people (Kondo et al. 2018), as natural healing properties are especially relevant in the case of stress reduction. Passive contemplation of the landscape has an effect on stress reduction and well-being, with landscapes with high levels of contemplation having a particularly strong effect. (Olszewska-Guizzo 2023)

Based on the results of the literature review, several important characteristics to the therapeutic landscape of a hospice centre can be identified. The presence of these characteristics in the therapeutic landscape will enable the landscape to have a positive impact on people's condition:

1. the landscape should be visible from patient bedroom windows.
2. the landscape should provide opportunities for both

active interaction with it (walking, gardening) and passive interaction, such as contemplation.

3. It is important that contemplation is accessible from patients' rooms, as well as from both frequently visited areas and more secluded corners of the garden. It should be accessible for people who can walk independently as well as for people in chairs and beds.
4. The landscape should provide the opportunity to spend as much time in it as possible.
5. The landscape provides services to hospice patients, their families, friends and staff.
6. It is important that the therapeutic landscape of the hospice centre has places for comfortable observing of highly contemplative views of the landscape.
7. The smells and sounds of the environment are also important elements.

Case study

The aim of this chapter is to examine in detail the case on which the method will be tested. For this purpose, following the logic from the large to the frequent, the specifics and needs of palliative care will be discussed first. Then general information about Mellanorrland Hospice will be presented, describing details of the environment and atmosphere to create a general sense of the visit and the interaction with staff and guests. And finally a contextual analysis of the situation will be presented - to familiarise the reader with the physical context of the environment.

3.1. Palliative Care Framework and Philosophy.

According to the World Health Organisation, “Palliative care is an approach characterized by a holistic view of the person by supporting them to live with dignity, with the best possible well-being and quality of life due to terminal illness as the end of life approaches.” The Swedish National Board of Health and Welfare defines the field of palliative care as helping patients with incurable illnesses or injuries. (Socialstyrelsen 2020)

Palliative care aims to improve the quality of life of patients and their families and those who provide these services: healthcare workers, volunteers, and other members of supporting professions. “Care is provided for the full range of problems associated with a life-threatening illness, whether physical, psychological, social or spiritual.” (Lindskog et al. 2008) This feature distinguishes palliative care because considerable effort, attention, and resources are devoted to ensuring the emotional and psychological well-being of the patient.

The Swedish National Care Guidelines (Vårdhandboken 2013) highlight four cornerstones of good palliative care:

1. Symptom relief. Palliative care is given to a patient when the treatment is no longer curative. The goal of ongoing treatment is to reduce disease-related symptoms. All physical, psychological, social, or existential symptoms should be alleviated.
2. Caregiver support. Family members play an important role in palliative care, and their involvement is crucial. It follows that the support of family members is also crucial. Families should work together to care for the patient, and their wishes should be respected as much as possible. Healthcare providers are responsible for ensuring that family members feel their presence and involvement are essential.

3. Collaborate with multidisciplinary professional teams. The palliative care team comprises different medical specialists, nurses, and other professionals, depending on the situation. The team should be united by a common goal everyone, including the patient, understands and supports.

4. Communication and relationships. Good relationships and open communication between the patient, their family, and medical professionals are essential for improving the patient’s quality of life.

The National Palliative Care Council identifies two types of palliative care: general and specialized. (NRPV 2022) General palliative care is provided in primary care, home care, and nursing homes by staff with essential knowledge and competence in palliative care. A multidisciplinary team provides specialized palliative care with essential knowledge, competence, and experience in palliative care. It is provided to patients with complex symptoms or a life situation requiring 24-hour care. Specialized palliative care can be provided at home or in a hospice facility.

“Good palliative care should be available wherever the patient is - at home, in a hospital, or a care home. The aim is that patients can decide where to receive care and that they are offered equally good care everywhere” (Beck-Friis & Jakobsson 2012).

In the following, this thesis will focus only on specialized palliative care provided in hospice centers.

3.2 The healing

Creating a therapeutic landscape is based on identifying the various factors the natural environment can support healing, cure, or promote well-being. The very definition of recovery in palliative care differs from that in other types of health care. Health care aims to create health and longevity for patients. In palliative care, quality-of-life goals are set instead since the disease is no longer treatable. Quality of life is based on an internal state, which is subjective and individual. At the same time, physical and external circumstances also influence the perception of quality of life (Olsson et al. 2014).

When a patient is in palliative care, they are as close to dying as well as to living. This raises many patient questions and concerns, which are difficult to live with and challenging to discuss. Patients in palliative care are at high risk of experiencing an existential crisis. Psychiatrist Irving Yalom identifies the four existential themes: death, meaninglessness, isolation, existential loneliness, and freedom. In understanding and experiencing the challenges that palliative care deals with, let us explore these themes more deeply:

Death. Death can be met in different ways but is always inevitable. When one knows death is near, thoughts and fear of death increase. People deal with it in different ways,

depending on previous experiences. (Sand 2013).

Freedom. The conflict in palliative care is that the patient must dare to ask for help to receive it and that this must not infringe on the freedom and autonomy of the patient (Sand 2013)

Existential Loneliness. Existential loneliness is not the same as social loneliness. In existential loneliness, the patient may be surrounded by people. However, they do not notice or do not understand their suffering, and talking about their suffering does not seem appropriate, as the patient does not feel heard (Brülde 2015).

Meaninglessness. Meaninglessness is a feeling of hopelessness, powerlessness, anxiety, and death. If meaninglessness spreads and imprints itself on life, the feeling of yearning for life disappears. Encountering people who feel meaningless can also be an existential challenge (Sand 2013).

Each of these topics can cause significant stress. Finding answers to fundamental questions about life, death, and the meaning of existence can be very emotionally and psychologically taxing. It is often accompanied by feelings of anxiety, worry, and depression (Besharat et al. 2020). These two states, stress, and existential crisis, can interact and influence each other, creating complex emotional and psychological challenges for the person going through such periods. Since stress can be one of the factors contributing to existential crisis, intensifying its manifestation and being its generation, further on in the thesis, we will speak specifically about stress, but keeping in mind the complexity and interconnectedness of stress and existential crisis in palliative care.

Thus, the term ‘healing’ is used here to refer to the psychological processes of accepting the changes that occur as a consequence of illness or trauma, as well as the state of acceptance and calm in the process of experiencing psychological, social, and existential crises. (Olsson & Gunnarsson 2014) ‘Healing’ implies a broader concept of care within palliative care that extends to the patient as well as the patient’s family and loved ones (Steele & Davies 2015).

“We thought of life by analogy with a journey, a pilgrimage, which had a serious purpose at the end, and the thing was to get to that end, success or whatever it is, maybe heaven after you’re dead. But we missed the point the whole way along. It was a musical thing and you were supposed to sing or to dance while the music was being played.”

(Watts 1970)

3.3. The Mellannorrland Hospice

Mellannorrlands Hospice was initiated by the Mellannorrlands Hospice Fundraising Foundation and built in 2006/07 to provide inpatient care for the most seriously ill patients at the end of life “to meet the special physical, mental, social and spiritual, existential needs of patients” (Mellannorrlandshospice 2022). It is run as a not-profit organization by Mellannorrlands Hospice AB, wholly owned by the Mellannorrlands Hospice Fundraising Foundation.

The hospice is located in the Västernorrland region in the municipality of Sundsvall in a unique location on the hill slope by the lake Sidsjön. The hospice provides 14 nursing care places in single rooms with overnight accommodation for relatives. The hospice can accommodate more than 100 people per year. Mellannorrlands Hospice’s summary statistics (Tab.1) shows how different patients can be in terms of age and length of stay.

In addition to the physical characteristics of the hospice’s internal and external environment, which will be discussed in more detail below, and the statistics that demonstrate the high level of compliance with the basics of palliative care, Mellannorrlands Hospice has a uniquely warm and friendly atmosphere, far removed from the atmosphere of a medical institution, which is felt as soon as you cross the fence.

By definition, the atmosphere is unstable, changeable, and dependent on many factors, most notably the human element. Nevertheless, the atmosphere is the most crucial goal of the palliative approach and landscape architecture. I find evidence of what I have experienced in the voices of people who have visited and worked in this hospice. This discourse of first impressions, support and continuation of what is already valuable and meaningful is appropriate in the context of concept development, but requires more detailed consideration at further stages of development. Without pretending to be objective, these quotes demonstrate the aims and values of the hospice, which are actively promoted and developed by the hospice itself and which I observed during my fieldwork (Mellannorrlands Hospice 2022):

Here’s what the daughter of one of the hospice guests writes:

“Dad’s room was fantastic, as I realized over time, it had a wonderful view of the Lake Side, from his bed he could watch the ice send off and spring come in for the last time. He never complained, my little daddy, even though cancer ate first his skeleton and then his marrow, always smiling when I came in and sending air kisses when I left. I didn’t realize anything. My mum moved there and was there for him all the time, and that’s one of the great things about the hospice, they took care of all of us. We could come and go whenever we wanted. My sister, my daughter and I spent a lot of time there. Traveling by train to Sundsvall became as natural as going to work.”

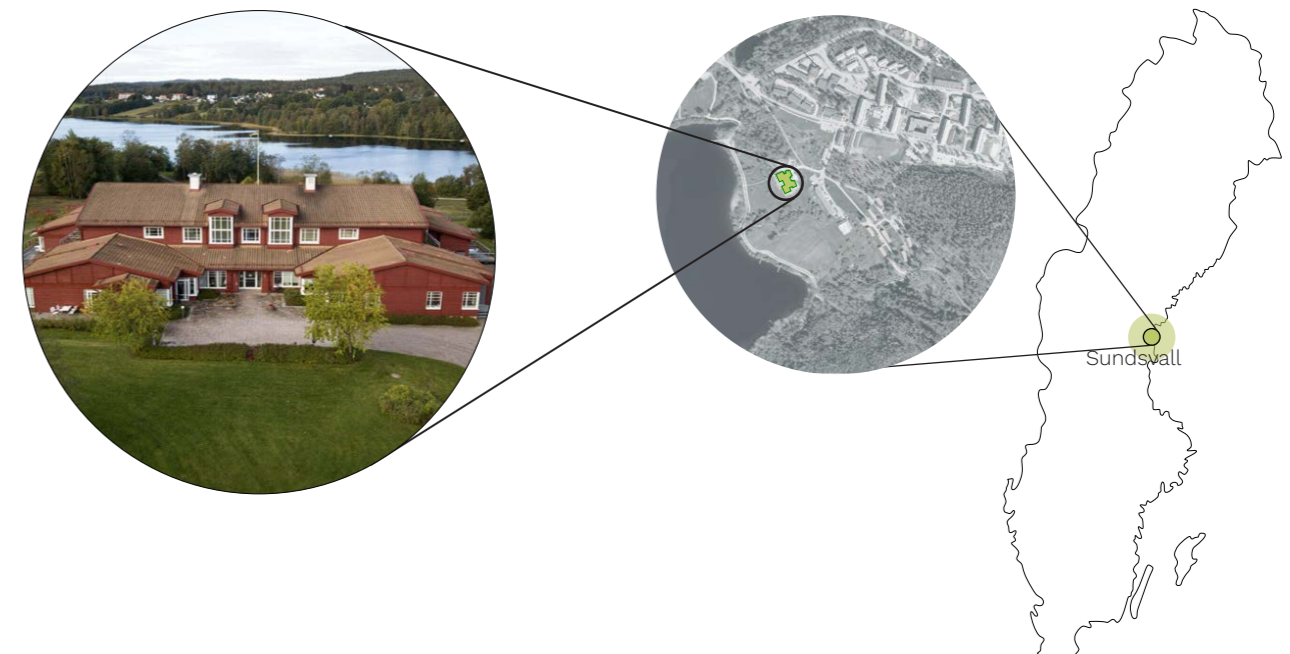


Figure 3: Location of the Hospice: Sundsvall - northeastern Sweden.
Cartographic source: Aerial photo © Lantmäteriet ; Photo of Mellannorrlands Hospice
(<https://hospice.se/om-hospice>, 2023)

	2021	average for 2008-2018
Referrals and registrations	190 Referrals 134 registrations	193/year 121/year
Average occupancy	10,8 seats (90% of 12 seats)	11 seats (92% of 12 seats)
Diagnoses	92% cancer 8% non-cancerous	More than 90% cancer Just under 10% non-cancerous
Age	Average 73 year Youngest 41 year Oldest 92 year	Average 72 year Youngest 26 year Oldest 97 year
Duration of care	Average 25 days Median 17 days Shortest 1 day Longest 153 days	Average 31 days Median 16 days Shortest 1 to 50 min Longest 1,4 year
Cases of death	124	112

Table 1. Mellannorrlands Hospice’s summary statistics provide an overview of patients’ situations and the time they spend in the hospice centre.

Source: <https://hospice.se/om-hospice/kvalitetsresultat-statistik>.

And here's what the staff and volunteers have to say about the hospice and palliative care:

"We know that our guests come here to spend one last time with us. It is a big responsibility to help and make this time as good as possible, based on the conditions that exist at the moment. It is important to give space to difficult existential questions, anxiety and sadness and at the same time create space and opportunities for laughter, fun and safety."

Lena, nurse



Figure 4. A plan showing the direction of the view when analysing.

Cartographic source: based on © Lantmäteriet

3.4. Study area description

In order to prepare for the CLM-based analysis, here's the description of the area. It will allow for better understanding of the spaces without affecting the CLM analysis as such.

Inventory plan shows the surrounding situation:

From **east** to west there is a noticeable slope towards the lake, well visible from the height contours in Fig.4

To the **east** of the hospice building there are residential areas with residential and public buildings as well as the main and single access to the centre.

On the **north** side of the hospice grounds there are parking spaces for staff and guests of the centre, as well as a service building and in the **north-western** part there is a small greenhouse used as a recreational area.

To the **south** of the building there is a forest belt separating the hospice grounds from a field.

On the **west** side of the building there is a terrace with a ramp and steps. The terrace surrounds the buildings on the north, west and south sides. From the west and south, windows and exits from the patients' rooms open onto the terrace.

There is a walking path to the **west** of the building, and beyond the centre, in the Sidsjön Nature Reserve, there is a field and a walking path along the lake.

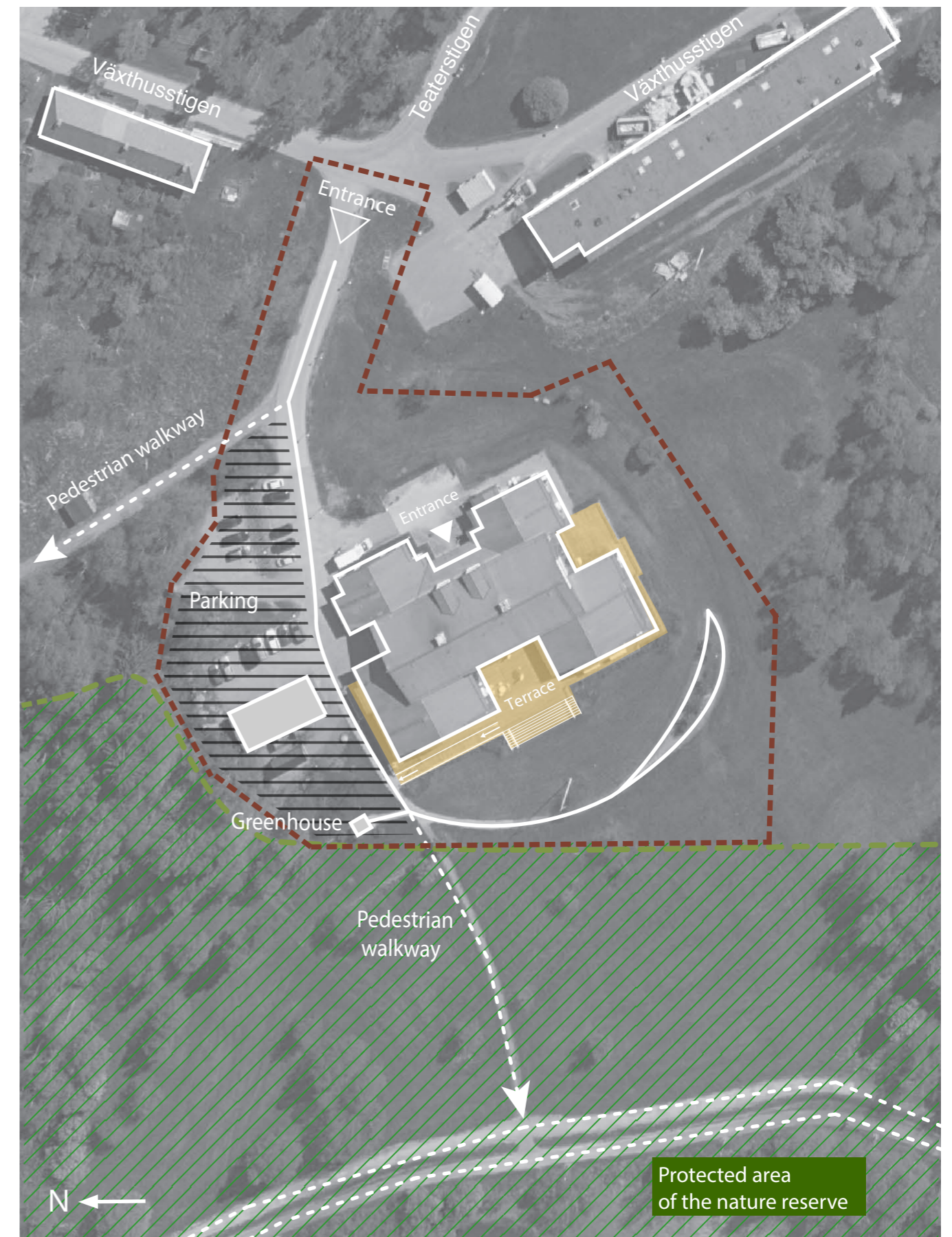


Figure 5: Inventory plan of the existing situation shows: Red dashed line - boundaries of the territory of the hospice centre; the surrounding situation as well as the objects located on the territory.

Cartographic source: © Lantmäteriet

The vegetation inventory plan gives an understanding of the location of tree groups and free-standing trees.

Also the white area shows the field of view from the centre of the terrace from where the analysis was made using the contemplative landscape model, which will be described below.

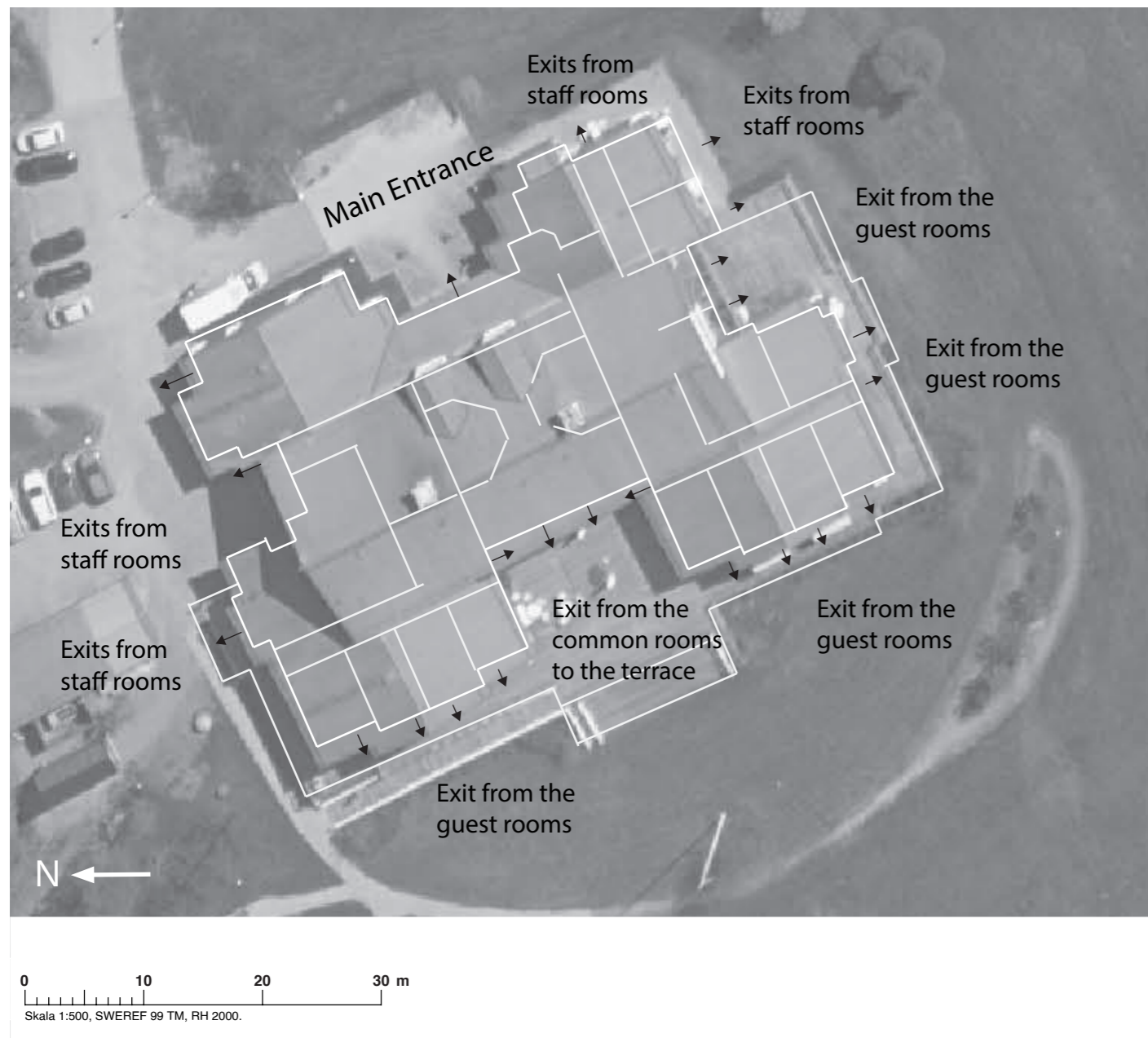


Figure 6. The plan of the organisation of the interior of the building. It also shows the location of patient rooms and the orientation of their exits and windows. Cartographic source: © Lantmäteriet

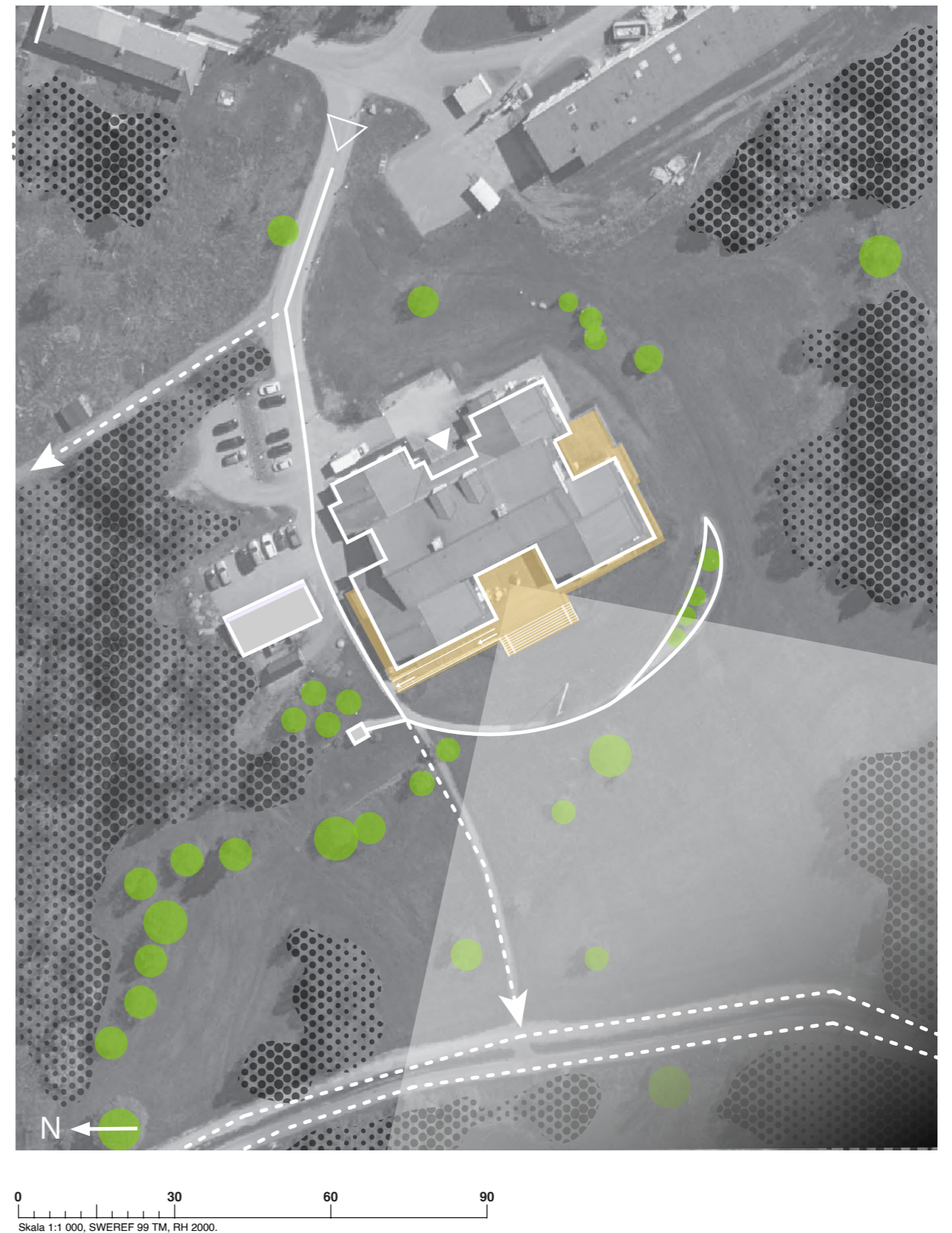


Figure 7. Inventory plan of vegetation shows: Individual trees are shown with green circles and groups of trees are marked with a rounded fill pattern. The white area shows the boundaries and direction of field of view.

Cartographic source: © Lantmäteriet

3.5. Specific conditions and requirements of the case.

The features of the selected case study are the presence of an area suitable for further creation of a therapeutic garden, as well as an open view of the lake, which itself is a unique advantage of the case study. Another feature of the case study is the architectural layout of Mellannorrlands Hospice. As shown in Figure 6 most of the patient rooms are orientated towards the south-west and south-east. This is precisely the orientation that allows for unobstructed views of the lake and woodlands from the window. The free, contemplative view from the rooms and terrace is also favoured by the slope.

These specific conditions and requirements of the case indicate that the case chosen for testing the contemplative landscape method can be characterised as a case with optimal conditions. Testing under optimal conditions will confirm the viability, sustainability and effectiveness of the proposed changes.

Testing

4.1 CLM analysis

In the book, Agnieszka Olszewska-Guizzo described a step-by-step guide (see Tab. 3) to assessing the quality of green spaces and how to objectively measure each of the seven key components of a contemplative landscape related to mental health and well-being discussed above. This scoring system is applicable to both photographic and video representations of the landscape as well as the actual view on the ground. Both approaches should include views as close as possible to the actual viewing capacity of the human eye. (Olszewska-Guizzo 2023)

The analysis was conducted by me, through direct perception of the landscape on 10 May from 13:30 to 15:00 in sunny weather. The vantage point was chosen in the central part of the terrace, where patients and staff of the hospice center most often spend their time and observe the landscape from the terrace. Analyses were conducted from a seated position on a bench in the seating area. This position and viewpoint are accessible to most patients with the exception of those lying in beds and people who can sit up but have difficulty keeping their heads upright. For these people and people with visual impairments, this analysis will not be relevant, but the specifics of their contemplation process will be taken into account in the proposed concept.

To demonstrate the results of the analysis, a picture was used (see fig. 8-11). However, this image differs from the live process of contemplation by the lack of depth of the view.

Each element is assessed through a number of questions that help to determine which score represents the contemplated landscape. Below follows my answers to these questions, and the questions themselves can be found both in the book (Olszewska-Guizzo 2023) and in this thesis in the appendix part.








	 LAYERS OF THE LANDSCAPE	 LANDFORM	 BIODIVERSITY	 COLOR & LIGHT	 COMPATIBILITY	 ARCHETYPAL ELEMENTS	 CHARACTER OF PEACE AND SILENCE
6	far distance view (400m or more) layers greatly enhance the visual quality	undulating landform, natural lines	high diversity of speciesplants seem native; seasonally changing vegetation	natural, broken or warm colors AND visibility of light and shade	physical and visual relations are worked out AND explicit spatial order, harmony, balance between natural and created	strongly influence the overall perception	explicit in contrast to the urban environment invites to rest and relax AND gives sense of solitude
5							
4	layers moderately enhance the overall visual quality	landform is not very significant to the setting OR hard to say	moderate diversity of vegetation-moderate changes across the seasons	moderate amount of contrasting colors. moderate amount of light and shade	physical and visual relations are not clear OR some elements disturbing the harmony and balance	are present but not important for the overall perception	moderate, AND/OR moderate sense of solitude AND/OR less contrast with urban environment
3							
2	layers do not enhance the overall visual quality OR no layers	flat or rugged landform	low diversity of vegetationminority of native speciesno seasonal changes	lots of vivid, contrasting colors, light and shade are not visible	physical and visual relations are not worked out well or not at all OR chaos/lack of harmony	no archetypal elements	no character of peace and silence, busy, no contrast with the urban environment
1							

Table 2. Contemplative Landscape Model for landscape evaluation with 1 to 6 point scoring. Source: Olszewska-Guizzo (2023, p. 214).

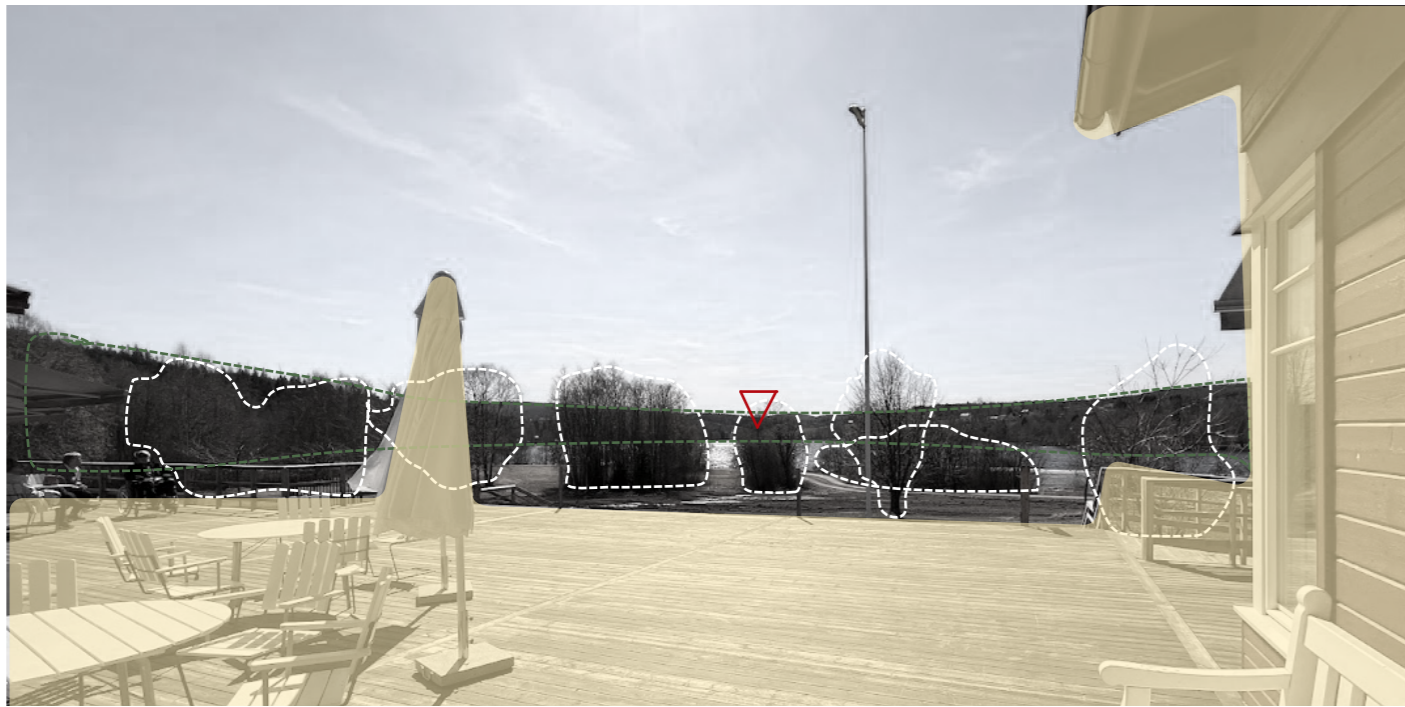


Figure 8. Landscape layer assessment, showing the following objects: the foreground (fill); the middle ground (white stroke line); the background (green line); and the point of attraction of the view, which is difficult to see on the picture but easy to identify in reality (red triangle).

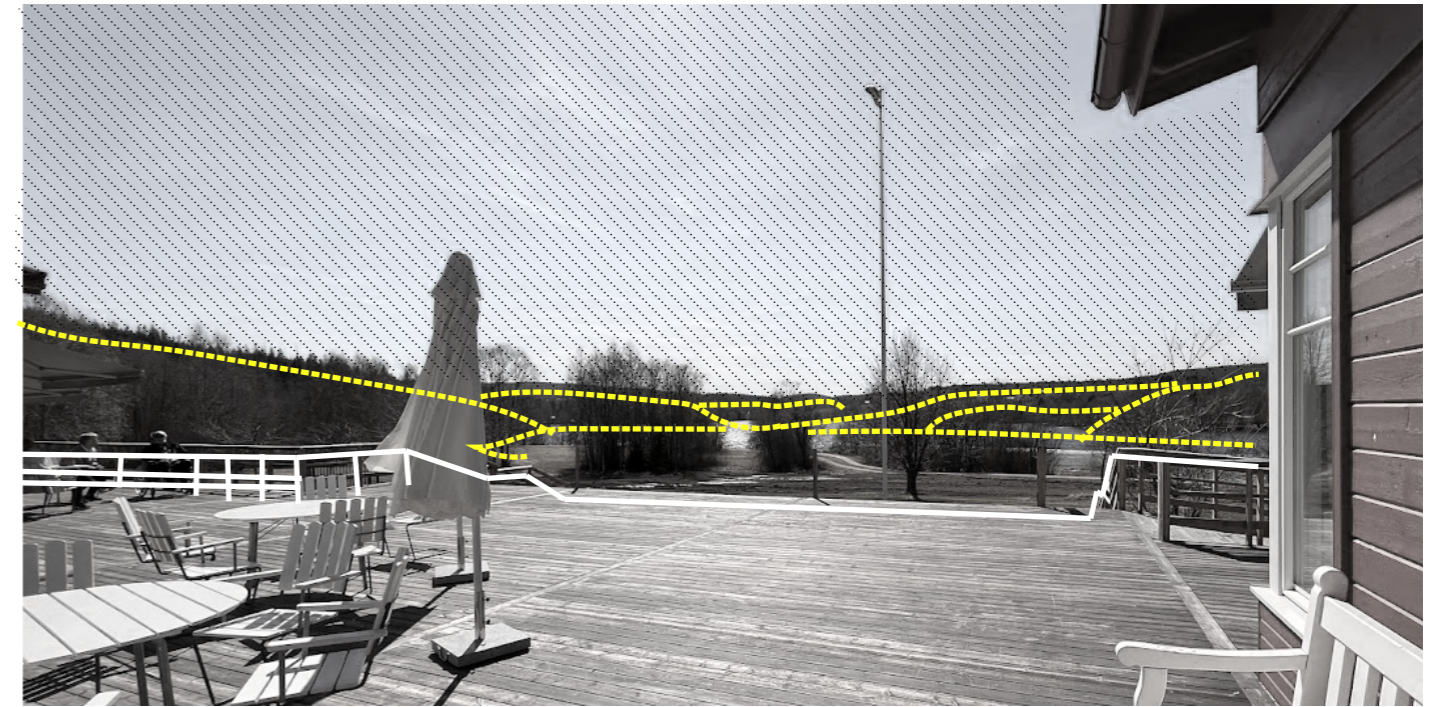


Figure 9. Evaluation of the shape of the ground. Shown are: sharp corners of the foreground (white line), smooth lines of the background (yellow line), and flatness of the sky (shading).



STEP 1 Layers of the Landscape:

- The landscape has a pronounced depth.
- The foreground is a terrace fence and a trimmed shrubbery.
- The background is partially visible. Trees partially hide it. The most distant object is at a distance of approximately 1.58 kilometers.
- Between the foreground and background, there is a lawn, field, road, trees, and lake.
- The viewer's eye is also automatically directed to the farthest object, as the hills create a visual perspective that seems to converge at the farthest point in the landscape, but only when the foliage of trees does not hide it.
- The distant view is aesthetically pleasing and out of the way.
- The overall picture is as follows: the foreground is massive and empty, the middle ground is unbalanced, overwhelming the picturesque distant background.
- The flagpole is in the way and distracting.

The overall score is therefore 3, as the visible layers only moderately enhance the overall visual quality.

6	far distance view (400m or more) layers greatly enhance the visual quality
5	▼
4	layers moderately enhance the overall visual quality
3	▼
2	layers do not enhance the overall visual quality OR no layers
1	



STEP 2 Landform:

- The ground is uneven.
- The topography is natural.
- In the foreground, the topography change is barely noticeable. But there are many hills in the background.
- Both straight lines of ploughed furrows and undulating path lines are present.
- Also visible are straight lines of fences, flagstones.
- The fences create geometric shapes with straight lines and sharp edges.
- In general there are many straight lines and corners in the foreground, while the background shows an abundance of undulating lines.
- The overall impression of the landform is somewhat flattened and elongated horizontally. This effect is due to the viewpoint being slightly above the landscape, which slopes gently down to the water.

Thus an overall score of 4 as there are smooth and undulating landscape lines and pronounced hills in the background. But in general the view is perceived as flattened vertically and stretched horizontally, which in its turn does not favor the eye's movement up to the sky.

6	undulating lanform, natural lines
5	▼
4	landform is not very significant to the setting OR hard to say
3	▼
2	flat or rugged landform
1	

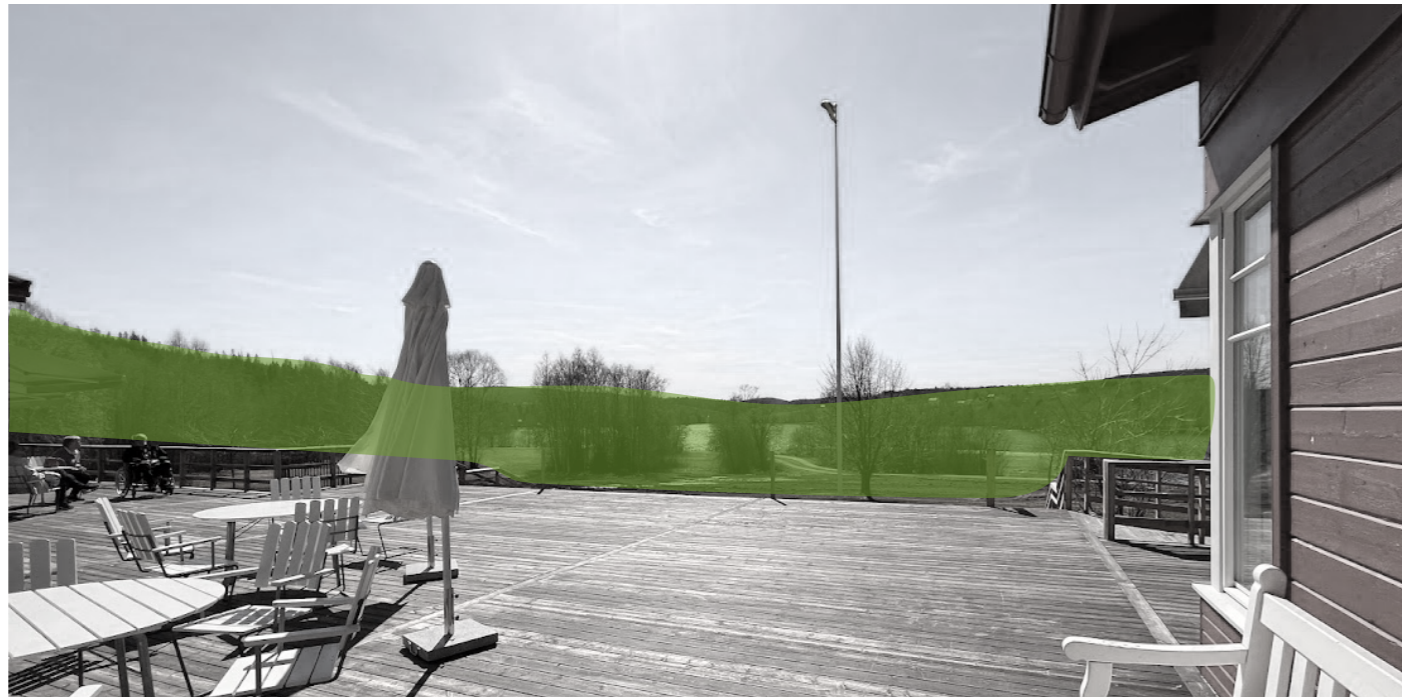


Figure 10. Biodiversity valuation. The middle and back layers provide a continuous line. Middle layer: lawn and trees.



STEP 3 Biodiversity:

6	high diversity of species plants seem native; seasonally changing vegetation
5	▼
4	moderate diversity of vegetation moderate changes across the seasons
3	▼
2	low diversity of vegetation minority of native species no seasonal changes
1	

- There is minimal number of plant species, especially considering the area being on the border with a protected nature reserve.
- Birds can be seen on the lake in the distance
- The vegetation nearby looks well-maintained and neat, but the islands of trees in the distance behind the hospice grounds look neglected.
- The wind, glare, and clouds create the dynamism of this scene at the moment and the change of season is evident in the trees, grass on the hospice grounds and the field and lake outside the hospice grounds.
- The colors also change according to the time of day or season.
- Not a single plant, animal, or phenomenon in the frame evokes fear, loss, or discomfort for most people.

Thus, overall score: 3 as there is a moderate diversity of species and a moderate opportunity for change and movement.



6	natural, broken or warm colors AND visibility of light and shade
5	▼
4	moderate amount of contrasting colors. moderate amount of light and shade
3	▼
2	lots of vivid, contrasting colors, light and shade are not visible
1	

STEP 4 Color & Light:

- There are few bright and contrasting colors in the scene.
- There are few shadows on a sunny day.
- There are few shadows on the ground on a sunny day.

Therefore an overall score: 5 as the color palette is harmonious and natural, with predominantly broken or warm colors, but the movement of light and shadow is poorly represented.



6	physical and visual relations are worked out AND explicit spatial order, harmony, balance between natural and created
5	▼
4	physical and visual relations are not clear OR some elements disturbing the harmony and balance
3	▼
2	physical and visual relations are not worked out well or not at all OR chaos/lack of harmony
1	

STEP 5 Compatibility:

- There is no chaos and disorder in the scene.
- There are no odd elements in the scene that don't fit into the composition.
- Potentially interesting views are obscured.
- The emptiness of the foreground is disconcerting.

So overall score: 4 as there is a clear spatial order, simplicity and harmony between the natural and artificial elements, but the physical and visual relationships are not well worked out and are random.

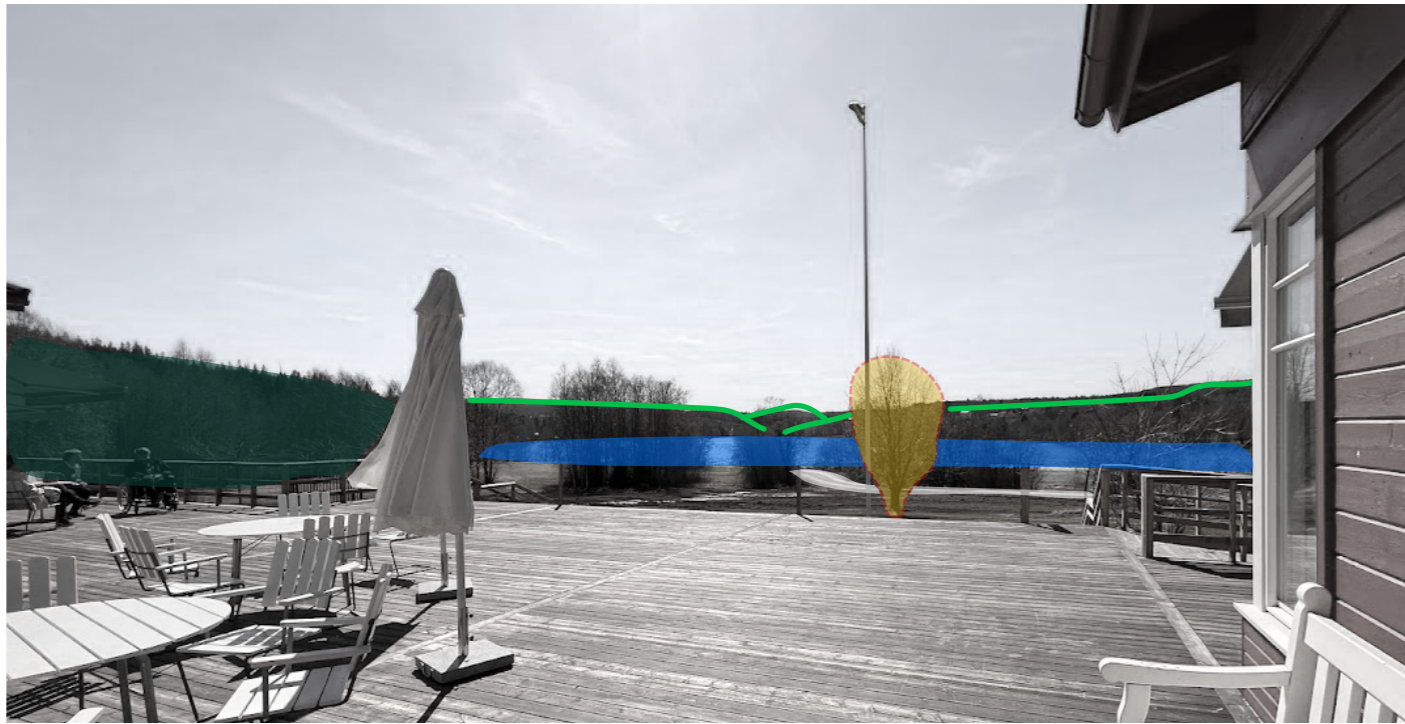


Figure 11. Assessment of archetypal elements. The following archetypal elements are displayed: Forest (green fill); water (blue fill); path (white fill); lonely tree (yellow fill), hill (green stroke).



6	strongly influence the overall perception
5	
4	are present but not important for the overall perception
3	
2	no archetypal elements
1	

STEP 6 Archetypal Elements:

- Archetypes are present in the scene: path, water, hills, forest and a solitary tree.
- The archetypal elements are dominant and important to the scene.

So overall score: 6 as the archetypal elements strongly influence the overall perception.



6	explicit in contrast to the urban environment invites to rest and relax AND gives sense of solitude
5	
4	moderate, AND/OR moderate sense of solitude AND/OR less contrast with urban environment
3	
2	no character of peace and silence, busy, no contrast with the urban environment
1	

STEP 7 Character Of Peace & Silence:

- There is a visual and physical separation between the green space and the busy urban space.
- There are no cars visible in the area, but there is a frequently used walking trail in the distance.
- There are no other places to relax and retreat apart from the veranda.
- It's a pretty quiet place.
- The space feels safe but not intimate.
- Technical infrastructure such as wires, pipes or antennas are not visible.

Thus an overall score: 5 as the scene has a distinctly peaceful and quiet character, and contrasts strongly with the urban environment. The space seems accessible, safe and without any technology. But it does not create a sense of privacy.

To get the overall CLM score for the scene, it is necessary to calculate the average of all assigned scores and interpret the scores using the Table from the book. (Agnieszka Olszewska-Guizzo, 2023, p. 203)

Average score = 4.28 - "Average contemplation score, which indicates a low or zero probability of eliciting a positive mental reaction in most people." (Olszewska-Guizzo 2023)

4.1.1. The result of an analysis of the therapeutic landscape of The Mellannorrlund Hospice Centre's using the contemplative landscape model.

Analysis using a contemplative landscape model from the most accessible and frequently visited point of the Mellannorrlund Hospice Centre showed that the view as a whole has a medium contemplation score, indicating a low or no likelihood of eliciting a positive mental response in most people. Detailed analysis of individual elements showed that the elements with the highest contemplative scores, such as 'Character of Peace and Quiet', 'Layers of Landscape' and 'Biodiversity', are represented in the landscape but are weakly expressed. The ability to change each individual element reveals their potential. Unlocking this potential should, in theory, increase the overall level of contemplation of the landscape.

Besides the result of the analysis itself, I will note observations and reflection on the process of using the contemplative landscape method as a tool for analysis. The peculiarity of this analysis is that it is fully accompanied. The elements to which the researcher's attention is drawn are clearly defined, as are the characteristics and significance of the elements. During the research process, the importance of an element influenced the amount of attention I've put to study it. I wanted to spend more time on the elements that had the greatest impact on the overall level of contemplation.

The questions to the elements play a special role in the analysis. Most of the questions are closed-ended and allow for specific information, making the process of answering them quick and easy. However, the relationship between the questions and the assignment of a score is not fully understood. While answering a question is more objective, scoring is rather subjective.

Thus, despite the simplicity, clarity and ease of use of the method, the result may be subjective.

4.2. Design



Figure 12. Illustration of the “freeze frame”.

The design work was based on the Contemplative Landscape Model. The design development process utilized both CLM landscape analysis and recommendations for the creation of each of the 7 key components. The most important components were addressed first: Character of Peace and Quiet, Layers of Landscape, Archetypal elements and Biodiversity. These are the elements that, according to research, have shown the greatest contribution to the overall level of contemplation of the landscape. (Olszewska-Guizzo 2023) The remaining 3 components were then worked through in descending order of importance.

As CLM is a fairly new tool, this paper represents one of the first attempts to apply this tool to the design of a therapeutic garden for a hospice center.

It is also important to note that CLM analysis is still an analysis in a conventional two-dimensional format: the landscape is analyzed from a specific point. Whereas the

landscape design process is a three-dimensional space in which both the position of people and the environment changes. Therefore, it was decided to use the principle of “a freeze frame in a film” in the work on the design project. The entire space from the veranda to the borders of the hospice center in the direction of the lake is viewed through the eyes of a moving hospice patient who can be on his feet, in a wheelchair or in bed. The notional “film” in this situation is what the guest sees moving through the space. And the “freeze frame” is the view from the resting area or arbitrary stop along the way.

Thus, when designing a space, it is important to design the movement of the “camera” with close attention to “freeze frame”. Because it is at the moment of stopping, resting that a person can go deeper into the process of contemplation.



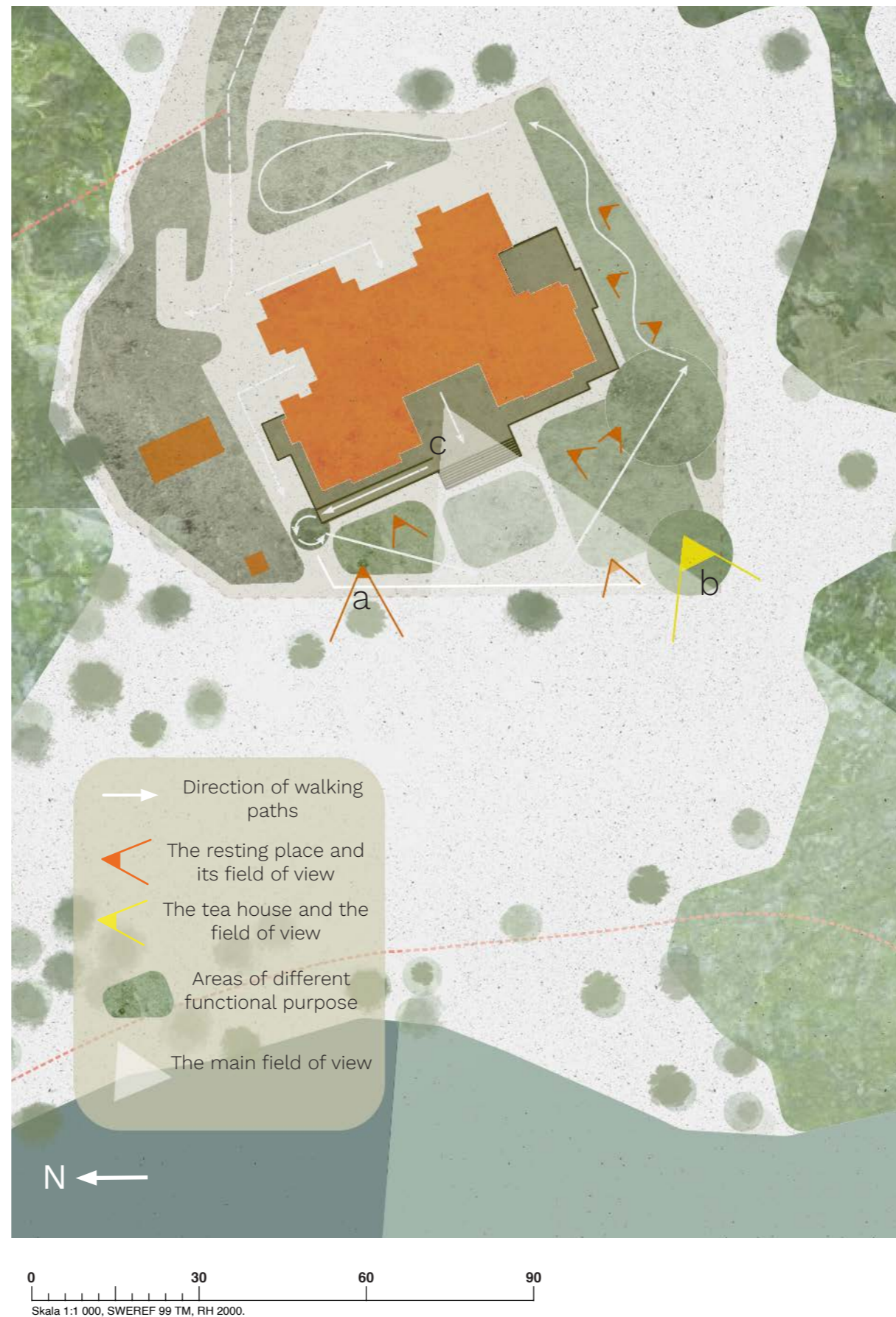
4.2.1. Character of Peace & Silence

The analysis showed that the overall landscape has a pronounced character of peace and quiet. Overall the space appears accessible, safe and devoid of any technological elements and clear signs of urbanization.

At the same time, there is a distinct lack of places to stop, relax and have privacy. Except for the veranda, there is no seating and the walkway is unattractive for walking (open, doesn't provide additional experience). In general, the whole area of the hospice center on which the veranda is facing looks empty and unused by the guests of the center. Therefore, the first step in the development of the project is to create a walking area with places for sitting, resting and privacy (see Fig. 13)

The second step is to create an additional space for solitude and contemplation - a garden pavilion for tea drinking, and resting. The pavilion should fulfill the criteria of accessibility and capacity for people including those in beds. It should also be located in such a way that it offers a highly contemplative view and at the same time it should not interfere with the view from the veranda. Therefore, the south-west part of the hospice site is proposed as a location option for this pavilion.(see Fig. 13,b)

A third step to enhance the character of the peace and quiet is to place additional elements on the terrace. The veranda, where guests and staff often stroll, is a public space and even the parts of the veranda that can be accessed from the guest rooms are highly visible and loosely separated from the common space. It is therefore proposed to install tree tubs and flower planters to visually divide the space and separate private areas (see Fig. 13,C).



a: an example of what an additional place of rest and contemplation might look like.



b: an example of what a tea house might look like - a place of relaxation and contemplation.



c: an example of using pots with plants to create a more private space on the terrace.



Figure 13. The map demonstrates how the new pedestrian traffic will be directed. It also defines where to place resting places and the direction of the view for contemplation.

Cartographic source: based on © Lantmäteriet; Illustration source: collages by the author



4.2.2. Layers of landscape

The CLM analysis has shown that a strong point of attraction in the contemplative background is obscured by the trees located in the middle part of the scene, which prevent the eye from wandering freely and viewing objects in the far background.

It would be possible to open up the background by completely or partially removing the trees blocking the view, but such a solution is unnecessary. On the one hand, the distance from the foreground to the middle ground is too great, and it is likely to be inaccessible for some people with visual problems. On the other hand, such a solution is not beneficial in terms of environmental impact.

Therefore, it was decided to defuse the trees by pruning them, thus making the background more open. Meanwhile, the focus was shifted from detail to the foreground - the area in the immediate vicinity of the veranda. Filling the foreground with new plantings will not only enrich the scene as a whole, but also create a new functional space with new time-use options for the center's guests.

As suggested in the previous section, the creation of additional places for privacy and viewing will also allow the point of contemplation to move closer to the foreground and make it more accessible for contemplation.

The positioning of the trees was chosen so that they would not block the most picturesque scenes in the background when viewed from the center of the veranda.

The positioning of the trees was chosen so that they would not block the most picturesque scenes in the background when viewed from the center of the veranda.

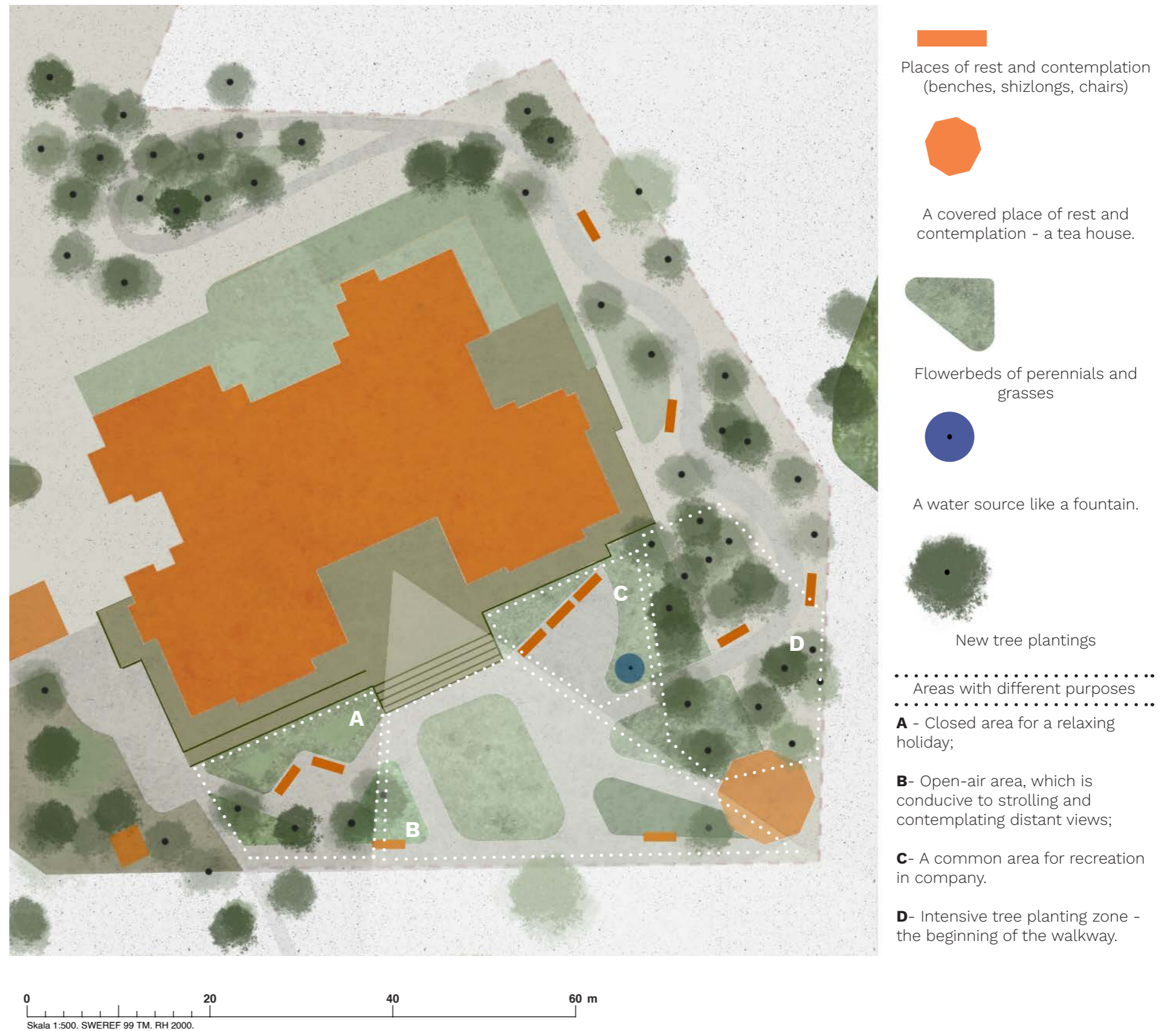


Figure 14. The illustrative plan shows how the new footpaths will be laid out, what blocks the space will be divided into and where benches, the tea house and new trees will be planted.

Cartographic source: based on © Lantmäteriet



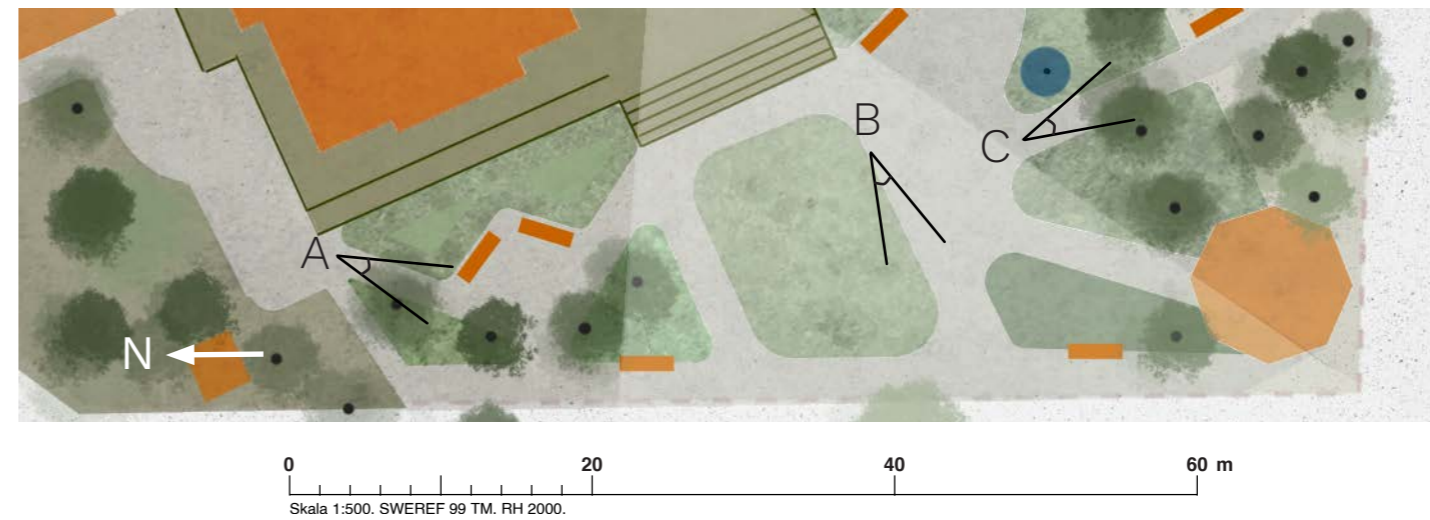
4.2.3. Archetypal Elements

Archetypal elements are quite strongly developed in this scene: water, path, glade, hill, lonely old tree, rock, forest, circle. Therefore, in the development of the conceptual design project, all elements were retained and where possible emphasized and enhanced compositionally: Open views of the water and new tree plantings were added to maintain open views of visually significant areas of the scene.

A pathway has been added and extended. Also, different coverings were used to diversify the experience of people walking through the garden (see Fig. 14).

The glade archetype (an open space that you enter as you walk along the path) was actively used in the organization of the walking space. The alternation of woodland and open space allows for different experiences as you walk, as well as the formation of secluded corners inviting visitors to explore them. These can hide fountains, figurines, mirror elements or berries for example. The hill and the lonely tree of the distant middle and far background remain unchanged. But as it was said before, there are new vantage points from which these elements will be better seen.

Stone is an important element of Swedish nature, so large stone boulders can be added as a design element. Circle says a lot about the positive influence of rounded lines on the overall contemplative effect. (Olszewska-Guizzo 2023) Therefore, all lines in the project have been rounded wherever possible.



A: An enclosed, cosy space, like a clearing in a forest

B: Open space with an open distant view

C: A space of intensively planted trees, with their crowns providing a canopy and a kind of entrance to the walking path.

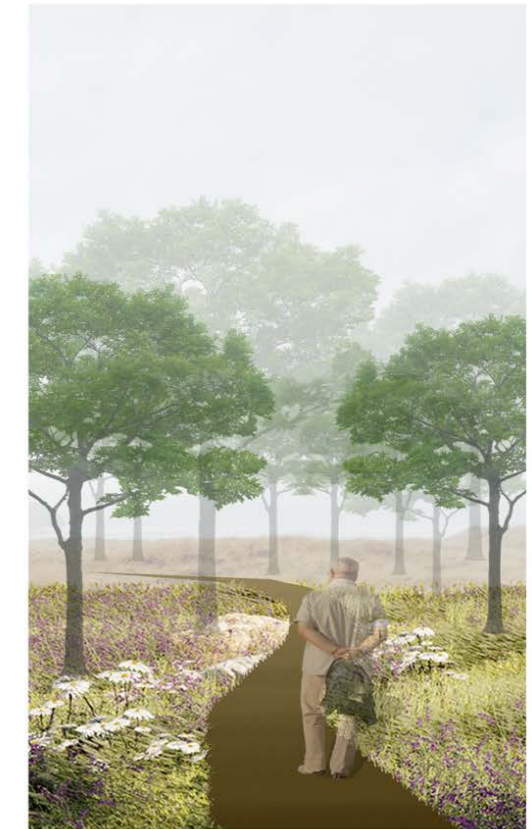


Figure 15. The plan and illustrations show that trees - as a middle tier - allow to create a separation of spaces with different characteristics and provide different experiences of being in them.

Cartographic source: based on © Lantmäteriet; Illustration source: collages by the author.



4.2.4. Biodiversity

The creation of a biodiverse environment is an important aim both in terms of the CLM approach and in terms of contemporary landscape architecture and design. However, in working along the CLM approach, the perception of wildlife and species richness is paramount - this is what evokes a reconnection with nature and a contemplative experience, rather than actual environmental metrics. This design solution for the project therefore offers a visual biodiversity solution that requires further consideration in terms of its relevance to the ecological values of the space.

In order to create a design that promotes a contemplative experience, it was decided to make the character appear wild, naturally seeded, native and spontaneous nature. By selecting native plants and combining them with perennials and grasses as well as stones and old paths. The landscape picture should look rich in a variety of plant species and not be overly cared for by humans.

When selecting plants, attention was paid to their visual characteristics: shape, color, size, growth dynamics and seasonal changes. In the future development of the project, plants can be replaced with more appropriate species, but if possible with similar visual characteristics. It is important to note that the wild spontaneous vegetation is balanced by a clearly visible zoning scheme, which prevents the garden from creating a character of excessive neglect and disturbing visitors.

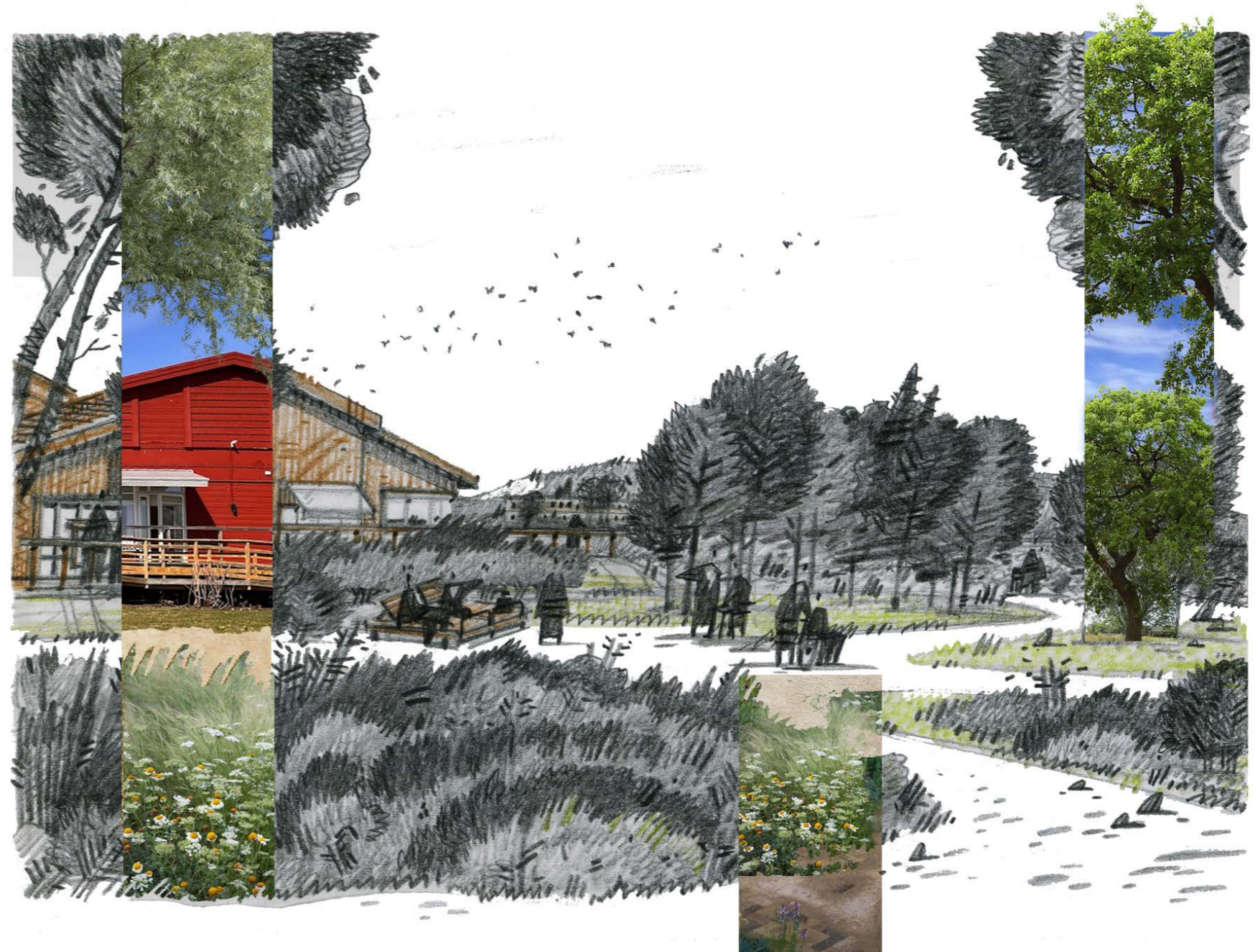


Figure 16. Illustrations of perspective with vegetation elements.



4.2.5. Light and color

As already mentioned in the chapter on color and light analysis : personal or collective preferences for color palettes have nothing to do with mental health and well-being, nor with contemplative landscape design, and the most contemplative colors in a landscape scene are warm in hue and low in saturation. Therefore, the plants were selected and arranged in such a way as not to create many contrasts of color and texture, but instead to create a play of nuances that would gently guide the observer's eye, gently and soothingly transferring the gaze from one element to another.

Thus the color solution for this project is a nuanced combination of shades of green, the color of nature, "which has the ability to create a sense of intimacy and solitude" (Hermann 2005), with the addition of the enveloping texture of tall grasses and a cloud of small flowers, so small that they create a coloured haze of white and purple in the abundant green environment rather than a complementary color.

Another important aspect of this element is light. The common situation in this region is a significant difference between summer and winter light. (see fig. 17). The south-western part of the hospice, where the patient rooms and the central part of the veranda are located, is in natural light for a long time both in summer and in winter (see Fig. 17). Accordingly, there may be a need for shade, which in time will be provided by overgrown trees. In the cold season, there is a need for additional artificial lighting. Various lighting programmes can help to fill the space with a new patient walking experience. For example, minimalistic evening lighting on the paths will draw attention to the lights of the opposite shore or the stars on a clear night. And brighter lighting of trees and perennial grasses will also make walking attractive in the cold, dark season.



Figure 17. Color palette - example of natural colors taken from the environment of the Hospice.
Source : <https://hospice.se/> (2023)



4.2.6. Landform

The natural, rounded lines separating the paths from the plantings give the ground a smooth undulation, while the alternation of groups of trees with empty spaces creates a vertical dynamic that encourages you to look upwards (see fig.19). The landform does not require any additional modifications. Naturally this renders landform not requiring any change.



Figure 18 A diagram of the sun's location according to the season: Reds are the longest day. Blue is the shortest day.

Cartographic source: based on © Lantmäteriet adding information from Siranet GK



4.2.7. Compatibility

Creating harmony and balance of spatial order occurs by organizing elements in space in such a way as to create a

pleasing unity - “a whole that stimulates aesthetic satisfaction” (Olszewska-Guizzo 2023).

The horizontal balance of the whole composition is achieved by balancing a large array of trees in the middle and distant background on the right side. When looking at the lake from the veranda, with the voluminous plantings of trees in the foreground on the right side, thus the scene becomes not symmetric but balanced. (see fig.19) Asymmetrical balance seems to be a more natural and adequate tool to ensure horizontal balance in a natural environment. (see fig.20)

Vertical harmony refers to balancing the upper and lower parts of the stage in different parts of the park varied. But in general, the alternation of open and closed views is visually interconnected and allows for a different experience when traveling through the park, with the possibility of stopping at a place that best suits the guest’s inner state. (see fig.21)

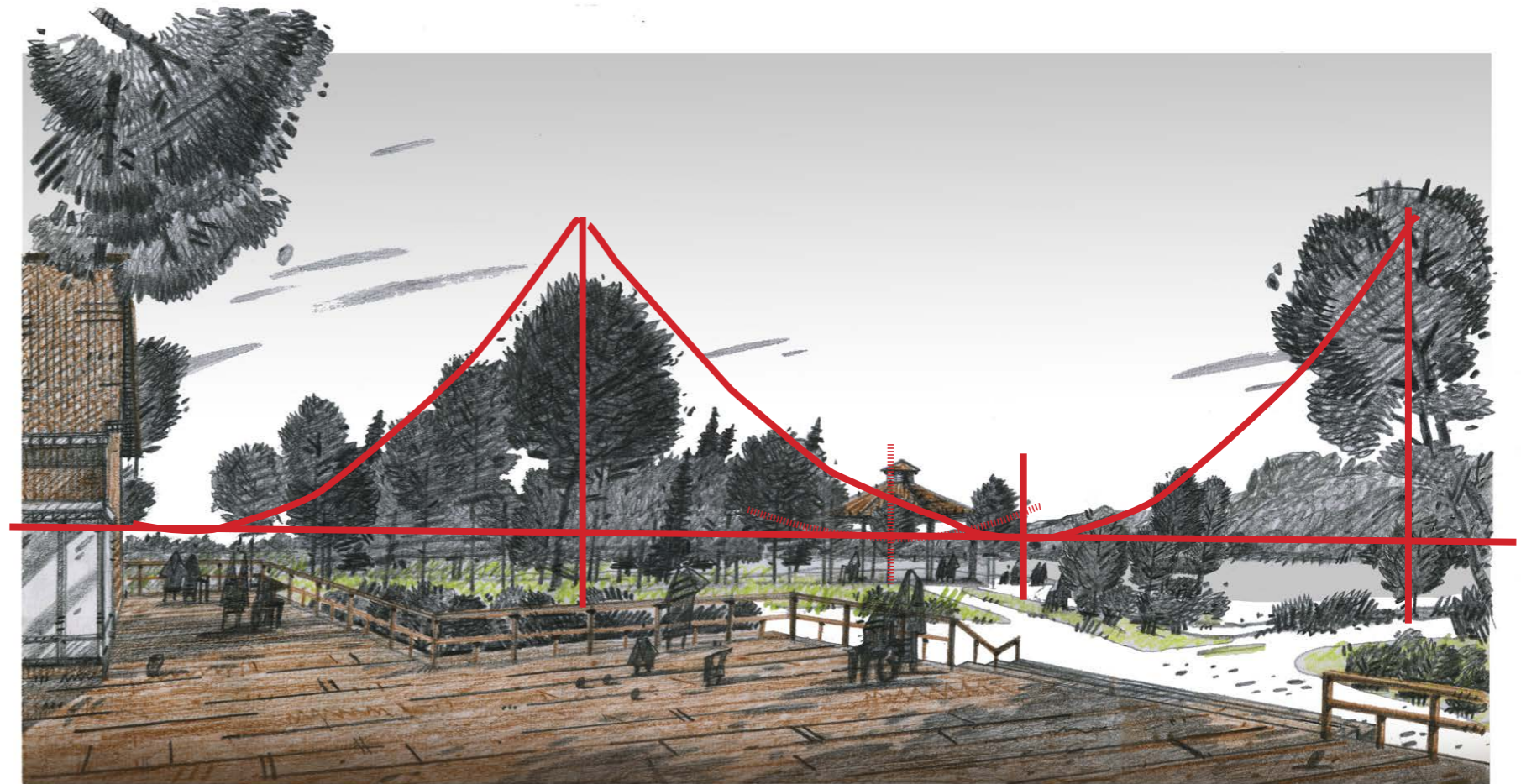


Figure 19. Horizontal balance

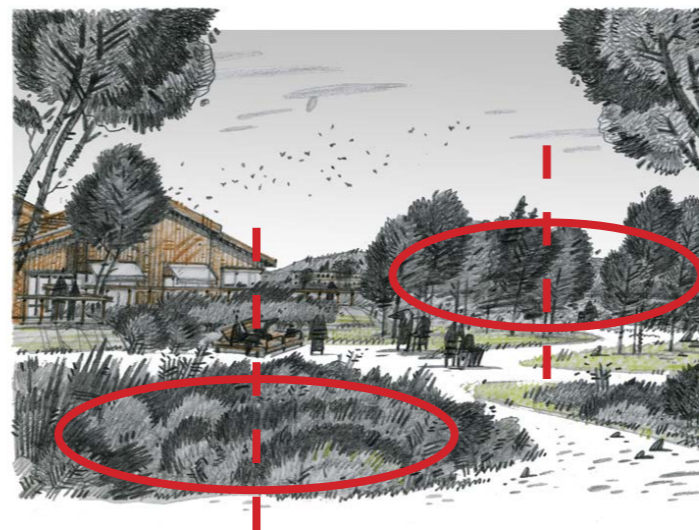


Figure 20. Asymmetrical balance



Figure 21. Alternation of open and closed views

4.3. The result of the therapeutic landscape design process at Mellannorrlund Hospice Centre using the contemplative landscape model.

The process resulted in a design proposal that unlocks the potential of the existing site and creates a therapeutic landscape that can have an impact on reducing stress levels. The conceptual design project proposes the creation of a therapeutic garden surrounding the hospice centre from all sides, but with a special focus on the western, west-south part. Firstly because it is on the western and southwestern part that the windows of the guest rooms of the hospice centre face. But also because it is the western part that has a valuable and open view of the lake, the opposite side of the shore, the hills and forests of the reserve.

The project proposes to emphasise infilling the space with trees for the following reasons. The main reason is the person's view from the bed. The area of the hospice centre, which is overlooked from the terrace, is not only below the level of the terrace, but also slopes down to the lake. Therefore, even the tallest arrangements of herbs and flowers will not bring the necessary variety and fulfilment to the view for a person lying in bed on the terrace. Another reason is the openness of the space to the sun and the lack of a natural source of shade in the hot summer time. And the last reason is that trees - as a middle tier - make it possible to create a division of space into several spaces with different characteristics and different experiences:

- A closed, cosy space, like a clearing in the forest.
- An open space with an open distant view and the possibility of meeting and spending time together with other people.
- A dense space of intensively planted trees, which provide a canopy with their crowns and are a kind of entrance to the walking path.
- A winding walking path with a ring in the form of a grove of fruit trees.

Thus, the proposed space firstly creates a diverse filling of the foreground, and secondly the space has different characteristics, which individually and collectively can have a positive impact on the human condition.

And a few words about the direct use of CLM in the process of creating a design project. As it was mentioned at the very beginning of this chapter, it is not yet fully understood how to transfer 2D principles into 3D space of the project. In this case study, under optimal conditions, this did not become a problem.

The work of improving each individual element is based on the corresponding chapter of the book (Olszewska-Guizzo 2023) and despite a rather detailed description, it is still a process based on subjective decisions. Therefore, the results of such a design process should be further investigated to see if the assumed high level of contemplation of the new landscape corresponds to the actual level of contemplation.

Discussion of method and results

The aim of this thesis was to test the contemplative landscape method using the Mellanorrlands Hospice centre as a case study, with the intention of creating a therapeutic landscape that would have a stress-reducing effect on patients. To accomplish this aim, two key actions were undertaken:

1. specific conditions and requirements for the contemplative landscape method case were identified. The first part of the case study describes the specifics of palliative care and its needs. And the second part describes the peculiarities of the case study selected for testing, concluding that this case study allows testing the method under optimal conditions.
2. In the process of using the method to analyse and design the project, both the advantages and disadvantages that the contemplative landscape method offers within the selected case study were recorded.

This paper has thus answered the following questions:

- What approaches and theories exist to consider the impact of therapeutic gardens on the human condition?
- What are the specific conditions and requirements of the case for which the tool is used?
- What features of the project are best demonstrated or improved by the tool?
- What unique benefits does the tool provide within the selected case study?
- What limitations or challenges do users of the tool face in using the tool?

And this discussion chapter will answer the question:

- What additional functionality or improvements could be added to the tool in the future?

5.1. Methodological discussion

The 'Research through Design' methodology chosen for this paper focuses on gaining information from the active design process itself, which fits well with the objectives of this thesis. However, the method used in the process requires critical analysis in terms of its applicability, depth and transferability of results.

The fundamental step of conducting a literature review is methodologically sound, providing the necessary background against which the design efforts of the research are contextualised. This review sets the stage for the application of the Contemplative Landscape Method (CLM). However, the effectiveness of this step depends on the breadth of sources and the criticality with which they are analysed. The focus on exploring the theoretical underpinnings of therapeutic gardens, while providing an understanding of the context, remains superficial and requires more critical evaluation, and an exploration of contrasting perspectives or divergent theories and approaches in the field.

The choice of a case study, namely Mellanorrlands Hospice Centre, as the basis of the research allows for a detailed examination of the applicability of CLM in a real-world setting. This approach is advantageous in its depth of understanding of the context and tangible insight into the effectiveness of the method. However, case studies inherently limit the generalisability of the findings. Whilst the study offers valuable insights related to a particular context, the extent to which they are applicable to other settings remains questionable. In addition, the criteria for selecting hospice centres and the data collection methods used during the visits are critical to the validity and reliability of the study findings.

A critical examination of the CLM method as it is used for analysis and design processes is the basis of the thesis. This two-phase testing allows for a comprehensive evaluation of the method's usefulness in assessing and creating therapeutic landscapes. Detailed analyses of contemplative and therapeutic qualities provide a nuanced understanding of the impact of the landscape. However, reliance on a single methodology for evaluation and design may introduce bias or limit exploration of alternative, potentially

complementary approaches. In addition, the conceptual nature of the project proposal, while deeply meaningful within of existing limits, emphasises the gap between theoretical exploration and practical implementation. The hypothetical application of the research findings to design principles is valuable, but also points to the need for further research that addresses this gap, perhaps through pilot projects or collaboration with real landscape projects.

The methodological framework of this thesis, incorporating literature review, case study and empirical validation, offers an integrated approach to understanding the role of therapeutic gardens in palliative care. The integration of an Exploration by Design methodology with a constructivist approach is particularly suited to the topic, emphasising empirical and context specific knowledge generation. However, a critical appraisal of this methodology reveals areas for improvement, particularly in terms of the evidence for the findings, deepening the critical analysis in the literature review, and bridging the gap between conceptual design propositions and their application in the real world.

5.2. Reflection on the use of CLM to analyse and develop a design proposal

Whilst the analysis has already been used by the researchers themselves for landscape evaluation, this may be the first time that the method has been used to develop a design proposal. Therefore, the experience of using the method for the analysis and for the development of the design proposal will be analysed separately.

The instructions for the CLM analysis provide clear and detailed advice on the choice of the viewpoint, the correct selection of the time context and the position of the observer. The step-by-step instruction is accompanied by questions, the answers to which help to evaluate each element separately. Unfortunately, both the answers to the questions and the evaluation are very subjective. Each of the seven CLM elements is a separate complex system that can be treated differently by different people, which can affect the overall landscape evaluation. And it turns out that a method that has a scientifically proven basis, when applied to the analysis, leaves a lot of room for subjectivity, which can significantly affect the result.

This subjectivity in the evaluation remains at the stage of design work, to which is added a subjective decision about the changes that need to be made to “improve” each element. Despite the detailed description of what each element should be like in order to make a significant contribution to the overall contemplation of the design, the role of the human factor is high.

If the method had the possibility of objective evaluation of the final result, the subjectivity of the analysis and design process could be neglected. But so far there is no

such possibility, perhaps it is worth to find a more objective form of this method.

It is also important to remember that passive observation of the contemplative landscape is not the only way of interacting with the landscape to reduce stress. Depending on the needs and capacities of hospice centres, it is worth considering the inclusion of other methods and elements of the landscape that have an impact on the person’s condition, such as nature sounds, smells, as well as walking and gardening.

5.3. Conclusions

It follows from the above that the use of CLM in the process of creating a therapeutic landscape for a hospice centre in order to create a space that has an impact on stress reduction cannot guarantee results at the moment due to the high level of subjectivity in the process of using the method. However, it should not be forgotten that this is a new method that is still being researched. But most importantly, as the literature review has shown, it is currently one of the few methods with scientifically sound evidence. In addition, the method has other important advantages. Firstly, the ranking of the seven elements allows for meaningful prioritisation of work on them and prioritising certain solutions in the design process with scientifically motivated support. Secondly, each element has a series of questions that are useful to answer when designing a therapeutic landscape. A detailed description of each element also helps to structure the work on the landscape in such a way that the result corresponds to the stated goals.

Thus, this thesis suggests that the Contemplative Landscape Method can make a significant contribution to the process of creating a stress reducing therapeutic landscape for The Mellannorrlund Hospice Centre. The method allows to identify and evaluate the elements of the landscape that have the greatest effect on stress reduction. The descriptive part of the method allows the development of a design proposal that realises the potential of each element and the whole landscape.

The method is well compatible with other approaches to the creation of therapeutic landscapes, firstly because it is a synthesising method and most schools and approaches can find their elements integrated into this approach. And secondly because the method focuses on the background, leaving enough space for the integration of other approaches.

5.4. Areas of application

The method can be applied not only to the landscapes of hospice centres, but can also be widely applied to the landscapes of various medical institutions, including those specialising in the treatment of mental and psychiatric illnesses. The method can also be applied to assess the values of urban, suburban and rural views. And to analyse and

create different urban landscapes, one of the objectives of which may be to reduce the stress of people who use it. As the author herself points out, the method can be used not only in analysing real landscapes, but also in analysing photographs and visualisations. (Olszewska-Guizzo 2023) Which allows us to talk about the use of this method in the creation of therapeutic visual pictures and visualisations. And we are only talking about the direct application of the method of creating a stress-reducing landscape. But stress reduction can also have a direct impact on other tasks, such as improving performance or learning, a sense of security and a sense of belonging.

5.5.Future research

To develop the method further, it would be useful to explore a number of questions. One of these is to investigate methods that would reduce the subjectivity of the analysis and design process through the use of CLM.

It would also be interesting to explore which environment works better: one that is rich in familiar elements or one that is rich in new ones. In other words, should we choose plants and species that are specific to a particular location, or is it desirable to use exotic species that could potentially have a better effect on stress reduction due to their external characteristics?

Another question that is very significant for this study is whether the effect of a highly contemplative landscape on stress reduction changes over time? People spend quite a lot more time in the hospice compared to those participated in the CLM study participants (Olszewska-Guizzo 2023) and it is important to understand whether the effect persists once they get used to the place?

What role do lighting, smells and sounds, colours play? Does music contribute to a faster and better immersion in the contemplative process?

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APPENDIX

STEP-BY-STEP SCORING WITH CLM


This step-by-step manual is a practical guide to assessing the quality of urban green spaces and how to objectively measure each of the seven key components of a contemplative landscape related to mental health and well-being. More details on the conceptual framework and definitions of these components can be found in the book *Neuroscience for Designing Green Spaces* by Agnieszka Olszewska-Guizzo.

STEP 1 Layers of the Landscape						
	1. Look at the landscape					
	2. Consider these questions:					
	<ul style="list-style-type: none"> Is there a depth in the view? What is in the foreground? Can you see the background? How far away is the farthest object? What is in between the fore- and background? Are the eyes of the observer automatically driven to far-away objects? Is the faraway view aesthetically pleasing? Or maybe is it somewhat disturbing? Are the visible layers of the landscape important to the overall scene, or is something else dominating the view? 					
	3. Give your score					
	<table border="1"> <tr> <td>5 or 6 points</td> <td>If the far-distance view is visible in the scene. Fore-, middle- and background are visible and the layers greatly enhance the visual quality.</td> </tr> <tr> <td>3 or 4 points</td> <td>If the visible layers only moderately enhance the overall visual quality.</td> </tr> <tr> <td>1 or 2 points</td> <td>If the layers are not visible at all or they do not enhance the overall visual quality.</td> </tr> </table>	5 or 6 points	If the far-distance view is visible in the scene. Fore-, middle- and background are visible and the layers greatly enhance the visual quality.	3 or 4 points	If the visible layers only moderately enhance the overall visual quality.	1 or 2 points
5 or 6 points	If the far-distance view is visible in the scene. Fore-, middle- and background are visible and the layers greatly enhance the visual quality.					
3 or 4 points	If the visible layers only moderately enhance the overall visual quality.					
1 or 2 points	If the layers are not visible at all or they do not enhance the overall visual quality.					

STEP 2 Landform						
	1. Look at the landscape					
	2. Consider these questions:					
	<ul style="list-style-type: none"> Is the ground flat or uneven? Is the topography natural? Are there any mounds or hills? Are the lines on the ground straight or undulating? Can you see waves and curved lines? Can you see distinct geometric figures with straight lines and sharp edges? Are there a lot of sharp angles and edges? If you were to walk bare-foot over the ground, would it be soft and comfortable? 					
	3. Give your score					
	<table border="1"> <tr> <td>5 or 6 points</td> <td>If the landform is undulating, natural lines are visible and the skyline shape is driving the eye to look at the sky.</td> </tr> <tr> <td>3 or 4 points</td> <td>If the landform is not very significant to this scene or it is hard to say anything about it.</td> </tr> <tr> <td>1 or 2 points</td> <td>If the landform is explicitly flat or rugged.</td> </tr> </table>	5 or 6 points	If the landform is undulating, natural lines are visible and the skyline shape is driving the eye to look at the sky.	3 or 4 points	If the landform is not very significant to this scene or it is hard to say anything about it.	1 or 2 points
5 or 6 points	If the landform is undulating, natural lines are visible and the skyline shape is driving the eye to look at the sky.					
3 or 4 points	If the landform is not very significant to this scene or it is hard to say anything about it.					
1 or 2 points	If the landform is explicitly flat or rugged.					
STEP 3 Biodiversity						
	1. Look at the landscape					
	2. Consider these questions:					
	<ul style="list-style-type: none"> Are there lots of plant species? Are there any visible animals? Is the vegetation tamed and manicured or rather does it appear wild and spontaneous? What gives motion and dynamism to this scene? Are the plants (likely to) move in the wind, change forms and colors with time of a day or season? Is there any plant, animal, or phenomenon in the scene that could make most people feel scared, lost, or uncomfortable? 					
	3. Give your score					
	<table border="1"> <tr> <td>5 or 6 points</td> <td>If the far-distance view is visible in the scene. Fore-, middle- and background are visible and the layers greatly enhance the visual quality.</td> </tr> <tr> <td>3 or 4 points</td> <td>If the visible layers only moderately enhance the overall visual quality.</td> </tr> <tr> <td>1 or 2 points</td> <td>If the layers are not visible at all or they do not enhance the overall visual quality.</td> </tr> </table>	5 or 6 points	If the far-distance view is visible in the scene. Fore-, middle- and background are visible and the layers greatly enhance the visual quality.	3 or 4 points	If the visible layers only moderately enhance the overall visual quality.	1 or 2 points
5 or 6 points	If the far-distance view is visible in the scene. Fore-, middle- and background are visible and the layers greatly enhance the visual quality.					
3 or 4 points	If the visible layers only moderately enhance the overall visual quality.					
1 or 2 points	If the layers are not visible at all or they do not enhance the overall visual quality.					

3. Give your score	
5 or 6 points	If there is a high diversity of species of plants and animals, vegetation seems native and spontaneous, and there are visible changes and motion to the scene.
3 or 4 points	If there is a moderate diversity of species and moderate possibility of changes and motion.
1 or 2 points	If there is a low diversity of species, no visible changes or motion, or if there are any biophobic phenomena present in the scene.

STEP 4 Color & Light

	1. Look at the landscape	
	2. Consider these questions:	
	<ul style="list-style-type: none"> • Are there a lot of bright and contrasting colors in the scene? • Are there any posters, billboards, or colorful road signage present? • Do the equipment and built structures have natural colors? • What is the weather like? • Would there be shade over the observer's head if it was a sunny day? • Would the shadows be visible on the ground during a sunny day? 	
	5 or 6 points	If the color palette is harmonious and natural, broken or warm colors are dominating, and light and shade movement can be seen.
	3 or 4 points	If there is a moderate amount of contrasting bright colors and moderate amount of light and shade.
	1 or 2 points	If there are lots of vivid, contrasting colors and light and shade is not visible with any weather conditions.

STEP 5 Compatibility

1. Look at the landscape	
2. Consider these questions:	
<ul style="list-style-type: none"> • Is there chaos and clutter within the scene? • Are there any odd elements that do not fit the composition? 	



- Did the designer do a good job balancing out man-made and natural objects?
- Are there any potentially interesting objects or views obscured?
- Is the scale of objects adequate and balanced?
- Is there anything else potentially confusing or disturbing about the design?

3. Give your score

5 or 6 points	If the physical and visual relations between elements are worked out well by the designer and there is an explicit spatial order, simplicity, and harmony between the natural and man-made elements.
3 or 4 points	If the physical and visual relations are not clear or some elements are disturbing the harmony and balance.
1 or 2 points	If the physical and visual relations are not worked out well or are random. Or if there is chaos, clutter, and lack of harmony.

STEP 6 Archetypal Elements



- | | |
|---|--|
| 1. Look at the landscape | |
| 2. Consider these questions: | |
| <ul style="list-style-type: none"> • Are any of the archetypal elements in the scene? • Are there any other elements present that might carry a symbolic meaning to most people? • Is the presence of archetypal elements dominating and important to the scene? • To what extent do these elements capture the viewer's attention? | |

3. Give your score

5 or 6 points	If the archetypal elements strongly influence the overall perception.
3 or 4 points	If the archetypal elements are present, but not important for the overall perception.
1 or 2 points	If there are no archetypal elements in the scene.

STEP 7 Character Of Peace & Silence



1. Look at the landscape

2. Consider these questions:

- Is there a visual or physical division between the green space and busy urban space?
- Are there lots of cars or people in the scene?
- Are there any comfortable seating areas that invite visitors to rest?
- What are the (potential) noise sources? Are they mostly artificial or natural?
- Does the space feel intimate and secure?
- Are there any tech-infrastructures visible such as wires, pipes, or antennas?

3. Give your score

5 or 6 points	If there is an explicit character of peace and silence in the scene, and it highly contrasts with the urban environment. The space seems accessible, secure, and with no technology. It invites visitors to rest and relax and gives a sense of solitude.
3 or 4 points	If there is a moderate character of peace and silence, sense of solitude, and/or there is less contrast with urban environment.
1 or 2 points	If there is no character of peace and silence, the space seems busy and there is no contrast with the urban environment.

CALCULATE AND INTERPRET THE SCORE

To get the overall CLM score for a scene, calculate the average of all attributed scores (divide the sum from all seven steps by seven). Interpret the scores for a scene using table below. If the total score is higher than 4.33, then you are dealing with a highly contemplative landscape scene that has a high chance of inducing desirable mental health and well-being outcomes in most people.

High contemplative score	> 4.33	High probability of inducing a significant positive brain response in most people.
Average contemplative score	3.83–4.33	Low to no probability of inducing a positive mental health response in most people. The case of most existing urban parks and gardens.
Low contemplative score	< 3.83	The scene most likely induces increased cognitive load and psychological strain – a brain response typical of busy urban space exposure in most people.

Popular science summary

This thesis, titled “Testing a Contemplative Landscape Method to Design a Stress-Reducing Therapeutic Landscape for Mellanorrlands Hospice,” delves into the integration of the Contemplative Landscape Method (CLM) within the realm of palliative care, aiming to enhance the therapeutic landscape around Mellanorrlands Hospice. With the global escalation in the need for palliative care, underscored by an aging population and the inherent stressors of end-of-life care, the study foregrounds the significance of interdisciplinary approaches in creating environments that foster emotional and psychological well-being for both patients and staff.

The research unfolds through a structured inquiry beginning with a comprehensive literature review. It establishes the foundational principles of therapeutic landscapes in palliative care settings, identifying the crucial role of natural environments in improving patient well-being. This review highlights the transformative potential of such landscapes to alleviate stress through both active and passive engagement with nature.

Following the literature review, the thesis presents a detailed case study of Mellanorrlands Hospice. It examines the hospice’s existing landscape, architectural layout, and the unique advantages offered by its location, such as panoramic views and the orientation of patient rooms, which are pivotal for the application of the CLM. This analysis underscores the hospice’s potential as an ideal setting for implementing therapeutic landscape interventions.

The empirical component of the study utilizes the CLM to analyze and redesign the hospice’s landscape. The method’s application reveals that, despite the site’s inherent advantages, the existing landscape achieves only a medium level of contemplation. The thesis proposes a design intervention aimed at unlocking the landscape’s full therapeutic potential, focusing on diversifying natural elements and creating varied contemplative spaces tailored to the needs of the hospice’s residents.

The research methodology, incorporating a case study approach and the CLM, enables a focused examination of the hospice’s landscape while acknowledging the subjective nature of the design process. Despite this subjectivity, the study successfully demonstrates the CLM’s utility in conceptualizing therapeutic landscapes, albeit highlighting the need for further methodological refinement and validation.

In conclusion, this thesis not only tests the CLM’s applicability in a palliative care context but also contributes to the broader discourse on therapeutic landscape design. It advocates for the importance of such landscapes in palliative care, suggesting that well-designed therapeutic environments can significantly impact patients’ quality of life. The findings call for ongoing research to refine the CLM, enhance its objectivity, and explore its applicability across different settings, ultimately aiming to establish a more holistic approach to designing spaces that support emotional and psychological well-being in palliative care.

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